IECON 2012

38th Annual Conference of the IEEE Industrial Electronics Society

Theme: Industrial Electronics for Sustainable Development



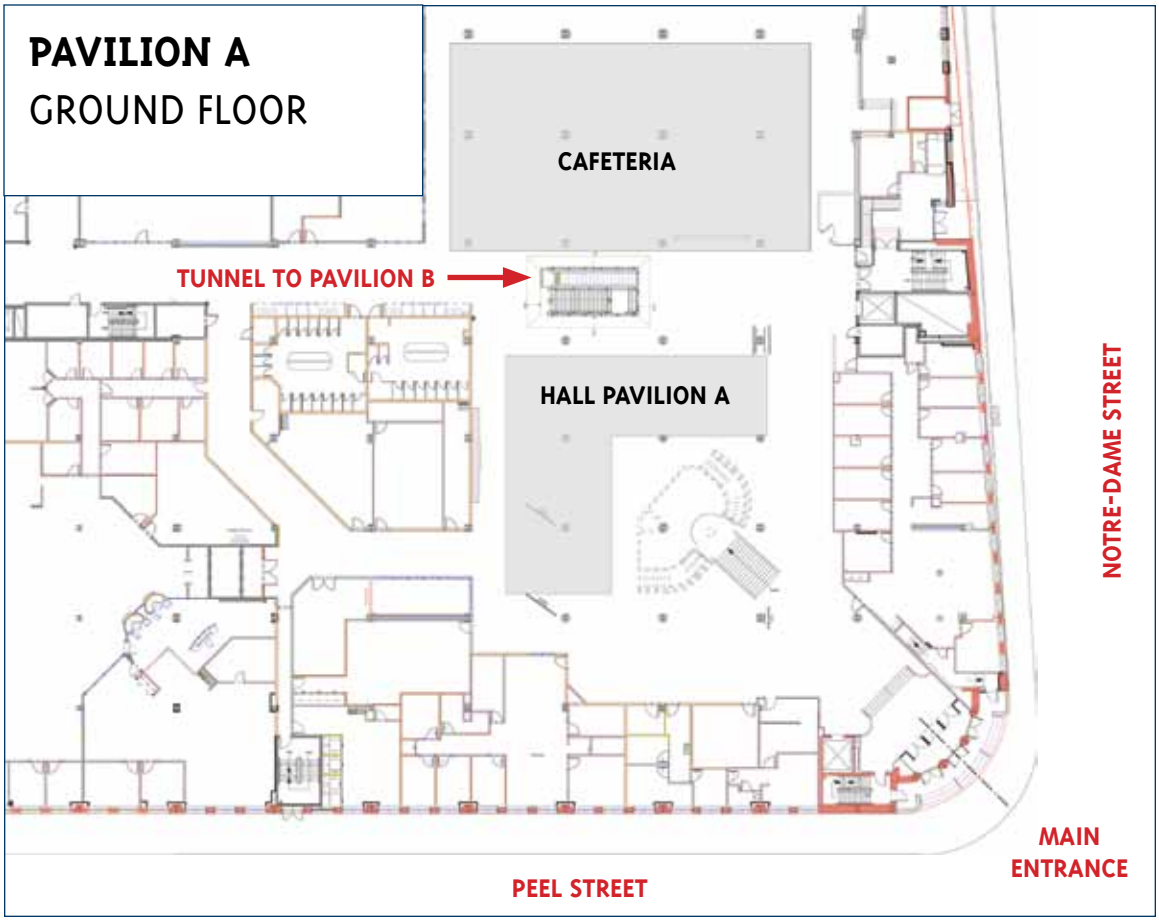
Conference Final Program

École de technologie supérieure (ÉTS)

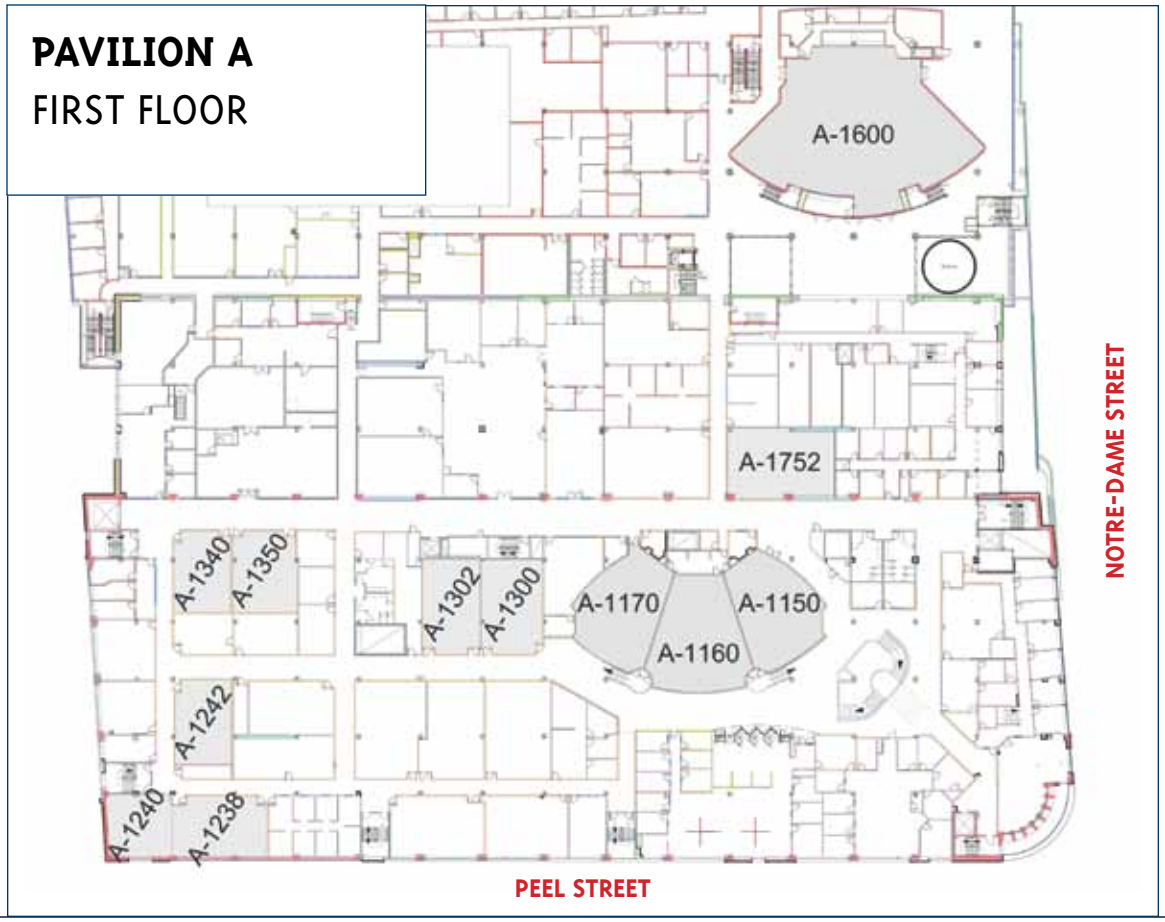
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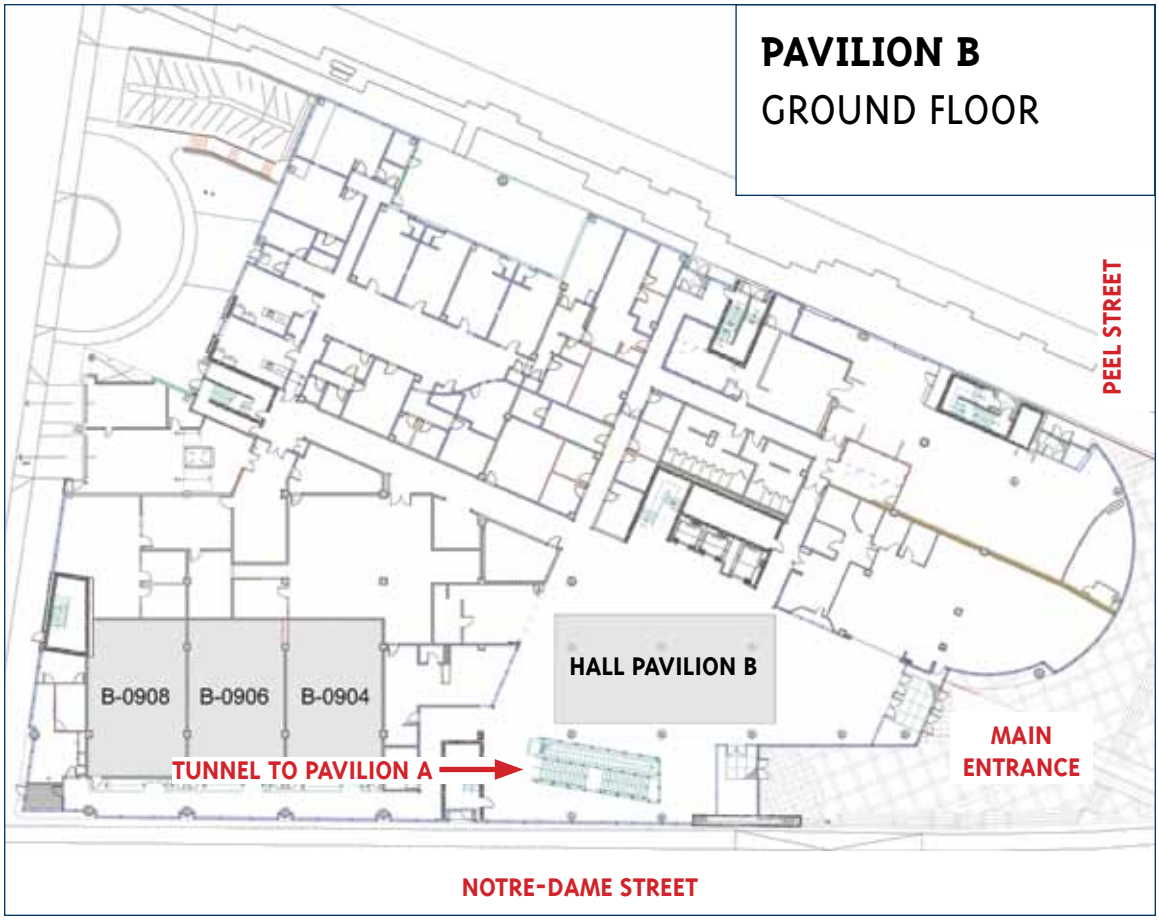
October 25th to 28th, 2012

PAVILION A
GROUND FLOOR



PAVILION A
FIRST FLOOR




PAVILION B
GROUND FLOOR
PEEL STREET
B-0908
B-0906
B-0904
HALL PAVILION B
TUNNEL TO PAVILION A
MAIN ENTRANCE
NOTRE-DAME STREET

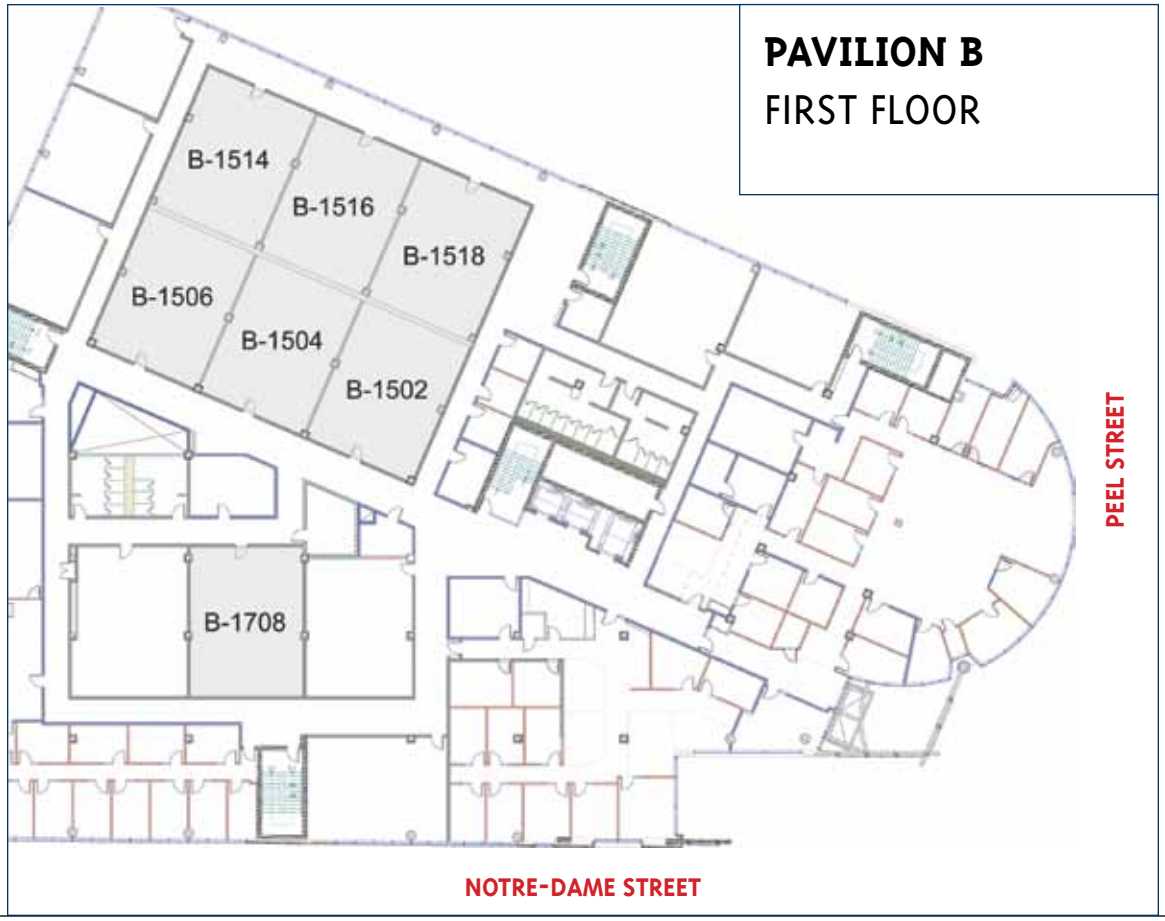

PAVILION B
FIRST FLOOR
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Conference at a glance

Time	Wednesday October 24th, 2012	Thursday October 25th, 2012	Friday October 26th, 2012	Saturday October 27th, 2012	Sunday October 28th, 2012
7:30-17:00		Conference Registration (Hall, Pavilion A)			
10:00-17:00		Exhibitors: Opal-RT, Plexim, Texas Multicore Technologies, Lab-Volt (Hall, Pavilion A)			
8:00-10:00		Opening **(at 8h30)** Plenaries 1, 2	Technical Sessions Tutorials 4, 5 Workshop Standards	Technical Sessions Tutorials 7, 8	IES Technical Commitees meetings (A-1150, A-1160, A-1170, A-1300, A-1302)
10:00-10:30		Break & Dialogue / Poster Session			
10:30-12:30		Technical Sessions Industry Forum	Technical Sessions Industry Forum Tutorials 4, 5 Workshop Standards	Technical Sessions ICELIE Tutorials 7, 8 Panel ETIE	IES Technical Commitees meetings (A-1150, A-1160, A-1170, A-1300, A-1302)
12:30-14:00		Lunch & Industrial Speaker			
14:00-15:40		Technical Sessions Industry Forum Tutorials 1, 2	Technical Sessions Industry Forum Tutorials 3, 6 Panel Smart Grid	Technical Sessions ICELIE Tutorials 9, 10	IES-VPTA Technical Activities Meetings (A-1150)
15:40-16:00		Break & Dialogue / Poster Session			
16:00-17:40	Conference Registration (Hall, Pavilion A)	Technical Sessions Tutorials 1, 2	Technical Sessions Tutorials 3, 6	Technical Sessions ICELIE Tutorials 9, 10	IES-VPTA Technical Activities Meetings (A-1150)
18:00		Welcome Reception ETS (Hall, Pavilion A)	Students Reception Bar 100 Génies (ETS, Pavilion B)	Closing Ceremony	
19:00			Banquet The Queen Elizabeth Hotel (Grand Salon)		
Conference sponsors: IEEE, IES, ETS, Opal-RT, SILKAN, Sysacom, ADRIQ, Hydro-Québec					

Technical program at a glance

Thursday, 25th of October

		Pavilion A										Pavilion B								
		First Floor										Ground Floor			First Floor					
		A-1150	A-1160	A-1170	A-1242	A-1300	A-1302	A-1340	A-1350	A-1752	A-1600	B-0904	B-0906	B-0908	B-1502	B-1504	B-1506	B-1514	B-1516	B-1518	B-1708
8:30		Conference opening and Plenaries (Main Hall, Pavilion A)																			
10:00		Break (Main Halls, Pavilions A and B)																			
10:30	Poster Session A (Main Hall Pavilion A)			TT07a		TT07b	TT09a	SS61a	SS35	TT08a	IF1	TT03a	TT02a	SS09		SS25	SS02	TT01a	TT11a	TT05	
12:30		Lunch and Industrial Speaker (Main Hall, Pavilion A)																			
14:00		TU2	TU1	TT07c	SS59a	TT07d	TT09b	SS61b	SS45	TT08b	IF2	TT03b	TT02b	SS08a	TT06a		SS07	TT01b	TT01c	SS10a	
15:40		Break (Main Halls, Pavilions A and B)																			
16:00		TU2	TU 1	TT07e	SS59b	TT07f	TT09c	SS11		TT08c		TT03c	TT03d	SS08b	TT06b		TT12a	TT01d	TT01e	SS10b	

Friday, 26th of October

		Pavilion A										Pavilion B								
		First Floor										Ground Floor			First Floor					
		A-1150	A-1160	A-1170	A-1242	A-1300	A-1302	A-1340	A-1350	A-1752	A-1600	B-0904	B-0906	B-0908	B-1502	B-1504	B-1506	B-1514	B-1516	B-1518	B-1708
08:00		TU4	TU5	TT07g	SS43a	TT07h	TT09d	SS40	SS56	TT08d		TT03e	TT02c	SS16a	SS62	SS29a	SS13a	TT01f	TT11b	TT10a	WS
10:00	Poster Session B (Main Hall Pavilion A)	Break (Main Halls, Pavilions A and B)																			
10:30		TU4	TU5	TT07i	SS43b	TT07j	TT09e	TT07k	SS05a	TT08e	IF3	TT03f	TT02d	SS16b	SS34	SS29b	SS13b	TT01g	TT11c	TT10b	WS
12:30		Lunch and Industrial Speaker (Main Hall, Pavilion A)																			
14:00		TU6	TU3	TT07l	Panel	TT07m	TT09f	SS39a	SS05b	SS24a	IF4	TT03g	SS38	SS28	TT06c	SS12a	TT12b	TT01h	TT11d	TT10c	WS
15:40		Break (Main Halls, Pavilions A and B)																			
16:00		TU6	TU3	TT07n	SS59c	TT07o	SS53a	SS39b	SS05c	TT08f		TT03h	SS23	SS15a	TT06d	SS12b	SS63	TT01i	SS22	SS32	SS24b

Saturday, 27th of October

		Pavilion A										Pavilion B								
		First Floor										Ground Floor			First Floor					
		A-1150	A-1160	A-1170	A-1242	A-1300	A-1302	A-1340	A-1350	A-1752	A-1600	B-0904	B-0906	B-0908	B-1502	B-1504	B-1506	B-1514	B-1516	B-1518	B-1708
08:00		TU8	TU7	TT07p	SS43c	TT07q	TT09g	SS44	SS05d	TT08g		TT03i	TT03J	SS64	SS55a	SS29c	SS46	TT01 j	SS48	SS27	SS01a
10:00	Poster Session C (Main Hall Pavilion A)	Break (Main Halls, Pavilions A and B)																			
10:30		TU8	TU7	TT07r	ICELIE	TT07s	TT09h	SS03	SS54a	TT07t	Panel	TT03k	TT03l	SS42	SS55b	SS50	SS65	TT01k	SS31	SS14a	SS01b
12:30		Lunch and Industrial Speaker (Main Hall, Pavilion A)																			
14:00		TU10	TU9	TT07u	ICELIE	TT07v	SS53b	SS06a	SS05e	SS39c		TT03m	SS18a	SS15b	TT06e	SS26a	SS37a	TT01l	SS60a	SS14b	TT04a
15:40		Break (Main Halls, Pavilions A and B)																			
16:00		TU10	TU9	TT07w	ICELIE	TT07x	SS53c	SS06b	SS54b	SS41		TT03n	SS18b	SS33	SS52	SS26b	SS37b	TT01m	SS60b	SS47	TT04b

General Information

General Information to all authors and attendees

This document is divided into two parts. The first part presents some general information very useful to all conference attendees and guests; you can find the necessary information about how to prepare your oral presentation, and the necessary requirements for poster presentations are also included in the first part. The second part presents the three days conference technical and social program. Please read carefully the following pages in order to get the maximum information which helps you have an easy stay at the conference.

SPONSORS

This IECON 2012 conference is supported by ADRIQ, ÉTS, IEEE, IES, Hydro-Québec, Opal-RT, SILKAN and Sysacom.

EXHIBITION- *Industry Forum*

The following industrial exhibitors will present their latest industrial electronics hardware and software technology, in pavilion A Main Hall: Opal-RT, Texas MultiCore Technologies and Plexim. Attendees will be able to visit the exhibition booths during coffee breaks, lunch hours. Industrial presentations are also organized under the industrial forum umbrella for two consecutive days (see conference program for more details). The exhibition opening hours are 10:00 to 17:00.

CONFERENCE LOCATION

The Conference location is the École de technologie supérieure (ÉTS).

ÉTS is situated in downtown Montreal at the crossing of Peel and Notre-Dame Streets at the following civic address:

1100 Notre-Dame Street West
Montreal, Quebec, Canada,
Tél :(514) 396-8800
http://www.etsmtl.ca

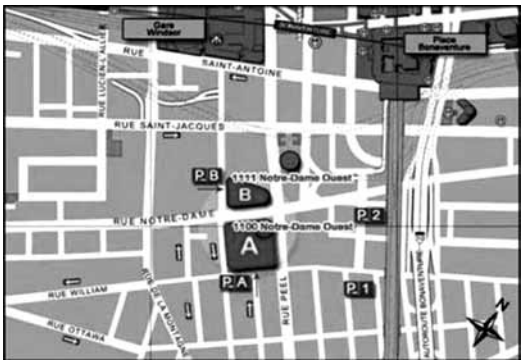
HOW TO GET THERE

From Trudeau Airport (Dorval) to Downtown

Follow Highway 20 East up to Highway 720 (also appears as Autoroute Ville-Marie on signs). Take Highway 720 East, stay in the right lane and take the exit de la Montagne, go south about 250 meters and turn left on Notre-Dame Boulevard. You'll see a huge, two modern buildings on both your right and left sides, at the corner of Peel and Notre-Dame streets. That's the ÉTS (1100, Notre-Dame Street West). If you continue on Notre Dame Street toward East, you will hit University Street (after 300 meters) where you see high rise building with Delta Hotel sign on it.

Using the public transportation

The ÉTS is located in Downtown Montreal, so it is easy to reach the Conference site using the subway. The closest "Metro" station is Bonaventure. Just follow the signs for Peel street exit, and go south about 250 meters to get to the ÉTS.



Map of downtown Montreal showing ETS pavilions A and B at the corners of Peel and Notre Dame Streets

OFFICIAL LANGUAGE

Presentations and conference activities will be conducted in the English language.

REFRESHMENTS AND LUNCHES

Coffee breaks and lunches are included in the registration fees. Coffee breaks and lunches will be served in the main Halls situated on the Ground Floor of each Pavilion (A et B).

WELCOME RECEPTION

A welcome reception will be held on Thursday October 25th, 18H00 in the ÉTS, Pavilion A, main Hall.

BANQUET

The Banquet Reception will be held on Friday October 26th in the evening at 19h. Both formal and smart casual dress are acceptable for the banquet. You should have your badge and/or your ticket in hand. Accompanying person must register or have acquired a ticket for this special event. The award ceremony will be held during the banquet.The event will take place at :

Fairmount Queen Elizabeth Hotel (room Grand Salon)
900 Rene-Levesque Blvd. W
Montreal, Quebec H3B 4A5

It is about 15 minutes walking distance from ETS main building.

STUDENT RECEPTION

The student reception will be held on Friday at 18h at Bar 100 Génies situated in Pavilion B of ETS (Ground Floor).

IES TECHNICAL COMMITTEES MEETINGS

The conference technical activities are planned for three consecutive days from Thursday October 25th until Saturday October 27th. Sunday October 28th is dedicated for Industrial Electronic Society technical committees meetings. Industrial Electronic Society has 19 technical committees covering all areas related to industrial electronics. You are very much welcome to attend, participate, and become member of the more suitable technical committee to your interest and career.

INTERNET SERVICES

Free of charge Internet wireless access will be provided to IECON2012 participants during the Conference three days. Please do bring a laptop with Wi-Fi facilities. The following informations are needed in order to access the wireless network:

Wireless Network: ETS-Public

Username: wifi-iecon2012@etsmtl.ca

Password: October.25-2012

TRANSPORTATION

Montreal Pierre Elliott Trudeau International Airport at Dorval (www.admtl.com)

Arrival and departure for domestic and international flights, located about 14 miles or 22 km west of downtown Montreal. Approximately 25 minutes away from the city. The cost to travel by taxi is of approximately $40.00 Canadian dollars + gratuity.

Busses from the airport to downtown Montreal are also available at lower price below 15$.

Local bus, metro, train service

Montreal's Metro (subway system) is safe and clean. Most of the major conference hotels are near a Metro entrance. For example, Bonaventure metro station will take you to Fairmount Queen Elizabeth Hotel. The bus system is sophisticated and, combined with the subway, gives you access to the entire city. Metro station Bonaventure is also the closest metro station to the ETS buildings where the conference is taking place.

Adult fare (bus and metro)

$3.00 per ticket or a strip of 10 tickets: $24

Weekly CAM: valid from Monday to Sunday: $23.50

Tourist card STCUM: $8 for 1 day, $16 for 3 days

Distribution centres: Infotouriste Centre, Tourist Information Center of Old Montreal and metro stations

You also get around using BIXI, a coupling of the words bicycle and taxi is the name Montreal's new public bike system. A first in Canada and in North America premiere in term of its scale.

BANKING FACILITIES AND FOREIGN EXCHANGE

The Canadian monetary system is based on dollars and cents. Because of current monetary exchange rates there is a difference in value between the Canadian and the American dollar. We advise you to have Canadian money during your travel in Canada to avoid any exchange problems and extra conversion fees. Legal tender is the Canadian dollar, which divides into 100 cents. Bills in following denominations: 5, 10, 20, 50, 100, 1,000 dollars. The coins in use are of the following denominations: 1, 5, 10, 25 cents, one dollar and 2 dollars.

Here are some currencies examples (table subject to changes every day; updated in August 2012):

1 CAD = 1.019096 USD	1 CAD = 0.955042 CHF
1 CAD = 0.789292 EUR	1 CAD = 6.405765 CNY
1 CAD = 0.630561 GBP	1 CAD = 2.065237 BRL
1 CAD = 79.569502 JPY	

You can also access the exchange rates at www.x-rates.com on the Internet. Foreign exchange facilities for travelers arriving in Canada are available daily, at the following hours:

Trudeau Airport: 7h00 to 24h00 hrs;

Foreign Exchanges, Downtown Montreal at the corner of Peel and Ste-Catherine streets

All major credit cards are accepted in most hotels, stores and restaurants. There is several exchange offices located in Downtown Montreal, one can also do the shopping using American funds in almost all of the stores and restaurants, but the exchange rate is not the best in this case.

CUSTOMS

Personal Identification (from the U.S.)

United States citizens or permanent residents of the United States can enter Canada with a passport or visa. However, it is advisable to carry evidence of citizenship, such as certificate of birth abroad, certificate of citizenship, certificate of naturalization, or a state birth certificate. If these documents do not contain a photograph, a driver's license or other photo identification can be combined with these forms of identification to establish identity. Permanent residents of the United States who are not citizens should carry a Resident Alien Card.

Personal identification (from the other countries)

All persons visiting Canada from other countries must be in possession of a valid passport unless they are United States citizens or legal, permanent residents of the United States. It is the responsibility of the visitor, before entering Canada, to ensure that he or she has the required documents, including those for entry into another country or re-entry into his or her own country.

Personal Baggage

Clothing and goods for personal use by the visitor during their stay in Canada are admitted free of duty. Persons may bring in limited quantities of tobacco products duty free. Items such as cameras, tape recorders, computers or sporting equipment should be registered with the custom service in the traveler's country of residence prior to departure to prove they were purchased before entering Canada.

Gifts

Gifts, excluding tobacco, alcoholic beverages and advertising matter brought into or mailed to Canada by non-residents may be allowed free entry if the value of gift or gifts for any one recipient from any one donor does not exceed $60 (Can). Gifts valued at more than $60 (Can) are subject to regular duty and taxes on the excess value.

HEALTH INSURANCE

The Canadian Health Insurance Plan does NOT cover visitors. Make sure you have your own full cover insurance, doctor visit and medications are costly and hospital stay charges are out of mind.

LIABILITY

The Conference fees DO NOT include provisions for the insurance of participants against personal injuries, sickness, and theft or property damage. This also applies to any event held during the Conference period. Neither the École de technologie supérieure and the Conference Organizing Committee, nor its sponsors nor committee members assume any responsibility for loss, injury or damage to persons belongings, however caused.

WEATHER

During the month of October, the weather is usually cool in Montreal. The average low temperature is 3°C. and the average high temperature is 13°C. With the ever changes in the world climate one can expect much surprises. For more precise information about Montreal weather we do recommend you to check before your departure the following URL:

http://www.montrealweather.com

LIQUOR LAWS

Beer hails (brasseries) are permitted to serve liquor from 8 a.m. to 1 a.m. All other establishments are allowed to serve alcoholic beverages from 11 a.m. to 3 a.m. The legal drinking age in Quebec is 18. Liquor stores (Société des alcools) are open all week, but closed on official holidays. A few selected outlets are open on Sunday. Beer and wine are also sold in convenience and grocery stores.

METRIC CONVERSION

Canada operates on the metric system of weights and measures. Visitors will find weather temperature reports given in degree Celsius, gasoline sold by the litre (milk and wine by millilitres and litres), grocery items in grams and kilograms, fabric lengths in meters, and road speeds posted in kilometres per hour.

0°C. = 32°F	1 mile = 1.61 km
1 meter = 1.094 yard	1 pound = 453.6 grams
1 km = 0.62 mile	1 litre = 0.22 Canadian gallon

PARKING

One can find several parking lots not far from the ÉTS. All the hotels have their own parking lots. The city also runs many lots with thousands of spaces and the commercial arteries all have parking meters with varying hourly rates between $1.00/hr and $3.00/hr. Street signs show where parking is allowed and when. It is very important to pay attention to the street signs because the fines vary between $42 and $175 with the possibility to be towed away if the car is parked on a particularly busy road at the wrong time. ETS underground parking lots are located in Pavilion A (entrance from rue William) and in Pavilion B (entrance from rue Jean-d'Estrées). They are very convenient at the cost of 3.75$ per hour or 13$ per day, single entry. The only restriction about the ETS parking lots is you have to pay by credit card only.

POSTAGE

Rates for first class mail and post cards:

Canada:	$0.61
USA:	$1.05
Other countries:	$1.80

SALES AND SERVICES TAXES

The Federal goods and services tax (GST) of 5% is charged on most goods and services in Canada. A Quebec provincial tax (QST) of 9.5% is applied to all goods and services purchased in Quebec.

TIPPING

In general, a tip of 15% is given to waiters, waitresses, hairdressers, taxi drivers, etc. Bellhops, doormen, porters, etc., at hotels, airports and railway stations are generally paid $1 per item of luggage.

USEFUL ADDRESSES

Web site of the conference: www.iecon2012.org

E-mail address of the conference: iecon2012@etsmtl.ca

Correspondence address:

Attention to: Lilianne Sanschagrin
Electrical Engineering Department
100 Notre Dame Street West
Montreal, Quebec
Canada H3C 1K3

For more information about ETS call 514-396-8800.

ACCOMMODATIONS

The following hotels are within walking distance from ETS (about 15 minutes by walk).

The Fairmont Queen Elizabeth (official IECON2012 and IES AdCom Hotel)

900 boul. René Lévesque Blvd West Montreal, H3B 4A5

Special rates are available for the conference. You should mention the reference number « IECON2012 » when reserving your room. More information is available on the conference web site (see Accommodations). For your reservations, we recommend you to access the internet link or call direct: 1-888-610-7575.

Le Nouvel Hotel

1740 René-Lévesques Blvd. West Montreal, H3B 1R3

CAR RENTALS

One can find the counters of the major car rental companies at the airport and in Downtown Montreal. The counters are located on the ground floor of the multi-level parking facility in front of the terminal.

REGISTRATION

Registration is required for all Conference participants, including officials, session chairpersons, tutorial presenters, exhibitors and authors. Family members need not to register for the Conference but must register and prepay for the Banquet. The Conference registration fee includes admittance to all technical sessions, a copy of the conference program, the conference proceedings on USB, lunches and refreshments.

Registration Desk

The registration desk is located in ÉTS pavilion A, main Hall and is open during the following hours:

Wednesday October 24th 2012	16h00 to 17h40
Thursday October 25th, 2012	07h30 to 17h00
Friday October 26th, 2012	07h30 to 17h00

Badges

Badges must be worn at all times in order to gain entry to the scientific sessions and other functions organized by the conference. Accompanying persons who complete the appropriate section of the registration form will be given distinctive badges.

REFRESHMENTS

Refreshments (coffee, etc.) will be available both mid-morning and mid-afternoon during coffee breaks (meeting with the exhibitors). They will be available in the main Halls of each Pavilion (A and B) located on the ground floor.

AUDIO-VISUAL EQUIPMENT

Each session room will be equipped with an electronic projector. To avoid presenters overlap and disruption of the session, author/presenter **will not be allowed to use her/his own computer and all files will need to be downloaded to the computer from a USB key**. All presentations will be supported with Microsoft PowerPoint software. Each author/presenter must assure that all fonts needed for his presentation are embedded in the files, which are compatible with Microsoft Office 2007.

You should have your presentation on a USB port and download it before the session starts.(for the morning session you should download at 10 am, for the afternoon sessions, you should download your presentation at 13H30 and 15h40).

If you bring a PowerPoint file or a notebook for your presentation, be sure all the fonts needed are installed and that you are very familiar with the operation of the computer. Computer based presenters are required to bring a back up set of file is necessary in case of data loss.

ORAL PRESENTATION

For all oral sessions, each paper is allotted 20 minutes for the presentation, including 5 minutes for questions. Session Chairpersons have been asked to adhere strictly to the timetable to allow delegates to attend the papers of their choice where no conflicts exist; special effort been made to reduce such conflicts to the minimum possible. IECON 2012 presenters are required to meet their session chairman in the session room at least 15 minutes before the scheduled time in order to introduce themselves and receive the appropriate instructions from the session chairs. Each author/presenter has to provide the session chairman with a PowerPoint or PDF presentation, as well as a short (10-line maximum) printed bio.

We strongly advise the following for oral presentation:

- Avoid using more than 6 lines of text and minimize the number of words on each visual aid.
- Graphs should have a maximum of two data traces.
- A fast presentation is one slide per minute. A more relaxed pace would be two minutes per slide. Adjust the number of slides (15 to 20 slides max). Remember you have 15 minutes for the presentation and five minutes to answer all questions.
- Simple is better, avoid a lot of unnecessary formatting. We are interested in your technical content, not your PowerPoint skills.
- Put your company or university logo on your title slide only; this is a technical presentation to your peers, not a marketing pitch to a customer.
- Computer presentation works well when using dark background with light text and color scheme. Avoid flashy Christmas light multiple colors and other distracting means.

POSTER PRESENTATIONS

The Poster Sessions are scheduled each day of the Conference from 10:00 to 17:40. The posters should be installed on the appropriate poster supports located in a dedicated area in the main hall of Pavilion A before 10 am. The posters will be exposed the all day for IECON2012 atteendees to consult. Poster presenters are required to be by their posters during coffee breaks and lunches. All posters should be removed from the main hall at 17h40 every day.

Available poster surface area is restricted to A0 (A series format in mm), 841 x 1189 mm, or in inches 33.1 in by 46.8 in. Authors are expected to set up their presentation before the session commences. Your poster will be hanged using Velcro material that will be supplied by the session chair.

Poster presentations are a different style of conference activity; you are advised to take the time to prepare your material well. Please note that you cannot just pin up copies of your published paper it is not allowed. A good poster display will catch the eye of the viewer, present logical sequence of material in a visually appealing way, and not require the reader to examine large tracts of detailed text. Keep these ideas in mind when preparing your Poster.

The concept of the poster session is that authors remain at or near their paper, and engage in direct discussion with conference delegates as they come past. This type of presentation allows for more in depth discussion with the audience, and provides the opportunity for extended interaction where there is a mutual interest. However, it only works if the authors are available for discussion so please don't just hang your poster and walk away! The session chair will provide additional help if you need any assistance during the poster session.

Welcome Message from ETS's CEO

The École de technologie supérieure (ÉTS) is very proud to welcome all the participants to the 38th Annual Conference of the IEEE Industrial Electronics Society (IECON 2012). Delegates from 65 countries will be attending the conference with their attention focused on industrial and manufacturing theory and applications of electronics, controls, communications, instrumentation and computational intelligence. IECON 2012 will be held concurrently with the 6th IEEE International Conference on E-Learning in Industrial Electronics (ICELIE 2012).

Since you will spend a few days in our university, I would like to introduce you to our engineering school. Established in 1974, ÉTS, which is part of the Université du Québec network, specializes in applied engineering and technology. Ranked 1st among engineering schools in Québec and 4th in Canada based on the total number of Bachelor's degrees awarded each year, ÉTS focuses on work-study programs and seeks, in particular, to develop new technologies and transfer them to businesses. From the outset, it has maintained a unique partnership with the business community and industry and close ties with big companies and small and medium-sized enterprises. Most of its professors are experts in various engineering fields and have work experience in an industrial environment.

ÉTS is the only engineering school in Québec whose undergraduate engineering programs were specifically created for graduates of college technical programs seeking university training. Our programs are designed as a natural extension of their technical training. The school has over 6,500 students including 1,350 in graduate and doctoral programs. Every year, it welcomes over 1,500 new students in 75 undergraduate, graduate, and post-graduate programs. The job placement rate among our Bachelor's degree graduates hovers around the 100% mark. On average, for each graduate, we receive 8 job offers. For Software Engineering and IT graduates, it's more like 21 job offers!

ÉTS educates professional engineers and researchers who are renowned for their practical and innovative approach. In the 42 engineering schools and faculties in Canada, ÉTS ranks among the bests, with fifty chairs, research centres and laboratories, to which PDFs and graduate students are associated. This synergy of expertise and experience contributes to scientific progress, higher industrial productivity and quality, as well as the training of a highly qualified workforce. Funding for research and innovation exceeds 20 million dollars, with 75% generated directly by research activities conducted in collaboration with industry.

In conclusion, I want to reiterate that the ÉTS is honoured to welcome you all in its premises, and of course, in our beautiful city of Montreal. I wish all participants a productive and successful conference, great meetings with interesting people and many occasions to develop new scientific collaborations.

Québec and Canada are home of many renowned industries in the fields of, among others, aeronautics, transportation, hydroelectricity, information technology and life science industry, such as pharmaceutics. Your presentations and discussions on the state-of-the-art of industrial electronics and related areas will surely benefit, in the coming years, to many of these companies.

Have a great time in Montréal!



Dr Yves Beauchamp, Eng., Ph.D., FCAE
École de technologie supérieure
Montréal, Québec, Canada

A Warm Welcome from IECON2012 Chairmen

It is with great pleasure and honor we welcome all the participating delegates from 70 countries to take part in the 38th Industrial Electronics Conference IECON that is being held in Montreal in the province of Quebec, Canada, from October 25th through 28th, 2012. Welcome you all to the beautiful city of Montréal!

Montréal IECON2012 conference happens to be a record breaking one. About 1000 papers are included in the final conference program. We are looking forward to hosting about 1000 people. Believe me if I say that this is the biggest event ever organized by the Industrial electronics society.

This world class IEEE conference is hosted by the École de Technologie Supérieure (ETS), which is one of the most dynamic and industry linked engineering schools in North America. ETS is also the third biggest engineering school in Canada.

The conference is supported by the electrical engineering department personnel, Canada Research Chair in Electric Energy Conversion and Power Electronics (CRC-EECPE) researchers, by the research group in Power Electronics and Industrial Control, and certainly by the personnel from the École using advanced multimedia facilities.

ÉTS is offering to the attendee high tech environment that is located very close to downtown Montreal. It is also very interesting because we are located within walking distance of the historical Old Montreal. We are sure you will be very excited about the typical Montreal atmosphere and festivities.

We believe that participating in the IECON 2012 is an opportunity to access the most recent critical information and update your knowledge by taking part of the 175 technical sessions covering the most relevant technological development in the Industrial Electronics area. We have planned three intensive very stimulating days filled with 10 free of charge tutorials, 2 highly reputed keynote speakers, 3 world renowned industrial luncheon speakers, an industry forum on sustainable development with experienced speakers, 65 special sessions, 172 technical oral sessions, 3 poster sessions, student gathering, a workshop, several discussion forums-panels and industrial exhibitors. It is a very stimulating and highly rich experience to see industrial leaders and exhibitors interacting with IECON 2012 attendees to make this event very interesting and unique. We assure you that IECON 2012 local organizing committee is striving to offer you a very interesting and an enjoyable stay in Montreal.

We would like to thank all authors and participants who have contributed to make this event a great success. Special thanks to: ETS for hosting us, all the volunteers who have worked very hard at all levels, those who participated in the review process, the special sessions organizers, the technical tracks chairs, the publicity chairs, the technical committees members, the industry forum organizers, the local and international organizing committees, in making this event unique. Thanks to all IES officers who helped us in promoting Montreal as the host of IECON2012 for the first time in IECON history.



Prof. Kamal Al-Haddad

IEEE-IECON2012 General chairs



Prof. Bogdan M Wilamowski

Message from the IECON 2012 Technical Program Chairs

On behalf of the Technical Program Committee, bonjour and welcome to Montreal and to the 38th Annual Conference of the IEEE Industrial Electronics Society (IECON 2012). IECON is the flagship annual conference of the IEEE Industrial Electronics Society (IES) and has been a leading international conference organized to present the latest advances in the applications of industrial electronics.

IECON 2012 has created history! It has crossed all previous records of paper submission on the series. 1346 papers from nations covering all the continents were submitted. Credits go to all the track chairs, Special Session Organizers and expert reviewers to get the paper reviewed in a short span of time. Authors' hard efforts are acknowledged through acceptance of their brilliant research work. Congratulations to all the authors!!! It is your hard work and your earnest effort those made IECON 2012 a record breaking event.

The coverage of IECON is very wide and this IECON is no exception. We have 12 regular tracks covering power electronics, machines, drives, power system and renewable energy in one hand and control, signal processing, robotics, mechatronics, and industrial informatics on the other. Also 66 call for papers for Special Sessions on advanced and cutting edge technologies were launched. The program also includes 10 tutorials from experts. There will be industry forum, workshop on standards, and speakers from industries, who will bridge the gap between universities and industries. Dear friends! The atmosphere is charged! Please use this for your maximum benefit.

All submissions were thoroughly reviewed; only 1004 high quality papers were accepted and included in the program. 911of these papers are organized into 172 oral sessions and 93 are presented in 3 dialogue/poster sessions. The program is arranged in a way such that the participants could move around from sessions to sessions according to one's interest. However, due to a large number of papers to be presented, there are parallel sessions put on similar topic. Therefore, one has to plan in advance to hop through papers of his/her interest. We are sure your experience will be rewarding.

We are deeply grateful to our track chairs, special session organizers, and reviewers. They spent many hours evaluating the technical merit of the papers and organizing the best into oral and dialogue sessions. The quality of their work makes the conference successful as a professional and technical activity. We are likewise indebted to those who organized tutorials. These experts give us the benefit of their collective wisdom, knowledge, and experience in a convenient and efficient format. Finally, we extend our sincere thanks to our authors. Their willingness to share the fruits of their hard work makes a technical conference worthwhile to each of us as engineering professionals.

Our sincere appreciations go also to the Society Officers, AdCom members, IES-Technical Committee Chairs/ Members, President and Past Presidents of IES for their excellent support. Finally, we put on record the cheerful and great leadership of Prof. Kamal Al-Haddad and Prof. Bogdan Wilamowski, which was a great inspiration for us to take this IECON to a different level.

Thank you! We are sure that you will enjoy your stay in Montreal and would be immensely benefitted through technical interaction with experts at the conference.



Prof. Luis Gomes,
Portugal



Prof. Chandan Chakraborty,
India



Prof. Louis A Dessaint,
Canada

Welcome Message to ICELIE Attendees

On behave of the International Conference of eLearning in Industrial Electronics (ICELIE 2012) we wish to offer a hearty welcome to all the participants and exhibitors of this conference. We also extend our thanks to all those contributed in the organisational and review process of this conference.

The conference committee had the challenge of keeping the conference focus on the specific eLearning of the educational process as applied specifically on industrial electronics. Therefore, many good papers had to be rejected as deemed to be outside the scope of this conference. The scope of the conference is currently under review to enable a wider participation from the relevant academic community in order to better serve the Industrial Electronics Society members.

This conference is the output of the collaborative work of the Industrial Electronics Society's technical committee on education with the IEEE Education Society.

The conference committee hopes that you will find this focussed conference intellectually stimulating and sociably enjoyable.

We wish you an enjoyable time in Montreal.

Conference Committee,

ICELIE 2012

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TPC-9 SENSORS, INTEGRATORS AND SYSTEM INTEGRATION
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TPC-12 SOFTWARE
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IECON 2012- Special Session Organizers

SS00 PANEL ON EMERGING TECHNOLOGY IN INDUSTRIAL ELECTRONICS
Bogdan willamowski, USA
Mariusz Malinowski, Poland
Kamal Al-Haddad, Canada

SS01 NETWORK-BASED CONTROL SYSTEMS
Josep M. Fuertes, Spain
Mo-Yuen Chow, USA

SS02 REAL-TIME WIRELESS COMMUNICATION FOR INDUSTRIAL APPLICATIONS
Dr Mikael Gidlund, Sweden
Dr Johan Akerberg, Sweden

SS03 INDUSTRIAL ELECTRONICS APPLIED TO INDUCTION HEATING
Prof. Oscar Lucia, Spain
Prof. Claudio Carretero, Spain

SS04 ADVANCED TECHNIQUES FOR IDENTIFICATION AND CLASSIFICATION IN SMART METERING
Dr. Djaffar Ould Abdeslam , France
Prof. Dr. Dirk Benyoucef, Germany
Thomas Bier, Germany

SS05 POWER CONVERTERS AND CONTROL FOR DISTRIBUTED GENERATION
Dr. Akshay K. Rathore, Singapore
Prof. Herbert Iu, Australia
Dr. Dylan Lu, Australia
Prof. Ashoka Bhat, Canada

SS06 ADVANCED TOPOLOGIES AND CONTROL FOR WIND ENERGY CONVERSION SYSTEMS
Dr. Mario Duran, Spain
Dr. Samir Kouro, Chile
Prof. Emil Levi, UK
Prof. Bin Wu, Canada

SS07 ENERGY AND INFORMATION TECHNOLOGY
Prof. Peter Palensky, Austria
Prof. Hiroaki Nishi, Japan

SS08 MULTIPHASE VARIABLE SPEED DRIVES
Prof. Federico Barrero, Spain
Prof. Emil Levi, UK

SS09 PERMANENT MAGNET SYNCHRONOUS MOTOR SENSORLESS DRIVES
Prof. Tian-Hua Liu, Taiwan

SS10 INTELLIGNET REAL-TIME AUTOMATION AND CONTROL SYSTEMS
Thomas Strasser, Austria
Alois Zoitl, Austria
Valeriy Vyatkin, NewZealand
Antonio Valentini, Belgium

SS11 HIGH POWER FACTORS RECTIFIERS
Dr. Hadi Y. Kanaan, Lebanon
Dr. Dorin O. Neacsu, USA
Prof. Kamal Al-Haddad, Canada
Prof. Imad Mougharbel, Lebanon

SS12 HIGH PRECISION MOTION CONTROL FOR MECHATRONIC SYSTEMS
Hiroshi Fujimoto, Japan
Makoto Iwasaki, Japan
Roberto Oboe, Italy

SS13 ADVANCED SIGNAL PROCESSING TECHNIQUES FOR FAULT DETECTION AND DIAGNOSIS OF ELECTROMECHANICAL SYSTEMS
Mohamed Benbouzid, France
Vincent Choqueuse,(France
Jose A. Antonino-Daviu, Spain
Martin Riera-Guasp, Spain

SS14 MEMS_MICROSENSORS AND MICROACTUATORS
Ridha Ben Mrad, Canada
Stefan Gassmann, Deutch
Carmen Aracil, Spain

SS15 ADVANCES IN ENERGY STORAGE DEVICES AND SYSTEMS
Federico Baronti, Italy
Mo-Yen Chow, USA
Nihal Kularatna, New Zealand
Hubert Razik, France
Roberto Saletti, Italy

SS16 ELECTRIC MACHINES AND HYBRID VEHICULES
K. T. Chaun, China
Ming Cheng, China

SS17 RESILIENCE COMPUTATION AND CONTROL IN INDUSTRIAL APPLICATIONS
Milos Manic, U.S.A.
Craig Rieger, U.S.A.

SS18 ASSISTIVE TECHNOLOGY ON HUMAN FACTOR
Prof. Hiroshi Hashimoto, Japan
Prof. Sho Yokota, Japan
Prof. Kang-Hyun Jo, Korea

S19 ELECTRICAL AND ELECTRONIC STANDARDS IN THE AUTOMOTIVE APPLICATIONS AND RELATED INFRASTRUCTURE, INCLUDING THE VEHICLE ELECTRIFICATION AND VEHICLE CONNECTIVITY
Victor Huang, USA
Joachim Taiber, USA

SS20 HARMONISATION OF STANDARDS AS A RESULT OF CONVERGENCE OF TECHNOLOGIES IN MODERN TECHNICAL AIRCRAFTS
Victor Huang, USA
Thomas Strasser, Austria
Alois Zoitl, Austria
Valeriy Vyatkin, New Zealand
Antonio Valentini, Belgium

SS21 COGNITIVE SYSTEMS FOR NAVIGATION
Dr. Larisa Dunai, Spain
Dr. Guillermo Peris Fajarnes, Spain

SS22 AMBIENT INTELLIGENCE OF MOBILE ROBOTS OR VEHICLE WITH HUMAN FACTORS
Kang-Hyun Jo, Korea
Seiji Hata, Japan
Burkhard Wuensche, New Zealand
Hiroshi Hashimoto, Japan

SS23 POWER CONVERTERS CONTROL AND MANAGEMENT IN ELECTRIC AND FUEL CELL VEHICLES
Dr. Akshay K. Rathore, Singapore
Dr. Sheldon Williamson, Canada
Dr. David Dorrell, Australia

SS24 WIND TURBINE MODELING, IDENTIFICATION, CONTROL AND FAULTS DIAGNOSIS
Dr. Innocent Kamwa, Canada
Prof, Mohamed Benbouzid, France
Prof, René Wamkeue, Canada

SS25 RESEARCH AND DEVELOPMENT PROJECTS ON INDUSTRIAL AGENTS
Paulo Leitao, Portugal
Jose Barata, Portugal

SS26 HAPTICS FOR HUMAN SUPPORT
Prof. Seiichiro Katsura, Japan
Prof. Kiyoshi Ohishi, Japan
Prof. Yasutaka Fujimoto, Japan

SS27 ADVANCED TECHNIQUES FOR POWER MANAGEMENT
Dr. Djaffar Ould Abdeslam, France
Prof. Patrice Wira, France

SS28 CONTROL AND MODELING OF HIGH SPEED MOTORS
Jan Chysky, Czech Republic
Martin Novak, Czech Republic

SS29 TOWARDS A MORE EFFICIENT LIGHTING
Ricardo Nederson do Prado, Brazil
J. Marcos Alonso, Spain
Tiago Bandeira Marchesan, Brazil
Marco Dalla Costa, Brazil

SS30 INTEROPERABILITY IN CLOUD COMPUTING
Prof. Claudia-Melania Chituc, Portugal

SS31 DESIGN AND REAL-TIME IMPLEMENTATION OF OBSERVERS FOR INDUSTRIAL SYSTEMS
Dr. Mickael Hilairet, France
Dr. Lahoucine Idkhajine, France

SS32 EMBEDDED SYSTEMS & RECONFIGURABLE SOCS
Prof. Luis Gomes, Portugal
Prof. Juan J. Rodriguez-Andina, Spain

SS33 INDUSTRIAL APPLICATIONS OF HOLONIC AND MULTI-AGENT SYSTEMS
Alois Zoitl, Austria
Paulo Leitao, Portugal
Munir Merdan, Austria
Pavel Vrba, Czech Republic
Thomas Strasser, Austria

SS34 INDUSTRIAL ELECTRONICS IN SMART GRIDS
Xinghuo Yu, Australia
Marcelo Simoes, USA
Carlo Cecati, Italy
Pierluigi Siano, Italy
Mo El-Hawary, Canada
Thomas Strasser, Austria

SS35 REAL-TIME SIMULATION AND VALIDATION METHODS FOR POWER AND ENERGY SYSTEMS
Thomas Strasser, Austria
Paul Crolla, UK
Omar Faruque, USA
Panos Kotsampopoulos, Greece

SS36 ADVANCED POWER CONVERTERS FOR ENERGY STORAGE SYSTEMS
Sergio Vazquez, Spain
Srdjan Lukic, USA
Leopoldo G. Franquelo
Manuel Reyes, Spain

SS37 BUILDING AND HOME AUTOMATION AND CONTROL
J. Haase, Austria
A. S. Metzger, Austria
J. Ploennig, Germany
G. Zucker, Austria

SS38 HIGH-EFFICIENCY MAGNETLESS ELECTRICAL MOTORS AND GENERATORS FOR VEHICULAR AND RENEWABLE APPLICATIONS
David Dorrell , Australia
Mircea Popescu

SS39 MULTILEVEL CONVERTERS APPLICATIONS, TOPOLOGIES, CONTROL AND MODULATION TECHNIQUES
Leopoldo G. Franquelo
Jose I. Leon, Spain
Samir Kouro, USA
Marcelo Perez, USA

SS40 PREDICTIVE CONTROL FOR POWER CONVERTERS AND DRIVES
Sergio Vazquez, Spain
Patricio Cortes, USA
Leopoldo G. Franquelo
Jose Rodriguez, USA
Carlos Bordons, Spain

SS41 DESIGN AND CONTROL OF HIGH POWER CONVERTERS FOR RENEWABLE ENERGY SYSTEMS
Dr. Hadi Y. Kanaan, Lebanon
Prof. Maurice Fadel, France
Prof. Kamal Al-Haddad, Canada
Prof. Imad Mougharbel, Lebanon

SS42 DIAGNOSTIC OF AC MACHINE BASED COMPLEX ELECTROMECHANICAL SYSTEMS
Humberto Henao, France
Shahin Hedayati Kia, France

SS43 NEW TRENDS IN CONVERTER TOPOLOGIES AND CONTROL METHODS FOR ACTIVE POWER DISTRIBUTION GRIDS
Enrique Romero-Cadaval, Spain
Dmitri Vinnikov, Estonia
Joao Martins, Portugal
Grzegorz Benysek, Poland

SS44 IMPEDANCE SOURCE INVERTERS, ZSIS AND THEIR MODIFIED AND IMPROVED TOPOLOGIES
Dr. Haitham Abu-Rub, Qatar
Dr. Atif Iqbal, Qatar
Prof. Ge Baoming, Qatar
Mr. Abdellah Kouzou, Qatar

SS45 INVERTER-BASED DISTRIBUTED GENERATORS AS MULTIFUNCTION DEVICE
Dr. Vinod Khadkikar, UAE
Prof. Kamal Al-Haddad, Canada

SS46 DESIGN, MODELING, SIMULATION AND PERFORMANCE MEASUREMENT OF LARGE ELECTRICAL MACHINES IN THE INDUSTRY
Dr. Arezki Merkhouf, Canada
Prof. Pargsen Pillay, Canada

SS47 SPECIAL SESSION PROPOSAL COMPLIANT ROBOTICS
Prof. Yasutaka Fujimoto, Japan
Dr. Barkan Ugurlu, Japan
Prof. Naoki Oda, Japan
Prof. Kiyoshi Ohishi, Japan

SS48 AIRCRAFT SYSTEMS MODELING, SIMULATION AND OPTIMIZATION
Ruxandra Mihaela Botez, Canada
Jules O'Shea, Canada
Youmin Zhang, Canada

SS49 GRID FREQUENCY AND VOLTAGE SUPPORT USING POWER GENERATORS BASED ON RENEWABLE ENERGY SOURCES
Prof. Francis A. Okou , Canada
Prof. Ouassima Akhrif, Canada

SS50 CURRENT STATUS OF INTELLIGENT SPACES / CONVERSION OF ROBOTICS, MECHATRONICS, CONTROL AND INTERFACES
Prof. Hideki Hashimoto, Japan
Prof. Peter Korondi, Hungary
Joo Ho Lee, Japan
Kazuyuki Morioka, Japan
Mihoko Niitsuma, Japan
Takeshi Sasaki, Japan
Sousuke Nakamur, Japan

SS51 ADVANCED AND EMERGING TECHNOLOGY FOR HANDICAP AND DISABILITY POPULATION
Prof. Farhat Fnaiech, Tunisa
Prof. Philippe Gorce, France

SS52 AEROSPACE CONTROL
Ouassima Akhrif , Canada
David Saussie, Canada

SS53 MICROGRIDS
Prof. Josep M. Guerrero, Denmark

SS54 EFFICIENT POWER CONVERTERS FOR PHOTOVOLTAIC AND WIND POWER CONVERSION
Prof. Chandan Chakraborty, India
Prof. Mariusz Malinowski, Poland

SS55 TECHNOLOGIES AND ARCHITECTURES FOR FUTURE CLOUD BASED INDUSTRIAL SYSTEMS
Dr. Thomas Bangemann, Germany
Prof. Armando Walter Colombo, Germany
Dr.Stamatis Karnouskos, Germany

SS56 POWER ELECTRONICS INTERFACING OF RENEWABLE ENERGY SOURCES AND ADJUSTABLE SPEED DRIVES — MODELLING RELIABILITY ISSUES AND OPERATION UNDER GRID VOLTAGE FAULTS
Prof. Teresa Orlowska-Kowalska, Poland
Dr Marek Jasinski, Poland
Prof. Frede Blaabjerg, Denmark
Dr Pedro Rodriguez, Spain

SS57 THERMOELECTRIC GENERATORS
Dr. Felix Felgner, Denmark
Dr. Georg Frey, Denmark

SS58 ADVANCED CONTROL AND DEVELOPMENT OF SWITCHED RELUCTANCE MOTOR DRIVES FOR INDUSTRIAL APPLICATIONS
Prof. Babak Fahimi, USA

SS59 ADVANCED CONTROL THEORIES APPLIED TO POWER ELECTRONICS CONVERTERS
Dr. Alireza Bakhshai, Canada

SS60 RFID TECHNOLOGY AND WIRELESS SENSORS
Prof. Teresa Riesgo, Spain
Dr. Jorge Portilla, Spain
Dr. Jin-Shyan Lee, Taiwan
Prof. Antonio Torralba, Spain

SS61 MATRIX CONVERTERS
Jose Rodríguez, Chile
Patrick Wheeler, UK
Johann Kolar, Switzerland
Marco Rivera, Chile

SS62 PETRI NETS FIFTY YEARS AFTER APPLICATIONS AND THEORY FOR INDUSTRY ELECTRONICS
Luis Gomes, Portugal
Paulo Leitão, Portugal

SS63 INFORMATION TECHNOLOGY IN AUTOMATION
Prof. Georg Frey, Germany
Prof. Lucia Lo Bello, Italy
Prof. Birgit Vogel-Heuser,Germany

SS64 INNOVATIONS IN ELECTRICAL MACHINE DESIGN FOR VARIABLE-SPEED AND POWER DRIVES
Prof. David Dorrell, Australia
Prof. Min-Fu Hsieh, Taiwan

SS65 INTEGRATED CIRCUIT DESIGNS FOR WIRELESS COMMUNICATIONS
Prof. Fa Foster Dai, USAP
Prof. J. David Irwin, USA
Dr. Desheng Ma, USA

SS66 FREIGHT TRANSPORT AND LOGISTICS, ISSUES AND CHALLENGES
Dr Hai Dong, Australia
Prof Elizabeth Chang, Australia
Alireza Faed, Australia
Morteza Saberi, Australia

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ICELIE 2012- SPECIAL SESSION ORGANIZERS

SS1: ICT AND LABORATORY WORK

Vahé Nerguizian, (Canada)
Radhi Mhiri, (Canada)

PLENARY 1: Power Electronics Trends- a CPE's Perspective

Thursday, October 25th 2012, 8h45

Room: Hall, Pavilion A

Speaker: Fred C. Lee, Professor, Virginia Tech.,USA

ABSTRACT

This talk is attempted to capture some of the significant development events and trends in power electronics technologies over the past three, from a CPES's perspective. It is evident that new devices and innovative materials will continue make significant en route to power electronics technologies and applications. Other drivers are equally important in shaping the future power electronics systems, such as:

- Increasing electronic load demands for tighter regulations and dynamic responses;
- Increasing move from customized design to more standardized design;
- System architecture is moving from centralized to distributed;
- Circuit design is moving from discrete approach to integrated approach;
- Increasing demand for energy efficiency, higher power density, lower cost and short cycle time.

The current design practices needs to be revisited to address these seemingly conflicting constraints. A paradigm shift in power electronics systems and design practice is eminent.



Fred C. Lee received his B.S. degree in electrical engineering from the National Cheng Kung University in Taiwan in 1968 and M.S. and Ph.D. degrees in lectrical engineering from Duke University in 1972 and 1974, respectively. Dr. Lee is a University Distinguished Professor at Virginia and the Founder and Director of the Center for Power Electronics Systems (CPES), an engineering research center consisting of over 87 corporations. The Center's vision is "to provide leadership through global collaboration to create electric power processing systems of the highest value to society". Dr. Lee holds 69 U.S. patents, and has published 240 journal articles and over 590 refereed technical papers. During his tenure at Virginia Tech, Dr. Lee has supervised to completion 71 PhD and 80 Master students. He served as President of the IEEE Power Electronics Society (1993-94) and is a recipient of William E. Newell Power Electronics Award in 1989, the Arthur E. Fury Award for Leadership and Innovation in1998, the Ernst-Blickle Award for achievement in the field of power electronics in 2005, and the Distinguished Alumni Award from National Cheng Kung University in 2006. Dr. Lee was Honorary Li Kwoh-Ting Chair Professor, National Cheng Kung University in 2011, honorary Sun Yuen Chuan Chair Professor, National Tsing Hua University, Taiwan in 2001, and is Honorary Professor at Zhejiang University (1990-), Shanghai Railroad Technology Institute (1991-), Shanghai University (1991-), Nanjing Aeronautical and astronautic University (1993-), Tsinghua University (1997-), Huazhong University of Science and Technology (2000-), Harbin Institute of Technology (2002-), Beijing Jiao-Tong University (2004-), Shanghai Jiaotong University (2004-), Hefei Industry Technology University (2009-)

Dr. Lee is a member of the National Academy of Engineering (2011) and has served as President of the IEEE Power Electronics Society (1993-94). He has served as a member of the Board of Directors for Zytec (1987-1997), Artesyn (1997-2004) and Virginia Tech Intellectual Properties (2007-2009), and Chairman of the Board for VPT (1993-2009). He currently serves on the Board of Directors for Delta Power Electronics and the Delta Environment and Education Foundation

PLENARY 2: Power Design for Reliability of Power Electronic Systems

Thursday, October 25th 2012, 9h25

Room: Hall, Pavilion A

Speaker: Frede Blaabjerg, Professor, Aalborg University, Denmark

ABSTRACT

Advances in power electronics enable efficient and flexible processing of electric power in the application of renewable energy sources, electric vehicles, adjustable-speed drives, etc. More and more efforts are devoted to having better power electronic systems in terms of reliability to ensure high availability, long lifetime, sufficient robustness and low maintenance cost. However, the reliability predictions are still dominantly according to outdated models and terms, such as MIL-HDBK-217H handbook models, mean-time-to-failure (MTTF), and mean-time-between-failures (MTBF). In this presentation, a collection of methodologies based on physics-of-failure (PoF) approach and mission profile analysis are presented to perform reliability-oriented design of power electronic systems. The corresponding design procedures and reliability prediction models are provided. Further on, a case study on 10 MW wind power converters is discussed with emphasis on the reliability critical components IGBTs and DC-link capacitors. Different aspects of improving the reliability of the power converters are mapped. Finally, the challenges and opportunities to achieve more reliable power electronic systems are addressed.



Professor Blaabjerg was employed at ABB-Scandia, Randers, from 1987-1988. During 1988-1992 he was a PhD. student at Aalborg University, Denmark, became Assistant Professor in 1992, Associate Professor in 1996 and full professor in power electronics and drives in 1998 the same place. He has been part-time research programme leader at Research Center Risoe in wind turbines. In the period of 2006-2010 he was the dean of the faculty of Engineering, Science and Medicine the same place and became visiting professor at Zhejiang University, China in 2009.

His research areas are in power electronics and its applications like wind turbines, PV systems and adjustable speed drives. Since 2006 he has been Editor in Chief of the IEEE Transactions on Power Electronics as well as he was Distingueshed lecturer for the IEEE Power Electronics Society from 2005 to 2007. It is followed up as Distingueshed lecturer for the IEEE Industry Applications Society from 2010 to 2011.

He received the 1995 Angelos Award for his contribution in modulation technique and the Annual Teacher prize at Aalborg University, also 1995. In 1998 he received the Outstanding Young Power Electronics Engineer Award from the IEEE Power Electronics Society.

He has received twelve IEEE Prize paper awards and another prize paper award at PELINCEC Poland 2005. He received the IEEE Power Electronics Society Distingueshed Service Award in 2009 as well as the EPE-PEMC 2010 Council award.

IECON 2012 Luncheon Plenaries

LUNCHEON PLENARY 1:
Bombardier Aerospace: Charting the Course of Aviation Technology

Thursday, October 25th 2012, 13h20

Room: Hall, Pavilion A

Speaker: Fassi Kafyeke, Eng. PhD Director Strategic Technology Senior Engineering Advisor Bombardier Aerospace



ABSTRACT

Bombardier Aerospace is developing the Learjet 85 Mid-size Business Jet, the Global 7000 and 8000 Super-Large Business Jets and the CSeries 110 to 130-pax commercial Jetliners. These projects require investment and focus in technology development, aircraft design and product development.

The presentation will discuss some of the advanced systems technologies developed by Bombardier that will make these airplanes and others pillars of 21st century aviation: fly-by-wire, advanced navigation systems, electric systems, modular avionics and highly integrated systems.

LUNCHEON PLENARY 2:
Montreal Transit Society electrification projects, technological challenges, and future development

Friday, October 26th 2012, 13h20

Room: Hall, Pavilion A

Speaker: Mr. François Chamberland, Eng. Executive Director Montreal Transit Society (STM)



ABSTRACT

Quebec government has set a goal that 95% of public transport in Montreal must use non polluted energy sources, the Montreal Transit Society, who has already more than 50% of its vehicles using electricity, has an ambitious plan to electrify its surface network. This plan includes several projects and of course, several technological challenges. The presentation will cover mass transit system engineering challenges, pollution free smart urban technological planning and implementation.

LUNCHEON PLENARY 3:
Hydro-Québec SmartGrid Innovation Program

Saturday, October 27th 2012, 13h20

Room: Hall, Pavilion A

Speaker: Jean Lessard, Eng. Director, Technology Innovation Hydro-Quebec Research Institute



ABSTRACT

The presentation will focus on the business needs and the strategic orientation of Hydro Québec supporting the modernisation and the evolution of the electrical network to become a more intelligent one. Technology vision as well as main targets of Hydro Québec technological innovation program will be presented. Concrete examples of innovation projects that are carried out jointly with the business divisions of Hydro-Québec and it's research partners will also be presented and discussed.

Thursday 25th of October

Registration Desk
Pavilion A, Cafeteria, Thursday 25th of October, 07h30

Opening Ceremony
Pavilion A, Main Hall, Thursday 25th of October, 08h30

Plenary 1 - Power Electronics Trends – a CPES's perspective
Pavilion A, Main Hall, Thursday 25th of October, 08h40

Plenary Speaker: Fred C. Lee, Virginia tech, USA

Presenter: Kamal Al-Haddad, Canada

Plenary 2 - Design for Reliability of Power Electronic Systems
Pavilion A, Main Hall, Thursday 25th of October, 09h20

Plenary Speaker: Frede Blaabjerg, Aalborg University, Denmark

Presenter: Bogdan M. Wilamowski, USA

PO A - Poster and Dialogue Session
Pavilion A, Main Hall, Thursday 25th of October, 10h00

Chair/s: Andres Nogueiras, Spain, Bachir Kedjar, Canada

P01 IR Sensor for Temperature Measurement in Domestic Induction Heating Systems

Mr. Eduardo Imaz, Universidad de Zaragoza, Spain
Dr. Rafael Alonso, Universidad de Zaragoza, Spain
Dr. Carlos Heras, Universidad de Zaragoza, Spain
Mr. Enrique Carretero, Universidad de Zaragoza, Spain
Dr. Iñigo Salinas, Universidad de Zaragoza, Spain

P02 High-efficiency power converters for domestic induction heating applications

Mr. Hector Sarnago, University of Zaragoza, Spain
Prof. ÓScar Lucia, University of Zaragoza, Spain
Prof. Arturo Mediano, University of Zaragoza, Spain
Prof. Jose Miguel Burdio, University of Zaragoza, Spain

P03 Flexible Cooking Zone with 2D Mobile Inductors in Induction Hobs

Mr. Fernando Sanz, Universidad de Zaragoza, Spain
Mr. Carlos Franco, Universidad de Zaragoza, Spain
Dr. Carlos Sagues, Universidad de Zaragoza, Spain
Dr. David Paesa, BSH Electrodomesticos España S.A., Spain
Mr. Sergio Llorente, BSH Electrodomesticos España S.A., Spain

P04 Generic Thermal Model of Electric Appliances Integrated in Low Energy Building

Ms. Herie Park, University of Cergy-Pontoise, France
Prof. Marie Ruellan, University of Cergy-Pontoise, France
Dr. Nadia Martaj, ENS de Cachan, France
Prof. Rachid Bennacer, ENS de Cachan, France
Prof. Eric Monmasson, University of Cergy-Pontoise, France

P05 Methodology and Experimental Set-up for DSP-Based Sensorless PWM Speed Estimation of Induction Machine

Prof. Mamadou Lamine Doumbia, University of Quebec, Canada
Mr. Abdelrahaman Yousif Eshag Lesan, University of Quebec, Canada

P06 Inductance-Based Position Self-Sensing of a Brushless DC-Machine Using High-Frequency Signal Injection

Mr. Fabien Gabriel, Royal Military Academy, Belgium
Dr. Frederik De Belie, Ghent University, Belgium
Prof. Xavier Neyt, Royal Military Academy, Belgium

P07 A Comparative Study Of Various Mras-Based Im`S Rotor Resistance Adaptation Method

Prof. M. Reza Dehbozorgi, Shiraz Azad University-Ecole de Technologie Superieure, Iran
Prof. Hossein Madadi kojabadi, Sahand University, Iran
Mr. Hani Vahedi, Ecole de Technologie Superieure, Canada
Prof. Kamal Al-Haddad, Ecole de Technologie Superieure, Canada

P08 Modeling and Control of an Electronic Ballast Based on Differential Connection of Flyback Converters

Mr. Jacson Hansen, Group of Intelligence in Lighting - Federal University of Santa Maria, Brazil
Mr. Diogo R. Vargas, Group of Intelligence in Lighting - Federal University of Santa Maria, Brazil
Mr. André Luis Kirsten, Group of Intelligence in Lighting - Federal University of Santa Maria, Brazil
Prof. Marco A. Dalla Costa, Group of Intelligence in Lighting - Federal University of Santa Maria, Brazil
Prof. Alexandre Campos, Group of Intelligence in Lighting - Federal University of Santa Maria, Brazil
Prof. Tiago B. Marchesan, Group of Intelligence in Lighting - Federal University of Santa Maria, Brazil
Prof. Ricardo N. do Prado, Group of Intelligence in Lighting - Federal University of Santa Maria, Brazil

P09 LED Driver with Bidirectional Series Converter for LF Ripple Cancelation

Prof. Jorge Garcia, ce3i2, DIEECS, University of Oviedo, Spain
Mr. Douglas Camponogara, GEDRE, Universidade Federal de Santa Maria, Brazil
Prof. Marco A. Dalla-Costa, GEDRE, Universidade Federal de Santa Maria, Brazil
Mr. David Gacio, ce3i2, DIEECS, University of Oviedo, Spain
Prof. J. Marcos Alonso, ce3i2, DIEECS, University of Oviedo, Spain
Prof. Alexandre Campos, GEDRE, Universidade Federal de Santa Maria, Brazil

P10 Misfire Fault Detection In SI Engine Using Sliding Mode Observer

Dr. M A Rizvi, Mohammad Ali Jinnah University, Islamabad, Pakistan
Dr. Syed Sajjad Zaidi, National University of Sciences and Technology, Islamabad, Pakistan
Mr. Muhammad Amin Akram, Mohammad Ali Jinnah University, Islamabad, Pakistan
Dr. Aamer I Bhatti, Mohammad Ali Jinnah University, Islamabad, Pakistan

P11 Indirect Field-Oriented Control of an Induction Motor Fed by a Bidirectional Quasi-Z-Source Inverter

Dr. Omar Ellabban, Helwan University, Egypt
Dr. Haitham Abu-Rub, Texas A&M University at Qatar, Qatar

P12 Output Short Circuit Spark Discharging Modeling of Quasi-Z-Source Buck Converter

Dr. Cheng Hong, China University of Mining & Technology(Beijing), China
Prof. Wang Cong, China University of Mining & Technology(Beijing), China

P13 Optimal energy conversion through performing compressed air systems

Dr. Norma Anglani, University of Pavia, Italy
Mrs. Giusi Quartarone, University of Pavia, Italy
Mr. Michele Bossi, University of Pavia, Italy

P14 Investigation of the Electromagnetic Simulation Results Variation of a Hydro Electrical Generator

Mrs. Ana Aguiar, Ets, Canada
Dr. Arezki Merkhouf, Ireq, Canada
Dr. Claude Hudon, Ireq, Canada
Prof. Kamal Al-Haddad, Ets, Canada

P15 Application of Robotic Indices to Evaluate Human Upper-limb Force Capacities

Dr. Nasser Rezzoug, HandiBio EA 4322, France
Dr. Julien Jacquier-Bret, HandiBio EA 4322, France
Mr. Vincent Hernandez, HandiBio EA 4322, France
Prof. Philippe Gorce, HandiBio EA 4322, France

P16 Dimensional Optimization of Thermoelectric Modules for Solar Power Generation

Mr. Takeyuki Fujisaka, Hokkaido University, Japan
Prof. Ryosuke Suzuki, Hokkaido University, Japan

P17 Power generation using the fluids blown perpendicular to the TE panel

Prof. Ryosuke O. Suzuki, Hokkaido Univ, Japan
Mr. Yuto Sasaki, Hokkaido Univ, Japan
Mr. Takeyuki Fujisaka, Hokkaido Univ, Japan
Dr. Min Chen, Hokkaido Univ, Japan

P18 Reducing the sampling frequency for the control of the switched reluctance machine

Mr. Xavier Rain, Lgep, France
Dr. Mickaël Hilairet, Lgep, France
Dr. Antoni Arias, Universitat Politecnica de Catalunya, Spain

P19 Study for Using Electric Vehicles as Energy Supply within the Electric Grid

Mr. Philip Dost, Ruhr-University Bochum, Germany
Prof. Constantinos Sourkounis, Ruhr-University Bochum, Germany

P20 Dynamic Modeling and Simulation of a High Speed Circumferential-Flux Hysteresis Motor

Mr. Mohammad Zare, University of Kashan, Iran
Dr. Abolfazl Halvaei Niasar, University of Kashan, Iran
Dr. Hassan Moghbelli, Texas A&M University, USA

P21 Compensation of Transient Error in Sensorless Alternating Carrier Injection Scheme

Mr. Mohammad Ali Ghazi Moghadam, Sharif University of Technology, Iran
Dr. Farzad Tahami, Sharif University of Technology, Iran

P22 Dynamic Modeling and Simulation of Brushless Doubly Fed Induction Machine in Consideration of Core Loss

Mr. MohammadNaser Hashemnia, Sharif University of Technology, Iran
Dr. Farzad Tahami, Sharif University of Technology, Iran

P23 Using a Weighting Factor Table for FCS-MPC of Induction Motors with Extended Prediction Horizon

Dr. Alireza Davari, Iran University of Science and Technology, Iran
Prof. Davood Arab Khaburi, Iran University of Science and Technology, Iran
Prof. Ralph Kennel, Technical University of Munich, Germany

P24 Real Time Implementation of Robust Controller for PMSM Drive System Using H∞ Norm.

Prof. Said Hassaine, University of Tiaret, Algeria
Prof. Sandrine Moreau, University of Poitiers, France
Dr. Sofiane Gherbi, University of Skikda, Algeria
Dr. Moussa Sedraoui, University of Skikda, Algeria
Prof. Benyounès Mazari, University of Oran, Algeria

P25 Rapid Prototyping of a Multivariable Control with Pole Placement by State Feedback of a PMSM: LMI Approach

Prof. Said Hassaine, Université de Tiaret, Algeria
Dr. Bilal Sari, Université de Nantes, France
Prof. Sandrine Moreau, University of Poitiers, France
Prof. Benyounès Mazari, University of Oran, Algeria

P26 High-Speed Grid Connected Induction Generator Supported by Magnetic Bearings

Dr. Fábio Lima, University Center of FEI, Brazil
Mr. Fabiano Camargo Rosa, Muteki Automação LTDA, Brazil
Dr. Marco Antonio Fumagalli, Muteki Automação LTDA, Brazil

P27 Analysis of Transient Processes of Buck-Boost Converter: theoretical analysis, physical experiments, modeling and simulation.

Mr. Arthur Shoihet, The Department of Electrical and Computer Engineering of Ben Gurion University of Negev, Beer Sheva, Israel
Prof. Michael Slonim, The Department of Electrical and Computer Engineering of Ben Gurion University of Negev, Beer Sheva, Israel

P28 A Novel MPPT Control Design for Wind-Turbine Generation Systems Using Neural Network Compensator

Prof. Ming-Fa Tsai, Minghsin University of Science and Technology, Taiwan
Prof. Chung-Shi Tseng, Minghsin University of Science and Technology, Taiwan
Mr. Yu-Hsiang Hung, Minghsin University of Science and Technology, Taiwan

P29 Model Reference Adaptive Control Design for the Buck-Boost Converter

Prof. Yen-Fang Li, Ming Hsin University of Science and Technology, Taiwan
Prof. Ming-Fa Tsai, Ming Hsin University of Science and Technology, Taiwan
Prof. Chung-Shi Tseng, Ming Hsin University of Science and Technology, Taiwan
Mr. Yi-Fan Chiang, Ming Hsin University of Science and Technology, Taiwan

P30 Adaptive Control Design for the Buck-Boost Converter with Desired Pole/Zero Assignment

Prof. Ming-Fa Tsai, Minghsin University of Science and Technology, Taiwan
Prof. Chung-Shi Tseng, Minghsin University of Science and Technology, Taiwan
Mr. Zen-Chen Zhou, Minghsin University of Science and Technology, Taiwan

P31 Terminal Sliding Mode Control Strategy Design for Second-order Nonlinear System

Dr. Jeng-Dao Lee, Department of Automation Engineering, National Formosa University, Taiwan
Dr. Suiyang Khoo, School of Engineering, Deakin University, Australia
Mr. Kwei-Yuan Lai, Department of Automation Engineering, National Formosa University, Taiwan

TT07 a - Single-phase power factor correction
A-1170, Thursday 25th of October, 10h30

Chair/s: J. W. Kolar, Sanjib K. Panda

A High Power and Multi-Outputs of AC-DC Power Supply Design to Meet 80 Plus Gold and ErP Requirements

Dr. Liang Shih-An, Taiwan
Mr. Huang Ching Wen, Taiwan
Mr. Lu Po Chang, Taiwan

Reduction of DC-bus Voltage Ripples and Capacitors for Single-phase PWM-controlled Rectifiers

Prof. Qing-Chang Zhong, The University of Sheffield, United Kingdom
Mr. Wen-Long Ming, The University of Sheffield, United Kingdom
Dr. Xin Cao, Nanjing University of Aeronautics and Astronautics, China
Prof. Miroslav Krstic, University of California at San Diego, United States

Stability Analysis of Half-Bridge Rectifier Employing LTP Approach

Mr. Rafael Zanatta Scapini, Federal University of Santa Maria, Brazil
Mr. Lucas Vizzotto Bellinaso, Federal University of Santa Maria, Brazil
Dr. Leandro Michels, Federal University of Santa Maria, Brazil

A Modified Single-Phase H-Bridge PWM Rectifier with Power Decoupling

Mr. Hui Zhao, State Key Laboratory of Advanced Electromagnetic Engineering and Technology, China
Dr. Hongbo Li, State Key Laboratory of Advanced Electromagnetic Engineering and Technology, China
Mr. Chen Min, State Key Laboratory of Advanced Electromagnetic Engineering and Technology, China
Prof. Kai Zhang, State Key Laboratory of Advanced Electromagnetic Engineering and Technology, China

Optimal Design of EMC Filters for Single-Phase Boost PFC Circuits

Mr. Jonas Muehlethaler, ETH Zurich, Switzerland
Dr. Hirofumi Uemura, ETH Zurich, Switzerland
Prof. Johann W. Kolar, ETH Zurich, Switzerland

Single-Stage High Power Factor Converter Without Eletrolytic Capacitors To Drive Power Leds

Prof. Zito Fonseca, Utfpr, Brazil
Mr. Marcelo Pedroso, Utfpr, Brazil
Dr. Arnaldo Perín, Ufsc, Brazil
Dr. Mauricio Kaster, Utfpr, Brazil
Dr. Claudinor Nascimento, Utfpr, Brazil

TT07 b - Digital Control of Power Electronics I
A-1300, Thursday 25th of October, 10h30

Chair/s: Stefan Soter, Kishore Chatterjee

Real Time Implementation of Power Theory using FLC based Shunt Active Filter with Different Fuzzy M.F.s

Dr. Suresh Mikkili, N.I.T Rourkela, India
Prof. Anup Kumar Panda, N.I.T Rourkela, India

Power Quality Improvement in Three-Phase Four-Wire System using a Shunt APF with Predictive Current Control

Mr. Abdullah Fahmy, Arab Academy For Science, Technology And Maritime Transport (Aastmt), Egypt
Dr. Mostafa Hamad, Arab Academy For Science, Technology And Maritime Transport (Aastmt), Egypt
Dr. Ahmed Kadry Abdelsalam, Arab Academy For Science, Technology And Maritime Transport (Aastmt), Egypt
Prof. Ahmed Lotfy, Arab Academy For Science, Technology And Maritime Transport (Aastmt), Egypt

Design and Implementation of Compound Current Control Strategy for Improved LCL-based Shunt Active Power Filter

Mr. Xiaojian Zhong, Zhejiang University, China
Mr. Lei Hong, Zhejiang University, China
Mrs. Xiao Chen, Zhejiang University, China
Prof. Guozhu Chen, Zhejiang University, China

A Robust Control Strategy for Regulating DC-Link Voltage of Active Power Filter without Load Current Measurements.

Dr. Ricardo Ribeiro, Dee-Ufrn, Brazil
Mr. Jailton Moreira, Ifpb, Brazil
Mr. Raphaell Souza, Ifpb, Brazil
Dr. Christian Azevedo, Datinf-Ifrn, Brazil

One Cycle Controlled Active Harmonic Filter

Mr. Sreeraj E.S., Department of Electrical Engineering, Indian Institute of Technology Bombay, India
Mr. Prejith E.K., Solar Semiconductors Private Limited, Hyderabad, India
Prof. Kishore Chatterjee, Department of Electrical Engineering, Indian Institute of Technology Bombay, India

TT09 a - PMSG for Wind Turbines
A-1302, Thursday 25th of October, 10h30

Chair/s: Adel Nasiri, Ambrish Chandra

Isolated Wind Energy Conversion System for Three-Phase Four Wire Loads Employing Adaline based Voltage-Frequency Controller

Mrs. V Sheeja, GCE Kannur, Kerala, India
Dr. P Jayaprakash, IIT Delhi, India
Prof. B Singh, IIT Delhi, India
Dr. R Uma, IIT Delhi, India

Micro Wind Turbine system Integration Guidelines PMSG and Inverter Front End Choices

Dr. Claudio Bianchini, University of Modena and Reggio E., Italy
Dr. Fabio Immovilli, University of Modena and Reggio E., Italy
Dr. Emilio Lorenzani, University of Modena and Reggio E., Italy
Dr. Giampaolo Buticchi, University of Parma, Italy
Dr. Alberto Bellini, University of Modena and Reggio E., Italy

An Indirect Control Technique for a Three Phase 3 Wire Inverter Interfacing Grid Connect PMSG Based Wind Turbine Implemented with a New Maximum Power Point Tracking

Prof. Salem Rahmani, ETS Montreal, Canada
Dr. Abdelhamid Hamadi, ETS Montreal, Canada
Dr. August Ndtoungou, ETS Montreal, Canada
Prof. Kamal Al-Haddad, ETS Montreal, Canada
Prof. Hadi Kanaan, Saint-Joseph University, Lebanon

Multi-Variable Control of Generator System for Variable Speed Wind Energy Converters

Prof. Constantinos Sourkounis, Ruhr-Universität Bochum, Germany

Optimization of a Stand-alone PMSG Wind Generation System

Dr. Tahar Tafticht, University of Quebec at Trois-Rivieres, Canada
Prof. Ahmed Chériti, University of Quebec at Trois-Rivieres, Canada

SS61 a - Matrix Converters II
A-1340, Thursday 25th of October, 10h30

Chair/s: Liliana de Lillo, Lee Empringham

Fault Location In Matrix Converters Using Low Frequency Modulation Matrices For Svm Based Modulation Techniques

Mr. Christopher Brunson, University of Nottingham, United Kingdom
Dr. Liliana De Lillo, University of Nottingham, United Kingdom
Dr. Lee Empringham, University of Nottingham, United Kingdom
Prof. Pat Wheeler, University of Nottingham, United Kingdom
Prof. Jon Clare, University of Nottingham, United Kingdom

Improved Two-Steps Voltage-Commutation Strategy under Non-1 Input Power Factor in Matrix Converter

Dr. Wei Cai, Naval University of Engineering, China
Dr. Bi He, China State Shipbuilding Corporation 704 Institute, China
Prof. Mingzhong Qiao, Naval University of Engineering, China
Prof. Xiaofeng Zhang, Naval University of Engineering, China

Space Vector Modulation for Single-Input Dual-Output Indirect Matrix Converter

Mr. Tuyen D. Nguyen, University of Ulsan, Korea (South)
Prof. Hong-Hee Lee, University of Ulsan, Korea (South)

Matrix Converter with a Series Z-Source

Mr. Ekrem Karaman, University of Nevada Reno, USA
Mr. Mehdi Farasat, University of Nevada Reno, USA
Prof. Andrzej M. Trzynadlowski, University of Nevada Reno, USA

Efficiency Analysis for RB-IGBT based Matrix Converters

Mr. Thomas Schulte, University of Siegen, Germany
Prof. Günter Schröder, University of Siegen, Germany

Novel Topologies for Three-Level Back-to-Back Converters Based on Matrix Converter Theory

Mr. Korawich Niyomsatian, Chulalongkorn, Thailand
Mr. Surachet Samermurn, Chulalongkorn, Thailand
Dr. Surapong Suwankawin, Chulalongkorn, Thailand
Dr. Somboon Sangwongwanich, Chulalongkorn, Thailand

SS35 - Real-time Simulation and Validation Methods for Power and Energy Systems
A-1350, Thursday 25th of October, 10h30

Chair/s: Panos Kotsampopoulos, Thomas Strasser

Implementation of a Multi-Rating Interface for Power-Hardware-in-the-Loop Simulations

Mr. Felix Lehfuss, Ait, Austria
Mr. Georg Lauss, Ait, Austria
Mr. Thomas Strasser, Ait, Austria

Design, development and operation of a PHIL environment for Distributed Energy Resources

Mr. Panos Kotsampopoulos, National Technical University of Athens, Greece
Mr. Vasilis Kleftakis, National Technical University of Athens, Greece
Mr. George Messinis, National Technical University of Athens, Greece
Mr. Nikos Hatziargyriou, National Technical University of Athens, Greece

Over-Current Relay Model Implementation for Real Time Simulation & Hardware-In-the-Loop (HIL) Validation

Mr. Muhammad Shoaib Almas, KTH Royal Institute of Technology, Sweden
Mr. Rujiroj Leelaruji, KTH Royal Institute of Technology, Sweden
Mr. Luigi Vanfretti, KTH Royal Institute of Technology, Sweden

Application of Power Hardware-in-the-Loop for Electric Vehicle Propulsion Evaluation: A Case Study Utilizing Switched Reluctance Machines

Dr. Chris S. Edrington, Florida State University, USA
Mr. Troy Bevis, Florida State University, USA
Mr. Jesse P. Leonard, Florida State University, USA
Dr. Amin Hasanzadeh, Florida State University, USA

Power Hardware-in-the-Loop Testing of a 500 kW Photovoltaic Array Inverter

Mr. James Langston, Florida State University Center for Advanced Power Systems, USA
Dr. Karl Schoder, Florida State University Center for Advanced Power Systems, USA
Dr. Michael Steurer, Florida State University Center for Advanced Power Systems, USA
Dr. Omar Faruque, Florida State University Center for Advanced Power Systems, USA
Mr. John Hauer, Florida State University Center for Advanced Power Systems, USA
Mr. Ferenc Bogdan, Florida State University Center for Advanced Power Systems, USA
Mr. Richard Bravo, Southern California Edison, USA
Dr. Barry Mather, National Renewable Energy Laboratory, USA
Dr. Farid Katiraei, Quanta Technology, Canada

Examination of LV grid phenomena by means of PHIL testing

Mr. Georg Lauss, AIT Austrian Institute of Technology, Austria
Mr. Felix Lehfuss, AIT Austrian Institute of Technology, Austria
Mr. Benoit Bletterie, AIT Austrian Institute of Technology, Austria
Dr. Thomas Strasser, AIT Austrian Institute of Technology, Austria
Mr. Roland Bruendlinger, AIT Austrian Institute of Technology, Austria

TT08 a - Power Systems
A-1752, Thursday 25th of October, 10h30

Chair/s: Ambrish Chandra, Kishore Chatterjee

Study of a novel STATCOM Based on Modular Multilevel Inverter

Mr. Jingsong Zhu, Nanjing University of Science & Technology, China
Prof. Lei Li, Nanjing University of Science & Technology, China
Mrs. Min Pan, Nanjing University of Science & Technology, China

Smart Impedance: Expanding the Hybrid Active Series Power Filter Concept

Prof. Carlos Henrique Silva, Unifei, Brazil
Prof. Rondineli Pereira Rodrigues, Cefet, Brazil
Prof. Luiz Eduardo Borges da Silva, Unifei, Brazil
Prof. Germano Lambert-Torres, Unifei, Brazil
Mr. Robson Bauwelz Gonzatti, Unifei, Brazil
Ms. Silvia Costa Ferreira, Unifei, Brazil
Mr. Luiz Gonzaga Fernandez Silva, Cpfl, Brazil

Current Reference Generator for Single Phase Shunt Active Power Filters

Mr. Jakub Talla, University of West Bohemia,Regional Innovation Centre for Electrical Engineering, Czech Republic
Prof. Zdenek Peroutka, University of West Bohemia,Regional Innovation Centre for Electrical Engineering, Czech Republic
Prof. Seppo J. Ovaska, Aalto University,Department of Electrical Engineering, Finland
Dr. Vojtech Blahnik, University of West Bohemia,Regional Innovation Centre for Electrical Engineering, Czech Republic

Development of 2.5 MVAR STATCOM for Arc Furnace Applications

Mr. Siriki Eswara Rao, Bhel, India
Dr. Bishnu Prasad Muni, Bhel, India
Mr. Prashant Jain, Bhel, India
Mr. C P Vamsi Krishna Reddy, Bhel, India
Dr. Balasubramanyam Pv, Cpri, India

Reactive Compensation Investigation of TSC Systems based on Different Power Factor Definitions

Mr. Seyyedmilad Ebrahimi, Sharif University of Technology, Iran
Mr. Vahid Najmi, Sharif University of Technology, Iran
Prof. Hossein Mokhtari, Sharif University of Technology, Iran

Current-Source Shunt Active Power Filter with Periodic-Sampling Modulation Technique

Mr. Bruno Exposto, Universidade do Minho, Portugal
Dr. Gabriel Pinto, Universidade do Minho, Portugal
Mr. Delfim Pedrosa, Universidade do Minho, Portugal
Mr. Vitor Monteiro, Universidade do Minho, Portugal
Dr. Henrique Gonçalves, Universidade do Minho, Portugal
Dr. João Afonso, Universidade do Minho, Portugal

IF 1 - Industry Forum - FPGA Technologies
A-1600, Thursday 25th of October, 10h30

Chair/s: Michael Condry, Richard Grisel

FPGAs are playing multiple roles in industry applications. This session discusses directions, tools and applications of FPGAs in industry uses. This will proceeded by a hands-on tutorial on FPGA-based VHDL design and embedded systems by Richard Grisel on the tutorial day.

Using FPGA-based Simulator to Design and Test Power Eectronic Controls used in Automotive, Industrial Systems, Aircrafts, Micro-grid and MMC HVDC

Vincent Lapointe, Electric Simulation Team Leader, Opal-RT

The Role of 3rd-Party System-Level IP in the design of FPGA-based Custom Motor Drives

Marc Perron, Alizem inc.

Building the Bridge between Academia and Industry for FPGA Directions

Rachid Beguenane, Royal Military College of Canada

FPGA Evolutions

Deshanand Singh, Altera Toronto Technology Center

TT03 a - Sensorless Control
B-0904, Thursday 25th of October, 10h30

Chair/s: Thomas Wolbank, Giuseppe Buja

A Robust Nonlinear Luenberger Observer for the Sensorless Control of SM-PMSM: Rotor Position and Magnets Flux Estimation

Mr. Nicolas Henwood, IFP New Energy, France
Dr. Jérémy Malaizé, IFP New Energy, France
Prof. Laurent Praly, MINES ParisTech, France

Modified Direct Thrust Control of Linear Permanent Magnet Motor with Sensorless Speed Estimation

Mr. Muhammad Ali Masood Cheema, The University of New South Wales, Australia
Dr. John Edward Fletcher, The University of New South Wales, Australia
Dr. M. Faz Rahman, The University of New South Wales, Australia
Dr. Dan Xiao, The University of New South Wales, Australia

Experimental Sensorless Vector Control Performance of a DFIG Based on a Extended Kalman Filter.

Mr. Ricardo Pérez, Departamento de Electrónica, Universidad Técnica Federico Santa María, Chile
Dr. César Silva, Departamento de Electrónica, Universidad Técnica Federico Santa María, Chile
Dr. Juan Yuz, Departamento de Electrónica, Universidad Técnica Federico Santa María, Chile
Mr. Gonzalo Carrasco, Departamento de Electrónica, Universidad Técnica Federico Santa María, Chile

Sensorless Induction Motor Control with Improved Stator Flux Estimator by Programmable LPF

Mr. Sang-Soo Lee, Hanyang university, Korea (South)
Mr. Jae-Hoon Kim, Hanyang university, Korea (South)
Dr. Byoung-Gun Park, Korea Electrotechnology Research Institute, Korea (South)
Prof. Dong-Seok Hyun, Hanyang university, Korea (South)

Sensorless Indirect Vector Control of an Induction Machine with a Scott-T Connection in the Stator

Mr. Horacio Polli, Whirlpool Corporation, Brazil
Prof. Ademir Nied, Santa Catarina State University, Brazil
Mr. Fabio Rosa, Whirlpool Corporation, Brazil
Mr. Luiz Stival, Whirlpool Corporation, Brazil
Prof. Jose Oliveira, Santa Catarina State University, Brazil

Sensorless Rotor Temperature Estimation of Permanent Magnet Synchronous Motor under Load Conditions

Mr. Martin Ganchev, Austrian Institute of Technology, Austria
Dr. Christian Kral, Austrian Institute of Technology, Austria
Prof. Thomas Wolbank, Vienna University of Technology, Austria

TT02 a - Electric and Plug-In Hybrid Electric Vehicles
B-0906, Thursday 25th of October, 10h30

Chair/s: Gerry Moschopoulos, Afshin Izadian

A Tool of Vehicle-to-Grid (V2G) Concept for Voltage Plan Control of Residential Electric Grid Areas with Plug-in Hybrid Electric Vehicles (PHEVs)

Dr. Harun Turker, G2elab, France
Dr. Matthieu Hauck, G2elab, France
Dr. Ahmad Hably, Gipsa Lab, France
Prof. Seddik Bacha, G2elab, France

Dynamic Programming for Optimal Integration of Plug-in Hybrid Electric Vehicles (PHEVs) in Residential Electric Grid Areas

Dr. Harun Turker, G2elab, France
Dr. Ahmad Hably, Gipsa Lab, France
Prof. Seddik Bacha, G2elab, France

Comparison of Quick Charge Technologies for Electric Vehicle Introduction in Netherlands

Mr. Jayakrishnan Harikumaran, Delft University of Technology, Netherlands
Mr. György Vereczki, Budapest University of Technology and Economics, Hungary
Mr. Csaba Farkas, Budapest University of Technology and Economics, Hungary
Prof. Pavol Bauer, Delft University of Technology, Netherlands

The Impact Of Electric Vehicles On The Grid For Local Energy Models

Dr. Norma Anglani, University of Pavia, Italy
Mr. Fabrizio Fattori, University of Pavia, Italy
Dr. Giuseppe Muliere, Provincial Administration of Pavia, Italy

Co-Simulation of PEV Coordination Schemes over a FiWi Smart Grid Communications Infrastructure

Mr. Martin Lévesque, Inrs, Canada
Mr. Da Qian Xu, McGill University, Canada
Prof. Geza Joos, McGill University, Canada
Prof. Martin Maier, Inrs, Canada

SS09 - PM Motor Sensorless Drives
B-0908, Thursday 25th of October, 10h30

Chair/s: Tian-Hua Liu, Yen-Shin Lai

An IPMSM Position Control System Using High Frequency Injection Sensorless Technique

Mr. Jui-Ling Chen, National Taiwan University of Science and Technology, Taiwan
Prof. Tian-Hua Liu, National Taiwan University of Science and Technology, Taiwan

Predictive Controller design for a sensorless IPMSM Speed Control System

Mr. Jui-Ling Chen, National Taiwan University of Science and Technology, Taiwan
Prof. Tian-Hua Liu, National Taiwan University of Science and Technology, Taiwan

A Family of Sensorless Observers with Speed Estimate for Rotor Position Estimation of IM and PMSM Drives

Prof. Mihai Comanescu, Penn State Altoona, USA

Sliding Mode Compensator for Improving Robustness of Phase Locked Loop for Encoderless Servo Drive

Dr. Noor Aamir Baloch, Yaskawa Electric Corporation, Japan
Mr. Kentaro Inomata, Yaskawa Electric Corporation, Japan
Mr. Shinya Morimoto, Yaskawa Electric Corporation, Japan
Dr. Kozo Ide, Yaskawa Electric Corporation, Japan
Prof. Kazuhiro Tsuruta, Kyushu Sangyo University, Japan

Integration of Observer Equations used in AC Motor Drives by Zero and First Order Hold Discretization

Prof. Mihai Comanescu, Penn State Altoona, USA

Integration of HFSI and Extended-EMF Based Techniques for PMSM Sensorless Control in HEV/EV Applications

Mr. Jorge Lara, École de Technologie Supérieure, Canada
Prof. Ambrish Chandra, École de Technologie Supérieure, Canada
Dr. Jianhong Xu, TM4 Inc., Canada

SS25 - Research and Development Projects on Industrial Agents
B-1504, Thursday 25th of October, 10h30

Chair/s: Jose Barata, Paulo Leitao

Quality Control Agents for Adaptive Visual Inspection in Production Lines

Dr. Lorenzo Stroppa, Università Politecnica delle Marche, Italy
Mr. Nelson Rodrigues, Polytechnic Institute of Bragança, Portugal
Prof. Paulo Leitão, Polytechnic Institute of Bragança, Portugal
Prof. Nicola Paone, Università Politecnica delle Marche, Italy

GRACE Ontology Integrating Process and Quality Control

Prof. Paulo Leitão, Polytechnic Institute of Bragança, Portugal
Mr. Nelson Rodrigues, Polytechnic Institute of Bragança, Portugal
Mr. Claudio Turrin, Whirlpool Europe, Cassinetta di Biandronno, Italy
Mr. Arnaldo Pagani, Whirlpool Europe, Cassinetta di Biandronno, Italy
Mr. Pierluigi Petrali, Whirlpool Europe, Cassinetta di Biandronno, Italy

Self-Adapting Test-plans in Production Line: an Application to Vision Control Stations

Dr. Alessandro Bastari, Loccioni Group - AEA, Italy
Mr. Matteo Piersantelli, Loccioni Group - AEA, Italy
Dr. Cristina Cristalli, Loccioni Group - AEA, Italy
Prof. Nicola Paone, Università Politecnica delle Marche, Italy

Visualization Tool to Support Multi-Agent Mechatronic Based Systems

Mr. João Ferreira, Royal Institute of Technology, Sweden
Dr. Luis Ribeiro, Universidade Nova de Lisboa, Portugal
Mr. Pedro Neves, Royal Institute of Technology, Sweden
Mr. Hakan Akillioglu, Royal Institute of Technology, Sweden
Prof. Mauro Onori, Royal Institute of Technology, Sweden
Prof. José Barata, Universidade Nova de Lisboa, Portugal

A Product Handling Technical Architecture for Multiagent-based Mechatronic Systems

Dr. Luis Ribeiro, Cts - Uninova, Portugal
Mr. Andre Rocha, Cts - Uninova, Portugal
Prof. Jose Barata, Cts - Uninova, Portugal

Skill Based Configuration Methodology for Evolvable Mechatronic Systems

Dr. Pedro Ferreira, The University of Nottingham, United Kingdom
Dr. Margarita Razgon, The University of Nottingham, United Kingdom
Mr. Piero Larizza, Masmec, Italy
Mr. Giuseppe Triggiani, Masmec, Italy
Dr. Niels Lohse, The University of Nottingham, United Kingdom

SS02 - Real-time Wireless Communication for Industrial Applications
B-1506, Thursday 25th of October, 10h30

Chair/s: Johan Åkerberg, Mikael Gidlund

Reliable RSS-based Routing Protocol for Industrial Wireless Sensor Networks

Mr. Kan Yu, Mälardalen University, Sweden
Dr. Mikael Gidlund, ABB AB, Corporate Research, Sweden
Dr. Johan ÅKerberg, ABB AB, Corporate Research, Sweden
Prof. Mats Björkman, Mälardalen University, Sweden

Analysis of Wireless Communications in Underground Tunnels for Industrial Use

Mr. Javier Ferrer-Coll, HiG, Sweden
Mr. Per ÄNgskog, HiG, Sweden
Ms. He Shabai, HiG, Sweden
Mr. José Chilo, HiG, Sweden
Prof. Peter Stenumgaard, Foi, Sweden

Utilizing Parallelization and Embedded Multicore Architectures for Scheduling Large-Scale Wireless Mesh Networks

Mr. Song Han, University of Texas at Austin, USA
Prof. Aloysius K. Mok, University of Texas at Austin, USA
Mr. Mark Nixon, Emerson Process Management, USA
Mr. Deji Chen, Emerson Process Management, USA
Mr. Lawrence Waugh, Texas Multicore Technologies, Inc., USA
Mr. Fred Stotz, Advanced Micro Devices, USA

Issues of Routing Protocol for Wireless Industrial Sensor Networks

Dr. Jing Zhao, Beijing Jiaotong University, China
Dr. Dong Yang, Beijing Jiaotong University, China
Prof. Yajuan Qin, Beijing Jiaotong University, China
Dr. Tao Zheng, Beijing Jiaotong University, China
Dr. Junqi Duan, Beijing Jiaotong University, China
Prof. Mikael Gidlund, ABB AB, Corporate Research, Sweden

FPGA Implementation and Evaluation of Discrete-time Chaotic Generators Circuits

Mr. Pascal Giard, École de technologie supérieure, Canada
Dr. Georges Kaddoum, École de technologie supérieure, Canada
Prof. François Gagnon, École de technologie supérieure, Canada
Prof. Claude Thibeault, École de technologie supérieure, Canada

Technological leap of Signal Transfer System: CONTACTLESS

Mr. Rémy Astier, Lti, Ea 3899, France
Dr. Thierry Capitaine, Lti, Ea 3899, France
Dr. Valéry Bourny, Lti, Ea 3899, France
Dr. Jérôme Dubois, Lti, Ea 3899, France
Prof. Jérôme Fortin, Lti, Ea 3899, France

TT01 a - Fuzzy Systems
B-1514, Thursday 25th of October, 10h30

Chair/s: Guy Gauthier, Francis Oukou Aimé

PSO-Based Fuzzy Predictive Control

Mr. Oussama Ait Sahed, University of Blida, Algeria
Dr. Kamel Kara, University of Blida, Algeria
Dr. Mohamed Laid Hadjili, High School of Computer Sciences (ESI), Bruxelles, Belgium

Tuning a Fuzzy Controller by Particle Swarm Optimization for an Active Suspension System

Mr. Jorge Hurel, Escuela Superior Politécnica del Litoral, Ecuador
Dr. Anthony Mandow, Universidad de Malaga, Spain
Dr. Alfonso Garcia-Cerezo, Universidad de Malaga, Spain

On delay-derivative-dependent sampled-data fuzzy control design for T-S model-based fuzzy systems with interval time-varying delay

Prof. Xiefu Jiang, Central Queensland University, Australia
Prof. Qing-Long Han, Central Queensland University, Australia

Sampled-Data Stabilization for Takagi-Sugeno Fuzzy Systems Using Membership Function Deviations

Mr. Xiao-Bo Chi, Shanxi University, China
Prof. Xin-Chun Jia, Shanxi University, China
Prof. Qing-Long Han, Central Queensland University, Australia

Slip Control of a Quarter Car Model Based on Type-1 Fuzzy Neural System with Parameterized Conjunctions

Ms. Ayse C. Aras, Bogazici University, Turkey
Prof. Okyay Kaynak, Bogazici Univeristy, Turkey
Prof. Rahib Abiyev, Near East University, Turkey

TT11 a - Image Processing I
B-1516, Thursday 25th of October, 10h30

Chair/s: Marcel Gabrea, Mitsuharu Matsumoto

Self-quotient-referential bilateral filter for images under varying lighting conditions

Dr. Mitsuharu Matsumoto, University of electro-communications, Japan

The DLMT hardware implementation. A comparative study with the DCT and the DWT

Prof. Felix Moreno, Universidad Politecnica de Madrid, Spain
Mr. David Aledo, Universidad Politecnica de Madrid, Spain

Hybrid Segmentation of Breast Cancer Cell Images Using a New Fuzzy Active Contour Model and an Enhanced Watershed Method

Mrs. Aymen Mouelhi, ESSTT-SICISI Unit, University of Tunis, Tunisia
Dr. Mounir Sayadi, ESSTT-SICISI Unit, University of Tunis, Tunisia
Prof. Farhat Fnaiech, ESSTT-SICISI Unit, University of Tunis, Tunisia

Statistical Features Selection from Intrinsic Mode Functions for Pathologies Detection in Retina Digital Images

Mr. Salim Lahmiri, École de technologie supérieure, Canada
Prof. Christian Gargour, École de technologie supérieure, Canada
Prof. Marcel Gabrea, École de technologie supérieure, Canada

Expression of Individual Woven Yarn of Textile Fabric by Clustering Three Dimensional CT Image Using Mahalanobis Distance

Dr. Toshihiro Shinohara, Kinki University, Japan

Extended CoHOG and Particle Filter by Improved Motion Model for Pedestrian Active Safety

Mr. Hirokatsu Kataoka, Keio University, Japan
Mr. Kimimasa Tamura, Keio University, Japan
Dr. Yasuhiro Matsui, National Traffic Safety and Environment Laboratory, Japan
Prof. Yoshimitsu Aoki, Keio University, Japan

TT05 - Factory Automation and Industrial Informatics
B-1518, Thursday 25th of October, 10h30

Chair/s: Armando Colombo, Dietmar Bruckner

Virtual Enterprise Planning System Using Time Windows and Capacity Constraint Concepts

Mr. Marcosiris A. O. Pessoa, University of Sao Paulo, Brazil
Prof. Fabrício Junqueira, University of Sao Paulo, Brazil
Prof. Diolino J. Santos Filho, University of Sao Paulo, Brazil
Prof. Newton Maruyama, University of Sao Paulo, Brazil
Prof. Lucas A. Moscato, University of Sao Paulo, Brazil
Prof. Paulo E. Miyagi, University of Sao Paulo, Brazil

Requested Behavior Driven Control of Product Definition

Prof. László Horváth, Óbuda University, Hungary
Prof. Imre J. Rudas, Óbuda University, Hungary

Energy-aware Foundry Production Scheduling

Mrs. Oihane Kamara, Deusto Institute of Technology - DeustoTech Energy, University of Deusto, Spain
Mr. Yoseba K. Penya, Deusto Institute of Technology - DeustoTech Energy, University of Deusto, Spain

A SAN Model for the Analysis of the Flow Control Congestion Mechanism of KNXnet/IP

Prof. Salvatore Cavalieri, University of Catania, Italy
Dr. Ferdinando Chiacchio, University of Catania, Italy

Activity Recognition Using a Hierarchical Model

Mr. Caglar Tirkaz, Sabanci University, Turkey
Dr. Dietmar Bruckner, Vienna University of Technology, Austria
Mr. GuoQing Yin, Vienna University of Technology, Austria
Dr. Jan Haase, Vienna University of Technology, Austria

Adaptive Network Fuzzy Inference System and Support Vector Machine Learning for Tool Wear Estimation in High Speed Milling Process

Dr. Xiang Li, Singapore Institute of Manufacturing Technology, Singapore
Prof. Meng Joo Er, Nanyang Technological University, Singapore
Ms. Hailin Ge, Nanyang Technological University, Singapore
Dr. Oon Peen Gan, Singapore Institute of Manufacturing Technology, Singapore
Mr. Sheng Huang, Singapore Institute of Manufacturing Technology, Singapore
Dr. Lianyin Zhai, National University of Singapore, Singapore
Mr. San Linn, Nanyang Technological University, Singapore
Mr. Amin Torabi Jahromi, Nanyang Technological University, Singapore

Luncheon Plenary - Bombardier Aerospace: Charting the Course of Aviation Technology
Pavilion A, Main Hall, Thursday 25th of October, 12h30

Luncheon Speaker: Fassi Kafyeke, Bombardier Aerospace

Presenters: Hani Moustafa, Canada; Louis A. Dessaint, Canada and Leopoldo Franquelo Garcia, Spain

Abstract - Bombardier Aerospace is developing the Learjet 85 Mid-size Business Jet, the Global 7000 and 8000 Super-Large Business Jets and the CSeries 110 to 130-pax commercial Jetliners. These projects require investment and focus in technology development, aircraft design and product development.The presentation will discuss some of the advanced systems technologies developed by Bombardier that will make these airplanes and others pillars of 21st century aviation: fly-by-wire, advanced navigation systems, electric systems, modular avionics and highly integrated systems.

TU 2 - FPGA-based Digital Control Development with Matlab/Simulink and Altera DSP Builder
A-1150, Thursday 25th of October, 14h00

Lecturer/s: Jason Katcha, All Digital Power, USA, Michael Parker, All Digital Power, USA, Ezana Mekonnen, Altera Corp., USA

TU 1 - Design of Series/Parallel MultiCell Converters for Improved Power Conversion
A-1160, Thursday 25th of October, 14h00

Lecturer/s: Dr. Thierry Meynard

TT07 c - Three-phase High Power Factor Rectifiers
A-1170, Thursday 25th of October, 14h00

Chair/s: Nasir Uddin, Gerry Moschopoulos

PWM-controlled Rectifiers without the Need of an Extra Synchronisation Unit

Prof. Qing-Chang Zhong, The University of Sheffield, United Kingdom
Mr. Zhenyu Ma, Loughborough University, United Kingdom
Dr. Phi-Long Nguyen, Loughborough University, United Kingdom

Research of three-phase four-leg rectifier

Prof. Xin Chen, Nanjing University of Aeronautics & Astronautics, China
Dr. Zheng Wei, Nanjing University of Aeronautics & Astronautics, China
Prof. Huizhen Wang, Nanjing University of Aeronautics & Astronautics, China
Mr. ChenSong Li, Nanjing University of Aeronautics & Astronautics, China
Prof. ChunYing Gong, Nanjing University of Aeronautics & Astronautics, China

Input AC Side Switched Active Filtered High Performance Three Phase Ćuk Rectification with Energy Recovery Snubber

Mr. Md Ashfanoor Kabir, Dept. of EEE, BUET, Bangladesh
Mrs. Amina Abedin, Dept. of EEE, BUET, Bangladesh
Mr. Rubaiyat Hossain, Dept. of EEE, BUET, Bangladesh
Prof. M. Nasir Uddinn, Department of Electrical Engineering, Lakehead University, Canada
Prof. M. A. Choudhury, Dept. of EEE, BUET, Bangladesh

A New Interleaved Three-Phase Single-Stage PFC AC-DC Converter

Mr. Mehdi Narimani, University of Western Ontario, Canada
Dr. Gerry Moschopoulos, University of Western Ontario, Canada

Modified One-Cycle-Controlled Three-phase Power-Factor-Correction

Mr. Xiang Deng, Nanjing University of Aeronautics & Astronautics, China
Dr. Zheng Wei, Nanjing University of Aeronautics & Astronautics, China
Ms. Yi Fan, Nanjing University of Aeronautics & Astronautics, China
Prof. ChunYing Gong, Nanjing University of Aeronautics & Astronautics, China
Dr. Xiaoli Meng, Nanjing University of Aeronautics & Astronautics, China

SS59 a - Resonant and Adaptive Techniques
A-1242, Thursday 25th of October, 14h00

Chair/s: Praveen Jain, José Rodriguez

Modeling of Resonant Inverters with High Harmonic Content using the Extended Describing Function Method

Mr. Alberto Dominguez, Dept. of Electronic Engineering and Communications. University of Zaragoza, Spain
Dr. Aranzazu Otin, Dept. of Electronic Engineering and Communications. University of Zaragoza, Spain
Dr. Luis Angel Barragan, Dept. of Electronic Engineering and Communications. University of Zaragoza, Spain
Dr. Oscar Lucia, Dept. of Electronic Engineering and Communications. University of Zaragoza, Spain
Dr. Jose Ignacio Artigas, Dept. of Electronic Engineering and Communications. University of Zaragoza, Spain

A Resonant Controller with Robust Features for Digital Implementations at Low Sampling Frequency

Prof. Masoud Karimi Ghartemani, Mississippi State University, USA
Dr. Sayed Ali Khajehoddin, Sparq Inc., Canada
Dr. Mohsen Mojiri, Isfahan University of Technology, Iran
Prof. Praveen Jain, Queen's University, Canada
Prof. Alireza Bakhshai, Queen's University, Canada

Multi Loop Deadbeat+Repetitive and Adaptive Control for Power Converters with LCL Filters

Mr. Marcelo Hahn Durgante, Universidade Federal do Pampa, Brazil
Prof. Márcio Stefanello, Universidade Federal do Pampa, Brazil

A New Magnetically Coupled Balancing Topology for Serially Connection of Multiple Switched Mode Power Supplies for High Voltage Application

Prof. M. Reza Dehbozorgi, Shiraz azad university (Member ETS/GREPCI), Iran
Mr. Cedric Somers, Ecole de Technologie Superieure, Canada
Prof. Kamal Al-Haddad, Ecole de Technologie Superieure, Canada

TT07 d - Digital Control of Power Electronics III
A-1300, Thursday 25th of October, 14h00

Chair/s: J. W. Kolar, Hao Ma

A Novel Modulation Technique for Asymmetric Multi-cell Inverters of 27 Levels without Regeneration

Mr. Eduardo Espinosa, Concepcion University, Chile
Prof. Jose Espinoza, Concepcion University, Chile
Mr. Felipe Villarroel, Concepcion University, Chile
Dr. Javier Munoz, Talca University, Chile
Mr. Pedro Melin, Concepcion University, Chile
Mr. Roberto Ramirez, Concepcion University, Chile

Improved Control Scheme Towards Reduced DC Link Inductors in a Multi-Cell Topology based on Current Source Converters

Mr. Pedro Melin, Concepcion University, Chile
Prof. Jose Espinoza, Concepcion University, Chile
Dr. Carlos Baier, Talca University, Chile
Mr. Jaime Rohten, Concepcion University, Chile
Mr. Roberto Ramirez, Concepcion University, Chile
Prof. Luis Moran, Concepcion University, Chile

An Unified d-q Transformation based Balancing Controller for Cascaded Multilevel Converter

Mr. Yun She, Caterpillar, USA

Novel modulation strategy and decoupling algorithm for two-stage three-phase four-leg matrix converter

Mr. Xianhui Qin, Nanjing University of Aeronautics and Astronautics, China
Prof. Bo Zhou, Nanjing University of Aeronautics and Astronautics, China
Mr. Haitao Huang, Nanjing University of Aeronautics and Astronautics, China
Mr. Mingming Shi, Nanjing University of Aeronautics and Astronautics, China
Ms. Xiaoyu Liu, Nanjing University of Aeronautics and Astronautics, China

Multi-Cell Topology based on Voltage-Source Converters with a Reduced DC Capacitor by Means of a Predictive Control Scheme

Mr. Roberto Ramirez, Concepcion University, Chile
Prof. Jose Espinoza, Concepcion University, Chile
Mr. Pedro Melin, Concepcion University, Chile
Mr. Felipe Villarroel, Concepcion University, Chile
Mr. Eduardo Espinosa, Concepcion University, Chile
Dr. Marco Rivera, Universidad Santa Maria, Chile

TT09 b - Photovoltaics Systems II
A-1302, Thursday 25th of October, 14h00

Chair/s: Josep Guerrero, Mohand Ouhrouche

A Fuzzy Logic Control Method for MPPT of Photovoltaic Systems

Mr. Abdullah Noman, King Saud University, Saudi Arabia
Prof. Khaled Addoweesh, King Saud University, Saudi Arabia
Prof. Hussein Mashaly, King Saud University, Saudi Arabia

Identification and Maximum Power Point Tracking of Photovoltaic Generation by a Local Neuro-Fuzzy Model

Mr. Kumars Rouzbehi, Technical University of Catalonia, Spain
Mr. Arash Miranian, University of Tehran, Iran
Dr. Alvaro Luna, Technical University of Catalonia, Spain
Prof. Pedro Rodriguez, Technical University of Catalonia, Spain

Photovoltaic-Fed LED Lighting System with SOC-Based Dimmable LED Load

Dr. Walter Zamboni, DIEII-Univ. degli Studi di Salerno, Italy
Prof. Nicola Femia, DIEII-Univ. degli Studi di Salerno, Italy

Harmonic Elimination in a Multilevel Current-Source Inverter-based grid-connected Photovoltaic System

Mrs. Prajna Dash, University of waterloo, Canada
Prof. Mehrdad Kazerani, University of waterloo, Canada

A Multifunctional Power Flow Controller for Photovoltaic Generation Systems with Compliance to Power Quality Standards

Dr. Abdelhamid Hamadi, ETS Montreal, Canada
Prof. Salem Rahmani, ETS Montreal, Canada
Prof. Kamal Al-Haddad, ETS Montreal, Canada
Prof. Hadi Kanaan, ESIB Lebanon, Lebanon

SS61 b - Matrix Converters I
A-1340, Thursday 25th of October, 14h00

Chair/s: José Rodriguez, Marco Rivera

4-leg Matrix Converter Interface for a Variable-Speed Diesel Generation System

Dr. Roberto Cardenas, University of Chile, Chile
Prof. Jon Clare, University of Nottingham, United Kingdom
Prof. Patrick Wheeler, University of Nottingham, United Kingdom

Challenges of high speed digital control in a SiC JFET Matrix Converter implementation

Dr. Liliana de Lillo, University of Nottingham, United Kingdom
Dr. Lee Empringham, University of Nottingham, United Kingdom
Prof. Pat Wheeler, University of Nottingham, United Kingdom
Dr. Martin Schulz, Infineon Technologies, Germany

Reduction of Common-Mode Voltage in an Indirect Matrix Converter with Imposed Sinusoidal Input/Output Waveforms

Dr. Marco Rivera, Universidad Tecnica Federico Santa Maria, Chile
Prof. Jose Rodriguez, Universidad Tecnica Federico Santa Maria, Chile
Prof. Jose Espinoza, Universidad de Concepcion, Chile
Prof. Bin Wu, Ryerson University, Canada

An operative comparison of two DVR topologies based on matrix converter without energy storage

Dr. José M. Lozano, Guanajuato University, Mexico

Comparison of Model Based Predictive Control and Fuzzy Logic Control of a DFIG with an Indirect Matrix Converter

Mr. Christian F. Calvillo, Tecnológico de Monterrey, Campus Monterrey, Mexico
Mr. Alejandro Olloqui, Tecnológico de Monterrey, Campus Monterrey, Mexico
Mr. Fernando Martell Chávez, Tecnológico de Monterrey, Campus Monterrey, Mexico
Dr. José Luis Elizondo Carrales, Tecnológico de Monterrey, Campus Monterrey, Mexico
Dr. Alfonso ÁVila, Tecnológico de Monterrey, Campus Monterrey, Mexico
Dr. Manuel Eduardo Macías García, Tecnológico de Monterrey, Campus Monterrey, Mexico
Dr. Marco Rivera, Universidad Técnica Federico Santa María, Valparaíso, Chile
Dr. José Rodríguez, Universidad Técnica Federico Santa María, Valparaíso, Chile

SS45 - Inverter-based Distributed Generators as Multifunction Device
A-1350, Thursday 25th of October, 14h00

Chair/s: Vinod Khadkikar, Kamal Al-Haddad

Harmonic Compensation Using Residential PV Interfacing Inverter

Mr. Md Shirajum Munir, University of Alberta, Canada
Mr. Yun Wei Li, University of Alberta, Canada

Novel Control Strategies for SSR Mitigation and Damping Power System Oscillations in a Series Compensated Wind Park

Dr. Mohamed El Moursi, Assistant Professor,Electrical Power Engineering, Masdar Institute of Science and Technology, United Arab Emirates
Dr. Vinod Khadkikar, Assistant Professor,Electrical Power Engineering, Masdar Institute of Science and Technology, United Arab Emirates

A Novel Transformerless Hybrid Series Active Filter

Mr. Alireza Javadi, Ecole de Technologie Superieure (ETS), Canada
Prof. Handy Fortin Blanchette, Ecole de Technologie Superieure (ETS), Canada
Prof. Kamal Al-Haddad, Ecole de Technologie Superieure (ETS), Canada

An advanced control algorithm for Series hybrid active filter adopting UPQC behavior.

Mr. Alireza Javadi, Ecole de Technologie Superieure (ETS), Canada
Prof. Handy Fortin Blanchette, Ecole de Technologie Superieure (ETS), Canada
Prof. Kamal Al-Haddad, Ecole de Technologie Superieure (ETS), Canada

Interline Photovoltaic (I-PV) Power Plants For Voltage Unbalance Compensation

Mr. Ahmed Moawwad, Masdar Institute, United Arab Emirates
Dr. Vinod Khadkikar, Masdar Institute, United Arab Emirates
Prof. James Kirtley, Massachusetts Institute of Technology, USA

TT08 b - Power Systems
A-1752, Thursday 25th of October, 14h00

Chair/s: Louis A. Dessaint, Kishore Chatterjee

State-of-the-Art of Topology Processors for EMS and PMU Applications and Their Limitations

Mr. Mostafa Farrokhabadi, KTH Royal Institute of Technology, Sweden
Prof. Luigi Vanfretti, KTH Royal Institute of Technology, Sweden

A Survey of Methods for Placing Shunt Capacitor Banks in Power Network with Harmonic Distortion

Mr. Liang Du, Georgia Institute of Technology, United States
Ms. Lijun He, Georgia Institute of Technology, United States
Prof. Ronald G. Harley, Georgia Institute of Technology, United States

Active and Reactive Power Control of Synchronous Generator for the Realization of a Virtual Power Plant

Mr. Hammad Khan, University of Western Australia, Australia
Mr. Peter Bargiev, University of Western Australia, Australia
Dr. Victor Sreeram, University of Western Australia, Australia
Dr. Herbert Iu, University of Western Australia, Australia
Dr. Tyrone Fernando, University of Western Australia, Australia
Mr. Yateendra Mishra, Queensland University of Technology, Australia

Modelling and Dynamic Analysis of Offshore Wind Farms According to the French TSO Grid Code

Mr. Bayram Tounsi, Edf R&D, France
Mr. Alexandre Henry, KTH Royal Institute of Technology, Sweden
Prof. Luigi Vanfretti, KTH Royal Institute of Technology, Sweden

Integrating Distributed Energy Resources in the Electrical Grid considering Resource Variability for Reliable Power Planning

Mr. Shanmuga Veerapen, University of Mauritius, Mauritius
Dr. Robert T. F. Ah King, University of Mauritius, Mauritius

IF 2 - Industry Forum - Security Risks for Industrial Computing
A-1600, Thursday 25th of October, 14h00

Chair/s: Michael Condry, Richard Macdonald

Security is an increasingly growing and complex problem particularly for industry solutions where critical infrastructure can be attacked. There will be Industry speakers addressing different technology area exposing the challenges and directions of security across industrial electronics technologies including control systems, remote power management, and others.

Embedded Security Challenges

Robert Vamosi, Monaca Corp.

Stuxnet, Duqu, and Flame ... The Pandora's box is open!

Stamatis Karnouskos, Research Expert SAP

Infrastructure Security: An Embedded Semantics Approach

Pierre Fiorini, Silkan Canada

TT03 b - Power converters
B-0904, Thursday 25th of October, 14h00

Chair/s: K. Gopakumar, Josep Guerrero

Enhanced Bandwidth Current Controller for FPGA Based Inverter Drives - A Detailed Analysis and Implementation

Mr. Florian Senicar, Uni Wuppertal, Germany
Mr. Alexander Bartsch, Uni Wuppertal, Germany
Mr. Benjamin Krüger, Uni Wuppertal, Germany
Prof. Stefan Soter, Uni Wuppertal, Germany

Analysis of Current Reaction on Inverter-Switching to Detect Changes in Electrical Machine's High-Frequency Behavior

Mr. Peter Nussbaumer, Vienna University of Technology, Austria
Mr. Christian Santin, Vienna University of Technology, Austria
Prof. Thomas M. Wolbank, Vienna University of Technology, Austria

Multilevel Octadecagonal Space Vector Generation for Induction Motor Drives by Cascading Asymmetric Three Level Inverters

Prof. Gopakumar K, Indian Institue of Science, India
Mr. Mathew K, Indian Institue of Science, India
Mr. Najath Abdul Azeez, Indian Institue of Science, India
Mr. Jaison Mathew, Indian Institue of Science, India
Mr. Anubrata Dey, Indian Institue of Science, India
Prof. Umanand L, Indian Institute of Science, India

Partial Resonant AC Link Converter: A Highly Reliable Variable Frequency Drive

Ms. Mahshid Amirabadi, Texas A&M University, USA
Prof. Hamid Toliyat, Texas A&M University, USA
Mr. William Alexander, Ideal Power Converters co., USA

Space Vector based Dithered Sigma Delta Modulator for Two-level Inverter to suppress the Harmonic Spikes

Prof. Biji Jacob, College of Engineering, Trivandrum, India
Dr. M. R. Baiju, College of Engineering, Trivandrum, India

TT02 b - Electric and Plug-In Hybrid Electric Vehicles
B-0906, Thursday 25th of October, 14h00

Chair/s: Sheldon Williamson, Tanvir Rahman

A Trigonometric Velocity Estimator Using Resolver Sensor in Drive System Applications

Mr. Saeid Haghbin, Chalmers University of Technology, Sweden
Mrs. Maliheh Sadeghi Kani, Chalmers University of Technology, Sweden
Mr. David Vindel, Chalmers University of Technology, Sweden
Prof. Ola Carlson, Chalmers University of Technology, Sweden
Dr. Sonja Lundmark, Chalmers University of Technology, Sweden

Modified Stator Flux Estimation Based Direct Torque Controlled PMSM Drive for Hybrid Electric Vehicle

Mr. Abhijit Choudhury, Concordia University, Canada
Prof. Pragasen Pillay, Concordia University, Canada
Prof. Sheldon Williamson, Concordia University, Canada

Control of Induction Machines on an Electric Vehicle with Maximum Torque and Efficiency via the Optimal Slip Factor

Mr. Chih-Han Kuo, Institute of Electrical Control Engineering, National Chiao Tung University, Taiwan
Mr. Chen-Wen Hsu, Institute of Electrical Control Engineering, National Chiao Tung University, Taiwan
Mr. Chih-Wei Yu, Institute of Electrical Control Engineering, National Chiao Tung University, Taiwan
Prof. Pau-Lo Hsu, Institute of Electrical Control Engineering, National Chiao Tung University, Taiwan

A Precise Open Loop Torque Control for an Interior Permanent Magnet Synchronous Motor (IPMSM) considering Iron Losses

Mr. Wilhelm Peters, Paderborn University, Germany
Mr. Oliver Wallscheid, Paderborn University, Germany
Prof. Joachim Böcker, Paderborn University, Germany

Design and FEM Validation for an Axial Single Stator Dual Rotor PMSM

Dr. Lucian Nicolae Tutelea, Politehnica University of Timisoara, Romania
Dr. Sorin Ioan Deaconu, Politehnica University of Timisoara, Romania
Prof. Ion Boldea, Politehnica University of Timisoara, Romania

Advanced Drive for Low Cost Permanent Magnet Synchronous Machines used for HEV - A Review

Mr. Abhijit Choudhury, Concordia University, Canada
Prof. Pragasen Pillay, Concordia University, Canada
Prof. Sheldon Williamson, Concordia University, Canada

SS08 a - Multiphase Variable Speed Drives I
B-0908, Thursday 25th of October, 14h00

Chair/s: Emil Levi, Mario J. Duran

PWM Techniques for an Open-end Winding Five-phase Drive with a Single DC Source Supply

Mr. Nandor Bodo, Liverpool John Moores University, United Kingdom
Dr. Martin Jones, Liverpool John Moores University, United Kingdom
Prof. Emil Levi, Liverpool John Moores University, United Kingdom

Multiphase Space Vector Control Modulation Technique for Voltage Source Converters

Dr. ÓScar López, University of Vigo, Spain
Dr. Jacobo ÁLvarez, University of Vigo, Spain
Mr. Jano Malvar, University of Vigo, Spain
Prof. Alejandro G. Yepes, University of Vigo, Spain
Ms. Ana Vidal, University of Vigo, Spain
Mr. Pablo Fernández-Comesaña, University of Vigo, Spain
Dr. Francisco D. Freijedo, University of Vigo, Spain
Dr. Jesús Doval-Gandoy, University of Vigo, Spain

Multiphase PM Machine for More Electric Aircraft Applications: Prototype for Design Validation

Prof. Radu Bojoi, Politecnico di Torino, Italy
Prof. Andrea Cavagnino, Politecnico di Torino, Italy
Prof. Alberto Tenconi, Politecnico di Torino, Italy
Dr. Silvio Vaschetto, Politecnico di Torino, Italy

Speed Control of Five-Phase Induction Motor Drives with an Open Phase Fault Condition and Predictive Current Control Methods

Mr. Hugo Guzman, University of Seville, Spain
Dr. Mario Duran, University of Málaga, Spain
Prof. Federico Barrero, University of Seville, Spain

Computation of Optimal Current References for Flux-weakening of Multi-Phase Synchronous Machines

Mr. Li Lu, Arts et Metiers Paristech - L2EP, France
Mr. Bassel Aslan, Arts et Metiers Paristech - L2EP, France
Mr. Luc Kobylanski, Valeo-Eem, France
Mr. Paul Sandulescu, Arts et Metiers Paristech - L2EP, France
Dr. Fabien Meinguet, Arts et Metiers Paristech - L2EP, France
Dr. Xavier Kestelyn, Arts et Metiers Paristech - L2EP, France
Prof. Eric Semail, Arts et Metiers Paristech - L2EP, France

TT06 a - Mechatronics and Robotics I
B-1502, Thursday 25th of October, 14h00

Chair/s: Hiromu Onda, Riccardo Antonello

Motion Control for 2DOF Tendon-Driven Spherical Joint Mechanisms

Mr. Keita Shimamoto, Keio University, Japan
Prof. Kouhei Ohnishi, Keio University, Japan

On Internet based supermedia enhanced telepresence via cellular data network

Mr. Jesus David Terrazas Gonzalez, University of Manitoba, Canada
Mr. Greg Linton, University of Manitoba, Canada
Dr. Wai-keung Fung, University of Manitoba, Canada
Mr. Rob Barwell, RobBarwell.com, Canada

Hand-Free Interface Based on Facial Orientations

Dr. Nobuaki Nakazawa, Gunma University, Japan
Mr. Takashi Mori, Gunma University, Japan
Ms. Aya Maeda, Gunma University, Japan
Prof. Ilhwan Kim, Kangwon National University, Korea (South)
Dr. Toshikazu Matsui, Gunma University, Japan
Prof. Kou Yamada, Gunma University, Japan

Multipurpose Optimization of Camera Position by Modeling Image Noise in Camera for Robot Vision

Mr. Ryo Kojima, Doshisha University, Japan
Prof. Nobutaka Tsujiuchi, Doshisha University, Japan
Prof. Takayuki Koizumi, Doshisha University, Japan
Mr. Masahiro Masuguchi, Doshisha University, Japan

SS07 - Energy and Information Technology
B-1506, Thursday 25th of October, 14h00

Chair/s: Peter Palensky, Hiroaki Nishi

Service-oriented Communication Platform for Scalable Smart Community Applications

Dr. Ryogo Kubo, Keio University, Japan
Mr. Tianmeng Shen, Keio University, Japan
Mr. Toshiro Togoshi, Keio University, Japan
Mr. Koichi Inoue, Keio University, Japan
Prof. Hiroaki Nishi, Keio University, Japan
Mr. Masashi Tadokoro, Ntt, Japan
Dr. Ken-Ichi Suzuki, Ntt, Japan
Dr. Naoto Yoshimoto, Ntt, Japan

Real-Time Simulation of Cooperative Demand Control Method With Batteries

Mr. Kawashima Daichi, Keio University, Japan
Mr. Ihara Masaru, Keio University, Japan
Mr. Shen Tianmeng, Keio University, Japan
Prof. Nishi Hiroaki, Keio University, Japan

Evaluation of two approaches for simulating cyber-physical energy systems

Dr. Edmund Widl, Austrian Institute of Technology, Austria
Dr. Peter Palensky, Austrian Institute of Technology, Austria
Dr. Atiyah Elsheikh, Austrian Institute of Technology, Austria

Communication Interfaces for the EV Service Provider of the Smart Grid

Ms. ÁNgeles Rodríguez, University of Seville, Spain
Prof. Antonio Torralba, University of Seville, Spain
Mr. Alberto Villafañe, Endesa Ingeniería, Spain
Ms. Eloísa Martín, University of Seville, Spain

Using Smart Meters for Diagnostics and Model-Based Control in Thermal Comfort Systems

Mr. Maruti Sinha, UNC Charlotte, USA
Prof. Robert Cox, UNC Charlotte, USA

TT01 b - Robotics
B-1514, Thursday 25th of October, 14h00

Chair/s: Maarouf Saad, Amhed Cheridi

Control System Design for Robot Arms Playing Inside-Loop Yoyo Trick

Mr. Tomoyuki Sakuma, Tokyo Denki University, Japan
Mr. Takuma Nemoto, Tokyo Denki University, Japan
Prof. Masami Iwase, Tokyo Denki University, Japan
Prof. Shoshiro Hatakeyama, Tokyo Denki University, Japan
Prof. Masaki Izutsu, Tokyo Denki University, Japan

Visual Motion Observer-based Pose Control via Obstacle Avoidance Navigation Function for Eye-in-Hand Systems

Mr. Yusei Tsuruo, Kanazawa Institute of Technology, Japan
Dr. Toshiyuki Murao, Advanced Institute of Industrial Technology, Japan
Dr. Hiroyuki Kawai, Kanazawa Institute of Technology, Japan
Prof. Masayuki Fujita, Tokyo Institute of Technology, Japan

Multi-Model Observer and State Feedback Position Control of a Flexible Robotic Actuator

Mr. Benoit Huard, Cea, France
Mr. Mathieu Grossard, Cea, France
Mrs. Sandrine Moreau, University of Poitiers, France
Mr. Thierry Poinot, University of Poitiers, France

A Null-Space-based Control for Cable Driven Manipulators

Dr. Davide Cattin, Keio University, Japan
Mr. Emre Sariyildiz, Keio University, Japan
Prof. Kohuei Ohnishi, Keio University, Japan

Reproduction of Haptic Data in Manipulating and Grasping Operations

Ms. Ayaka Matsui, School of Integrated Design Engineering, Keio University, Japan
Prof. Seiichiro Katsura, Department of System Design Engineering, Keio University, Japan

TT01 c - Optimization approaches in Control
B-1516, Thursday 25th of October, 14h00

Chair/s: Lyne Woodward, Guy Gauthier

High Order Robust Terminal Iterative Learning Control Design Using Genetic Algorithm

Mr. Samir Boudria, Ecole de Technologie Superieure, Canada
Prof. Guy Gauthier, Ecole de Technologie Superieure, Canada

Stable Iterative Correlation-Based Tuning Algorithm for Servo Systems

Dr. Mircea-Bogdan Radac, Politehnica University of Timisoara, Romania
Prof. Radu-Emil Precup, Politehnica University of Timisoara, Romania
Prof. Emil M. Petriu, University of Ottawa, Canada
Mr. Bogdan-Stefan Cerveneak, Politehnica University of Timisoara, Romania
Dr. Claudia-Adina Dragos, Politehnica University of Timisoara, Romania
Prof. Stefan Preitl, Politehnica University of Timisoara, Romania

Node Selection and Gain Assignment in Pinning Control using Genetic Algorithm

Ms. Cui Li Yang, City University of Hong Kong, Hong Kong
Dr. Wallace Kit-Sang Tang, City University of Hong Kong, Hong Kong
Mr. Qiang Jia, City University of Hong Kong, Hong Kong

Deveolopment of Optimization Algorithm for Green Drive on Roads with Continuous Curves

Mr. Jihoon Kim, Hanyang Univ., Korea (South)
Mr. Namju Jeon, Hanyang Univ., Korea (South)
Prof. Hyeongcheol Lee, Hanyang Univ., Korea (South)

Evolutionary Computation Based Optimization of Controller Parameters for an Electromagnetic Levitation System

Mr. Mrinal Kanti Sarkar, Dept. of Electrical Engineering, NIT Durgapur, India
Dr. Subrata Banerjee, Dept. of Electrical Engineering, NIT Durgapur, India
Dr. Sakti Prasad Ghoshal, Dept. of Electrical Engineering, NIT Durgapur, India

SS10 a - Intelligent Real-time Automation and Control Systems
B-1518, Thursday 25th of October, 14h00

Chair/s: Valeriy Vyatkin, Thomas Strasser

Confidence Estimation of Feedback Information Using Dynamic Bayesian Networks

Mr. Quoc Bao Duong, Grenoble-INP, France
Mr. Eric Zamai, Grenoble-INP, France
Mr. Khoi Quoc Tran Dinh, DaNang University, Viet Nam

Free Shape Paths in Industrial Robots

Mr. Luis E. Gonzalez Moctezuma, Tampere University of Technology, Finland
Dr. Andrei Lobov, Tampere University of Technology, Finland
Dr. Jose L. Martinez Lastra, Tampere University of Technology, Finland

IEC 61131-3 Model for Model-Driven Development

Ms. Monika Wenger, Vienna University of Technology, Austria
Dr. Alois Zoitl, Vienna University of Technology, Austria

Constructing model-based product line IDEs for Embedded System Design

Mr. Horacio Hoyos, Universidad de los Andes, Colombia
Dr. Rubby Casallas, Universidad de los Andes, Colombia
Dr. Fernando Jimenez, Universidad de los Andes, Colombia

Safety Aspects and Guidelines for Robot Compatible Environment

Ms. Zita V. Farkas, Department of Machine and Product Design - Budapest University of Technology and Economics, Hungary
Dr. Peter Korondi, Department of Mechatronics, Optics and Engineering Informatics - Budapest University of Technology and Economics, Hungary
Dr. Lorant Fodor, Department of Machine and Product Design - Budapest University of Technology and Economics, Hungary

TT07 e - DC-DC Converter Topologies I
A-1170, Thursday 25th of October, 16h00

Chair/s: Peter Lehn, B. G. Fernandes

Battery-Supplied Transformerless Ballast for DC High Intensity Discharge (HID) Lamps

Mr. Antonio Leon-Masich, Universitat Rovira i Virgili, Spain
Dr. Hugo Valderrama-Blavi, Universitat Rovira i Virgili, Spain
Mr. Josep Maria Bosque-Moncusí, Universitat Rovira i Virgili, Spain
Prof. Luis Martínez-Salamero, Universitat Rovira i Virgili, Spain
Dr. Jose Antonio Barrado-Rodrigo, Universitat Rovira i Virgili, Spain
Mr. Freddy Flores-Bahamonde, Universitat Rovira i Virgili, Spain

A Transformerless High Boost DC-DC Converter for use in Medium / High Voltage Applications

Mr. Theodore Soong, University of Toronto, Canada
Prof. Peter Lehn, University of Toronto, Canada

Power Improvement of Piezoelectric Transformer-Based DC/DC Converter

Mr. Yu-Hao Su, Système et Application des Technologies de l'Information et de l'Energie (SATIE, CNRS),Ecole Normale Supérieure de Cachan, France
Dr. Yuan-Ping Liu, Department of Engineering Science and Ocean Engineering, National Taiwan University, Taiwan
Prof. Dejan Vasic, Système et Application des Technologies de l'Information et de l'Energie (SATIE, CNRS),Ecole Normale Supérieure de Cachan, France
Prof. François Costa, Système et Application des Technologies de l'Information et de l'Energie (SATIE, CNRS),Ecole Normale Supérieure de Cachan, France
Prof. Wen-Jong Wu, Department of Engineering Science and Ocean Engineering, National Taiwan University, Taiwan
Prof. Chih-Kung Lee, Institute of Applied Mechanics, National Taiwan University, Taiwan

Nonlinear Effects in Piezoelectric Transformers Explained by Thermal-Electric Model Based on a Hypothesis of Self-Heating

Mr. T. Andersen, Technical University of Danmark, Denmark
Prof. M. A. E. Andersen, Technical University of Denmark, Denmark
Mr. O. C. Thomsen, Technical University of Denmark, Denmark
Dr. M. P. Foster, University of Sheffield, United Kingdom
Dr. D. A. Stone, University of Sheffield, United Kingdom

SS59 b - Distributed Energy Systems
A-1242, Thursday 25th of October, 16h00

Chair/s: Alireza Bakhshai, Kamal Al-Haddad

A Review on Energy Efficiency Optimization in Smart Grid

Ms. Sepide Rafiei, Queen's University, Canada
Prof. Alireza Bakhshai, Queen's University, Canada

Power Management and Control of a Wind Energy Conversion System (WECS) with a Fuzzy Logic Based Maximum Power Point Tracking (MPPT)

Ms. Joanne Hui, Queen's University, Canada
Prof. Praveen K. Jain, Queen's University, Canada

Adptive Transient Power Control Strategy for Parallel-Connected Inverters in an Islanded Microgrid

Mr. Mohammad Hassanzahraee, Queen's University, Canada
Prof. Alireza Bakhshai, Queen's University, Canada

A Fault-Tolerant Switching Scheme for a High-Power High-Frequency-Link Inverter

Mr. Alireza Tajfar, University of Illinois, USA
Prof. Sudip Mazumder, University of Illinois, USA

TT07 f - Modeling of Power Converters and Systems I
A-1300, Thursday 25th of October, 16h00

Chair/s: Mohand Ouhrouche, M. Moallam

Modeling and Design of Multi-cell Buck Converters using Intercell Transformers for HVDC Cable Diagnostic

Mr. Abdallah Darkawi, Université Montpellier 2, France
Dr. Thierry Martiré, Université Montpellier 2, France
Dr. Jean-jacques Huselstein, Université Montpellier 2, France
Prof. François Forest, Université Montpellier 2, France
Dr. Petru Notingher, Université Montpellier 2, France

Modeling and Control of a Three-Phase Boost converter for Irregular Input Sources

Dr. Reza Sabzehgar, Simon Fraser University, Canada
Dr. Mehrdad Moallam, Simon Fraser University, Canada

Time-Domain Steady-State Modeling of Series-Parallel Resonant Converter under Optimized Modulation

Mr. Zhiyu Cao, University of Paderborn, Germany
Mr. Junbing Tao, University of Paderborn, Germany
Dr. Norbert Fröhleke, University of Paderborn, Germany
Prof. Joachim Böcker, University of Paderborn, Germany

Averaged Modeling of Transformer-Coupled Interleaved Boost Converters

Mr. Omar Ruiz, IPICyT, Mexico
Prof. Ilse Cervantes, IPICyT, Mexico

D-STATCOM Applied to Single-Phase Distribution Networks: Modeling and Control

Ms. Taciana Paula Enderle, Universidade Federal de Santa Maria, Brazil
Mr. Guilherme Sebastião da Silva, Universidade Federal de Santa Maria, Brazil
Mr. Clécio Fischer, Universidade Federal de Santa Maria, Brazil
Mr. Rafael Concatto Beltrame, Universidade Federal de Santa Maria, Brazil
Dr. Cassiano Rech, Universidade Federal de Santa Maria, Brazil
Dr. Vinicius Foletto Montagner, Universidade Federal de Santa Maria, Brazil
Dr. Luciano Schuch, Universidade Federal de Santa Maria, Brazil

TT09 c - Energy Harvesting
A-1302, Thursday 25th of October, 16h00

Chair/s: Leila Parsa, Hoang LeHuy

Comparison of Bistable Magnetic Non-linear Piezoelectric Energy Harvester with Traditional Linear Technique

Dr. Dejan Vasic, SATIE Lab, France
Dr. Yuan-Ping Liu, National Taiwan University, Taiwan
Prof. François Costa, SATIE Lab, France
Mr. Yu-Yin Chen, Satie, France

Electromagnetic Micro-power Generator for Energy Harvesting from Breathing

Dr. Aidin Delnavaz, École de technologie supérieure, Canada
Prof. Jérémie Voix, École de technologie supérieure, Canada

Low-Voltage Active Diode Rectifier for Pyroelectric Harvesting Cell

Mr. Mounir Amokrane, Laboratoire Plasma et Conversion d'Energie (LAPLACE)-Université de Toulouse-CNRS, France
Dr. Arnaud Baysse, Laboratoire Plasma et Conversion d'Energie (LAPLACE)-Université de Toulouse-CNRS, France
Prof. Bertrand Nogarede, Laboratoire Plasma et Conversion d'Energie (LAPLACE)-Université de Toulouse-CNRS, France
Dr. Mohamed Rguiti, Laboratoire des Matériaux Céramiques et Procédés Associés (LMCPA) Institut des Sciences et Techniques de Valenciennes (ISTV) Université de Valenciennes et du Hainaut-Cambrésis, France

Optimal Linear Model for Piezoelectric Materials Involved in Road Traffic Energy Harvesting Applications

Prof. Manuel Vázquez-Rodríguez, Universidad Politécnica de Madrid, Spain
Dr. Francisco Javier Jiménez, Universidad Politécnica de Madrid, Spain
Dr. José de Frutos, Universidad Politécnica de Madrid, Spain

A Modified Modulation Scheme for Capacitor Voltage Control of Renewable Energy-Fed Grid-Connected Z-Source Inverters

Mr. Ahmed AbdelHakeem, Alexandria University, Egypt
Dr. Ahmed Elserougi, Alexandria Univesity, Egypt
Prof. Amr El Zawawi, Alexandria University, Egypt
Dr. Shehab Ahmed, Texas A&M University at Qatar, Qatar
Prof. Ahmed Massoud, Qatar University, Qatar

SS11 - High Power Factors Rectifiers
A-1340, Thursday 25th of October, 16h00

Chair/s: Dorin Neacsu, Hadi Kanaan

Design, Modeling, Control and Simulation of a Two-Stage Grid-Connected Power Load Emulator

Dr. Hadi Y. Kanaan, Saint-Joseph University, Lebanon
Mr. Maxime Caron, Ecole de Technologie Supérieure, Canada
Prof. Kamal Al-Haddad, Ecole de Technologie Supérieure, Canada

A Single-Switch Single-Stage Quasi-Active PFC Converter with Regulated DC-Bus Voltage

Dr. Hussain Athab, Ryerson University, Department of Electrical and Computer Engineering, Canada
Dr. Dylan Dah-Lu, School of Electrical and Information Engineering, Australia
Dr. Amir Yazdani, Ryerson University, Department of Electrical and Computer Engineering, Canada
Prof. Bin Wu, Ryerson University, Department of Electrical and Computer Engineering, Canada

Principle of a Novel Component Minimized Active Power Filter for High Power Magnet Supplies

Dr. Dorin Neacsu, Consultant, United States

Active Suppression of Current Harmonics on Single-Phase Current-Source Active Rectifier AC Side: Proposed Approches and Their Evaluation

Dr. Jan Michalik, University of West Bohemia in Pilsen, Czech Republic
Dr. Jan Molnar, University of West Bohemia in Pilsen, Czech Republic
Prof. Zdenek Peroutka, University of West Bohemia in Pilsen, Czech Republic

Input-Output Linearization and PI Control for a Three-Phase Neutral Point Clamped Boost Rectifier

Mr. Ki Chun Ng, RMIT University, Australia
Prof. Liuping Wang, RMIT University, Australia

TT08 c - Power Systems
A-1752, Thursday 25th of October, 16h00

Chair/s: Innocent Kamwa, Pierre Jean Lagace

Application of Imperialist Competitive Algorithm to Design an Optimal Controller for LFC Problem

Mr. Elyas Rakhshani, Technical University of Catalonia, UPC, Spain
Dr. Alvaro Luna, Technical University of Catalonia, UPC, Spain
Mr. Kumars Rouzbehi, Technical University of Catalonia, UPC, Spain
Prof. Pedro Rodriguez, Technical University of Catalonia, UPC, Spain

Optimization of Distribution Network Incorporating Microgrid Using Vaccine-AIS

Mr. Sicong Tan, National University Of Singapore, Singapore
Prof. Jianxin Xu, National University Of Singapore, Singapore
Prof. Sanjib Kumar Panda, National University Of Singapore, Singapore

Appliance Usage Prediction Using a Time Series Based Classification Approach

Mr. Kaustav Basu, G2ELab, France
Dr. Vincent Debusschere, G2ELab, France
Prof. Seddik Bacha, G2ELab, France

Hierarchical Adaptive PSO for Multi-Objective OPF Considering Emissions Based Shunt FACTS

Dr. Belkacem Mahdad, Biskra University, Algeria

Iterative Learning Heuristic Dynamic Programming (ILHDP) design of a Steam Power Plant Controller

Mr. Udhay Ravishankar, University of Idaho, USA
Dr. Milos Manic, University of Idaho, USA

TT03 c - Electrical Machines Modeling
B-0904, Thursday 25th of October, 16h00

Chair/s: Frank Betin, Luca Ferraris

Time domain simulations of synchronous generator modelled by half-order system

Dr. Szymon Racewicz, Gdansk University of Technology, Poland
Prof. Piotr J. Chrzan, Gdansk University of Technology, Poland
Dr. Delphine M. Riu, Grenoble University, France
Prof. Nicolas M. Retiere, Grenoble University, France

Switched Reluctance Machine Modeling Including Core Magnetic Saturation - The Self-Excited Operation Mode

Prof. Victor Bernardeli, Ituiutaba, Brazil

Modeling of the Induction Motor with Two Sets of Three Phase Windings in the Stator and Squirrel Cage Rotor

Dr. Nysret Zenun Avdiu, University of Prishtina, Faculty of Electrical and Computer Engineering, Albania

Investigation on the Thermal Behavior of the dual-rotor Permanent Magnet Induction Machine

Ms. Ana Maria Gazdac, Ecole supérieure d'ingénieurs en électrotechnique et électronique, France
Prof. Augustin Mpanda Mabwe, Ecole supérieure d'ingénieurs en électrotechnique et électronique, France
Prof. Franck Betin, Université de Picardie Jules Verne, France
Prof. Claudia Steluta Martis, Technical University of Cluj-Napoca, Romania
Prof. Karoly Agoston Biro, Technical University of Cluj-Napoca, Romania

TT03 d - Electrical Drives and Control I
B-0906, Thursday 25th of October, 16h00

Chair/s: Chris Edrington, Sheldon Williamson

Marginalized Particle Filter for Sensorless Control of PMSM Drives

Dr. Václav ŠMíDl, Institute of Information Theory and Automation, Czech Republic
Prof. Zdeněk Peroutka, University of West Bohemia, Czech Republic

An Improved Rotor Speed Estimation Method of IPMSM Drives with Cyclic Fluctuating Load

Mr. Yuchao Shi, Tsinghua University, China
Dr. Kai Sun, Tsinghua University, China
Mr. Yan Guo, Tsinghua University, China
Prof. Xiaohua Jiang, Tsinghua University, China
Prof. Lipei Huang, Tsinghua University, China
Prof. Yongdong Li, Tsinghua University, China

Study of On-line Backlash Identification for PMSM Servo System

Dr. Ming Yang, Harbin Institute of Technology, China
Ms. Siyu Tang, Harbin Institute of Technology, China
Mr. Junxin Tan, Harbin Institute of Technology, China
Prof. Dianguo Xu, Harbin Institute of Technology, China

Cooperative Control of Regenerative Brake and Mechanical Brake for a Two Coach Train

Mr. Kota Teramoto, Nagaoka University of Technology, Japan
Prof. Kiyoshi Ohishi, Nagaoka University of Technology, Japan
Dr. Shingo Makishima, Toyo Denki Seizo K.K., Japan
Mr. Keiichi Uezono, Toyo Denki Seizo K.K., Japan
Dr. Shinobu Yasukawa, Former Engineer of Toyo Denki Seizo K.K., Japan

Influence of Non-ideal Magnetic Core Effects on the Experimental Determination of the Magnetic Characteristics of a Switched Reluctance Motor

Mr. Francisco Jose Perez-Cebolla, Universidad de Zaragoza, Spain
Prof. Abelardo Martinez-Iturbe, Universidad de Zaragoza, Spain
Dr. Bonifacio Martin-del-Brio, Universidad de Zaragoza, Spain
Dr. Eduardo Laloya Monzón, Universidad de Zaragoza, Spain
Mr. Sylvia Mendez Prince, Universidad de Zaragoza, Spain

SS08 b - Multiphase Variable Speed Drives II
B-0908, Thursday 25th of October, 16h00

Chair/s: Mario J. Duran, Emil Levi

Speed Sensorless Control of Dual Three-Phase Induction Machine based on a Luenberger Observer for Rotor Current Estimation

Dr. Raul Gregor, Universidad Nacional de Asuncion, Facultad de Ingeniería, Paraguay
Prof. Jorge Rodas, Universidad Nacional de Asuncion, Facultad de Ingeniería, Paraguay

Harmonic Subspace and Sequence Mapping in a Series-Connected Six-Phase Two-Motor Drive

Mr. Jano Malvar, University of Vigo, Spain
Dr. ÓScar López, University of Vigo, Spain
Dr. Jesus Doval-Gandoy, University of Vigo, Spain
Dr. Alejandro G. Yepes, University of Vigo, Spain
Ms. Ana Vidal, University of Vigo, Spain
Mr. Pablo Fernández-Comesaña, University of Vigo, Spain
Dr. Francisco D. Freijedo, University of Vigo, Spain

Variable Speed Multiphase Induction Machine using Pole Phase Modulation Principle

Mr. Amrit Gautam, Tennessee Technological University, USA
Prof. Olorunfemi Ojo, Tennessee Technological University, USA

Direct Torque Control for Five-Phase Induction Motor Drives with Reduced Common-Mode Voltage

Mr. Jose Riveros, Universidad de Sevilla, Spain
Prof. Mario Duran, Universidad de Malaga, Spain
Prof. Federico Barrero, Universidad de Sevilla, Spain
Prof. Sergio Toral, Universidad de Sevilla, Spain

A Modular Approach for Current-Source Multi-Phase Inverter

Prof. Sudip Mazumder, University of Illinois, USA
Ms. Priyadharshini Sivasubramanian, University of Illinois, USA

TT06 b - Mechatronics and Robotics II
B-1502, Thursday 25th of October, 16h00

Chair/s: Mohammad Habibur Rahman, Toshiyuki Murakami

An Approach to Expansion of Workspace Motion in Master-Slave Control System

Mr. Kiyotoshi Komuta, Keio University, Japan
Prof. Toshiyuki Murakami, Keio University, Japan

Bilateral Control Method for Tendon-driven Mechanism Considering Wire Elongation

Mr. Takahiro Nozaki, Keio University, Japan
Mr. Takahiro Mizoguchi, Keio University, Japan
Prof. Kouhei Ohnishi, Keio University, Japan

A Position Tracking Control of Two Wheel Mobile Manipulator Using COG Trajectory based on Zero Dynamics

Mr. Kyohei Umemoto, Keio University, Japan
Dr. Toshiyuki Murakami, Keio University, Japan

Cartesian Trajectory Tracking of an Upper Limb Exoskeleton Robot

Dr. Mohammad Habibur Rahman, École de Technologie Superieure, Canada
Prof. Maarouf Saad, École de Technologie Superieure, Canada
Mr. Cristobal Ochoa-Luna, École de Technologie Superieure, Canada
Prof. Jean-P Kenne, École de Technologie Superieure, Canada
Dr. Philippe S. Archambault, McGill University, and Center for Interdisciplinary Research in Rehabilitation, Canada

TT12 a - Software Quality
B-1506, Thursday 25th of October, 16h00

Chair/s: Adel Khelifi, Carlos Monsalve

Software Quality Engineering in Service of IT Consumer

Prof. Witold Suryn, ÉTs, Canada

Enhancing ISO/IEC 25021 Quality Measure Elements for wider application within ISO 25000 series

Ms. Dominique St-Louis, ÉTs, Canada
Prof. Witold Suryn, ÉTs, Canada

Analysis of the ISBSG Software Repository from the ISO 9126 View of Software Product Quality

Dr. Laila Cheikhi, Université Mohammed V- Souissi, École Nationale Supérieure d'Informatique et d'Analyse des Systèmes (ENSIAS), Madinat Al Irfane BP: 713 Agdal - Rabat, Morocco
Dr. Alain Abran, Université de Québec, École de Technologie Supérieure (ETS), 1100 Notre-Dame Ouest - Montréal, Canada
Dr. Jean-Marc Desharnais, Université de Québec, École de Technologie Supérieure (ETS), 1100 Notre-Dame Ouest - Montréal, Canada

Towards Reliable Web Applications: ISO 19761

Dr. Manar Abu Talib, Zayed University, United Arab Emirates
Dr. Emilia Mendes, Zayed University, United Arab Emirates
Dr. Adel Khelifi, ALHOSN University, United Arab Emirates

Using ISO 27001 in Teaching Information Security

Dr. Manar Abu Talib, Zayed University, United Arab Emirates
Dr. Adel Khelifi, ALHOSN University, United Arab Emirates
Dr. Tahsin Ugurlu, Majan College, Oman

TT01 d - Nonlinear Systems
B-1514, Thursday 25th of October, 16h00

Chair/s: Ouassima Akhrif, Louis A. Dessaint

Inverse Control of a Class of Nonlinear Systems with Modified Generalized Prandtl-Ishlinskii Hysteresis

Ms. Sining Liu, Concordia University, Canada
Dr. Xinjun Sheng, Shanghai Jiao Tong University, China
Mr. Zhi Li, Concordia University, Canada
Prof. Chun-Yi Su, Concordia University, Canada

Finite-time Observer-based Synchronization for a class of Uncertain Chaotic Systems using Adaptive Terminal Sliding Mode Control

Mr. Jinwoo Lee, Pohang University of Science and Technology, Korea (South)
Mr. Dongyeop Kang, Pohang University of Science and Technology, Korea (South)
Prof. Sangchul Won, Pohang University of Science and Technology, Korea (South)

Different approaches of Stationary Reference Frames Saturators.

Mr. Mario Rizo, University of Alcala, Spain
Ms. Ana Rodríguez, University of Alcala, Spain
Dr. Marco Liserre, Politecnico di Bari, Italy
Prof. Francisco Javier Rodríguez, University of Alcala, Spain
Dr. Emilio Bueno, University of Alcala, Spain

Maxwell Slip based Adaptive Friction Compensation in High Precision Applications

Mr. Stephan Zschaeck, Ilmenau University of Technology, Germany

TT01 e - Control Applications II
B-1516, Thursday 25th of October, 16h00

Chair/s: Louis-A. Dessaint , Francis Okou

Effects of Sampling-Period on Pole-Locations in Yaw-Angle Control via a Deflecting Nozzle

Mr. Fuminao Tayama, University of Tsukuba, Japan
Prof. Noriyuki Hori, University of Tsukuba, Japan
Dr. C. A. Rabbath, Defence Research and Development Canada Valcartier, Canada

Design method of robust Kalman filter via l1 regression and its application for vehicle control with outliers

Mr. Yasuaki Kaneda, Tokyo Institute of Technology, Japan
Dr. Yasuharu Irizuki, Tokyo Metropolitan Industrial Technology Research Institute, Japan
Prof. Masaki Yamakita, Tokyo Institute of Technology, Japan

Magnetic Attitude Control Design for Small Satellites via Slowly-Varying Systems Theory

Dr. Mahmut Reyhanoglu, Embry-Riddle Aeronautical University, United States
Mr. Jaime Rubio Hervas, Embry-Riddle Aeronautical University, United States

Feed-Forward Excess Passivity-Based Control of Buck-Boost Converters

Ms. Likhita Gavini, Purdue School of Engineering and Technology, Indianapolis, USA
Prof. Afshin Izadian, Purdue School of Engineering and Technology, Indianapolis, USA

Partial-State Feedback Control Design for Liquid Container Transfer with Sloshing Suppression

Dr. Mahmut Reyhanoglu, Embry-Riddle Aeronautical University, USA
Mr. Jaime Rubio Hervas, Embry-Riddle Aeronautical University, USA

SS10 b - Intelligent Real-time Automation and Control Systems
B-1518, Thursday 25th of October, 16h00

Chair/s: Valeriy Vyatkin, Thomas Strasser

Agile Testing Concepts Based on Keyword-driven Testing for Industrial Automation Systems

Mr. Reinhard Hametner, Vienna University of Technology, Austria
Mr. Dietmar Winkler, Vienna University of Technology, Austria
Dr. Alois Zoitl, Vienna University of Technology, Austria

A Reconfigurable Communication Gateway for Distributed Embedded Control Systems

Mr. Filip Andrén, AIT Austrian Institute of Technology, Austria
Dr. Thomas Strasser, AIT Austrian Institute of Technology, Austria
Dr. Alois Zoitl, Vienna University of Technology, Austria
Mr. Ingo Hegny, Vienna University of Technology, Austria

Towards an IEC 61499 Compliance Profile for Smart Grids - Review and Analysis of Possibilities

Dr. Thomas Strasser, AIT Austrian Institute of Technology, Austria
Mr. Filip Andrén, AIT Austrian Institute of Technology, Austria
Prof. Valeriy Vyatkin, The University of Auckland, New Zealand (Aotearoa)
Mrs. Gulnara Zhabelova, The University of Auckland, New Zealand (Aotearoa)
Mr. Chen-Wei Yang, The University of Auckland, New Zealand (Aotearoa)

Feasibility of EMG-Based ANN Controller for a Real-Time Virtual Reality Simulation

Mr. Anbin Xiong, the State Key Laboratory of Robotics, Shenyang Institute of Automation (SIA), Chinese Academy of Sciences (CAS), Shenyang, Liaoning, China, China
Mr. Guangmo Lin, the State Key Laboratory of Robotics, Shenyang Institute of Automation (SIA), Chinese Academy of Sciences (CAS), Shenyang, Liaoning, China, China
Dr. Xingang Zhao, the State Key Laboratory of Robotics, Shenyang Institute of Automation (SIA), Chinese Academy of Sciences (CAS), Shenyang, Liaoning, China, China
Dr. Jianda Han, the State Key Laboratory of Robotics, Shenyang Institute of Automation (SIA), Chinese Academy of Sciences (CAS), Shenyang, Liaoning, China, China
Prof. Guangjun Liu, the Department of Aerospace Engineering, Ryerson University. Toronto, Canada, Canada

Scale-Dependent Method for Whole Arm Grasp Evaluation.

Mr. M. AbdeEtedal, Amirkabir University of Technology, Iran
Prof. H. A. Talebi, Amirkabir University of Technology, Iran
Prof. F. Abdollahi, Amirkabir University of Technology, Iran

Welcome Reception
Pavilion A, Main Hall, Thursday 25th of October, 18h00

Friday 26th of October

TU 4 - Motion Control for Human-friendly Mechatronic Systems
A-1150, Friday 26th of October, 08h00

Lecturer/s: Sehoon Oh, Makoto Iwasaki, Toshiaki Tsuji and Hiroshi Fujimoto

TU 5 - Multilevel Converters: present and future
A-1160, Friday 26th of October, 08h00

Lecturer/s: Leopoldo G. Franquelo, José I. León, University of Seville, Spain, Samir Kouro, Marcelo Pérez, UTFSM, Chile

TT07 g - Digital Control of Power Electronics II
A-1170, Friday 26th of October, 08h00

Chair/s: Subrata Banerjee, Mishima Tomokazu

Sliding Mode Control of a Power Factor Corrected Converter for Plug-In Hybrid Electric Vehicles

Dr. Woonki Na, Bradley University, United States
Ms. Renee Kohl, ComEd, United States
Dr. Weider Chung, Itri, Taiwan

A Sliding-Mode Control Scheme for LLC Resonant DC/DC Converter with Fast Transient Response

Prof. Hao Ma, Zhejiang University, China
Mr. Qinwei Liu, Zhejiang University, China
Mr. Jin Guo, Zhejiang University, China

Enhanced Average Current-Mode Control for DC-DC Converters Based on an Optimized Fuzzy Logic Controller

Mr. Kumars Rouzbehi, Technical University of Catalonia, Spain
Mr. Arash Miranian, University of Tehran, Iran
Mr. Costantino Citro, Technical University of Catalonia, Spain
Dr. Alvaro Luna, Technical University of Catalonia, Spain
Prof. Pedro Rodriguez, Technical University of Catalonia, Spain

A Digital Feedback Clamped Synthetic Ripple Based Hysteretic Modulator for Optimal Battery Charging

Mr. Rajeev Kumar Singh, Indian Institute of Technology Kanpur, India
Dr. Santanu Mishra, Indian Institute of Technology Kanpur, India

Research on unbalance load current compensation using cascaded STATCOM with star configuration

Prof. Wenhua Liu, Tsinghua University, China
Mrs. Xianghua Zhao, Tsinghua University, China

SS43 a - New Trends in Converter Topologies and Control Methods for Active Power Distribution Grids I
A-1242, Friday 26th of October, 08h00

Chair/s: Dmitri Vinnikov, Antonio Moreno-Muñoz

Soft-Switching Techniques for MV Isolated Bidirectional DC/DC Converters in Solid State Transformers

Mr. Gabriel Ortiz, ETH Zurich, Switzerland
Dr. Bortis Dominik, ETH Zurich, Switzerland
Prof. Johann Walter Kolar, ETH Zurich, Switzerland
Dr. Oscar Apeldoorn, ABB Switzerland AG, Switzerland

Comparative evaluation of bidirectional buck-type PFC converter systems for interfacing residential DC distribution systems to the smart grid

Mr. Mircea F. Vancu, Swiss Federal Institute of Technology Zurich, Switzerland
Mr. Thiago B. Soeiro, Swiss Federal Institute of Technology Zurich, Switzerland
Mr. Jonas Mühlethaler, Swiss Federal Institute of Technology Zurich, Switzerland
Prof. Johann W. Kolar, Swiss Federal Institute of Technology Zurich, Switzerland
Dr. Daniel Aggeler, ABB Switzerland Ltd., Corporate Research, Switzerland

Impact of Component Losses on the Efficiency of the Bi-Directional Current Doubler Rectifier Based Isolation-Stage

Mr. Viktor Beldjajev, Tallinn Univ. of Technology, Estonia
Dr. Indrek Roasto, Tallinn Univ. of Technology, Estonia

Experimental Verification of DC/DC Converter with Full-Bridge Active Rectifier

Mr. Andrei Blinov, Researcher, Estonia
Prof. Volodymyr Ivakhno, Professor, Ukraine
Prof. Volodymyr Zamaruev, Professor, Ukraine
Dr. Dmitri Vinnikov, Principal research fellow, Estonia
Mr. Oleksandr Husev, Researcher, Ukraine

High power, grid interfacing AC-DC PWM converters with power conditioning capabilities

Dr. Daniel Wojciechowski, Gdynia Maritime University, Poland

Hybrid High-frequency-SiC and Line-frequency-Si based PEBB for MV Modular Power Converters

Dr. Marek Adamowicz, Gdansk University of Technology, Poland
Prof. Ryszard Strzelecki, Gdynia Maritime University, Poland
Prof. Zbigniew Krzeminski, Gdansk University of Technology, Poland

TT07 h - Digital Control of Power Electronics IV
A-1300, Friday 26th of October, 08h00

Chair/s: Akshay Rathore, M. Moallem

Predictive Control of a Current Source Converter Operating with Low Switching Frequency

Dr. Marco Rivera, Universidad Tecnica Federico Santa Maria, Chile
Dr. Samir Kouro, Universidad Tecnica Federico Santa Maria, Chile
Prof. Jose Rodriguez, Universidad Tecnica Federico Santa Maria, Chile
Prof. Bin Wu, Ryerson University, Canada
Prof. Jose Espinoza, Universidad de Concepcion, Chile

An Adaptive On-Time Controlled Boost LED Driver with High Dimming Ratio

Mr. Sheng Liu, Zhejiang University, China
Prof. Xiaobo Wu, Zhejiang University, China
Mr. Fenjie Yuan, Zhejiang University, China
Dr. Menglian Zhao, Zhejiang University, China

A New Control Method in Phase-Shifted Full-Bridge Converter for Reduced Power Consumption under Light Load Conditions

Mr. Duk-You Kim, Department of Electrical Engineering, KAIST, Korea (South)
Dr. Chong-Eun Kim, Samsung Electro-Mechanics, Korea (South)
Prof. Gun-Woo Moon, Department of Electrical Engineering, KAIST, Korea (South)

Control of a Boost Converter for Resistive Input Behavior in the Continuous Conduction Mode

Mr. Yaser M. Roshan, School of Engineering Science, Simon Fraser University, Canada
Mr. Mehrdad Moallem, School of Engineering Science, Simon Fraser University, Canada

A Novel Modulation Strategy Based on Two Dimensional Modulation for Balancing DC-link Capacitor Voltages of Cascaded H-Bridges Rectifier

Prof. Wang Cong, China University of Mining and Technology (Beijing), China
Dr. Zhang Guopeng, China University of Mining and Technology (Beijing), China
Prof. Cheng Hong, China University of Mining and Technology (Beijing), China
Ms. Li Yaopu, China University of Mining and Technology (Beijing), China

TT09 d - Wind Energy I
A-1302, Friday 26th of October, 08h00

Chair/s: Walter Zamboni, Handy Fortin Blanchette

Design and Analysis of Dynamic Wind Turbine Simulator for Wind Power Generation System

Mr. Jiawei Chen, Nanjing University of Aeronautics & Astronautics, China
Dr. Jie Chen, Nanjing University of Aeronautics & Astronautics, China
Prof. Chunying Gong, Nanjing University of Aeronautics & Astronautics, China
Prof. Huizhen Wang, Nanjing University of Aeronautics & Astronautics, China

LQR with Integral Action for the Control of Variable Speed Induction Generator connected to AC Grid

Dr. Ronilson Rocha, Federal University of Ouro Preto, Brazil
Dr. José L. Silvino, Federal University of Minas Gerais, Brazil
Dr. Peterson Resende, Federal University of Minas Gerais, Brazil

Nonlinear State Space Model of a Hydraulic Wind Power Transfer

Mr. Sina Hamzehlouia, Purdue School of Engineering and Technology, Indianapolis, USA
Prof. Afshin Izadian, Purdue School of Engineering and Technology, Indianapolis, USA

Benchmarking of Voltage Sag Generators

Mr. Yongheng Yang, Department of Energy Technology, Aalborg University, Denmark
Prof. Frede Blaabjerg, Department of Energy Technology, Aalborg University, Denmark
Mr. Zhixiang Zou, School of Electrical Engineering, China

Wind Turbine Grounding System Frequency-Dependent Modeling for Lightning Transient Studies

Prof. Hesam Sadeghi, UW-Milwaukee, USA
Prof. Adel Nasiri, UW-Milwaukee, USA
Mr. Reza Kazemi, Amirkabir University of Technology, Iran
Prof. R. Moini, Amirkabir University of Technology, Iran
Prof. K. Sheshyekani, Shahid Beheshti University, Iran

A Model Predictive Method for Efficient Power Ramp Rate Control of Wind Turbines

Ms. F. Doostmohammadi, Amirkabir University of Technology, Iran
Prof. Hesam Sadeghi, Amirkabir University of Technology, Iran
Prof. Adel Nasiri, UW-Milwaukee, USA
Dr. Ali Esmaili, UW-Milwaukee, USA
Mr. A. Talebi, Amirkabir University of Technology, Iran

SS40 - Predictive Control for Power Converters and Drives
A-1340, Friday 26th of October, 08h00

Chair/s: Jose Rodriguez, Carlos Bordons

Enhanced Discrete Time Model for AC Induction Machine Model Predictive Control

Dr. Pavel Vaclavek, Brno University of Technology, Czech Republic
Dr. Petr Blaha, Brno University of Technology, Czech Republic

Robust Nonlinear Predictive Control of a Permanent Magnet Synchronous Motor

Dr. Rachid Errouissi, University of New Brunswick, Canada
Prof. Mohand Ouhrouche, University of Quebec at Chicoutimi, Canada
Dr. Wen-Hua Chen, Loughborough University, United Kingdom

Geometrical Approach for a Predictive Current Controller applied to a Three-Phase Two-Level Four-Leg Inverter

Dr. Ana M. Llor, Université de Toulouse, France
Dr. Marco Rivera, Universidad Tecnica Federico Santa Maria, Chile
Prof. Maurice Fadel, Universite de Toulouse, France
Prof. Jose Rodriguez, Universidad Tecnica Federico Santa Maria, Chile
Mr. Aziz Ziani, Universite de Toulouse, France

Dead-time compensation in model predictive instantaneous-current control

Mr. Akihiro Imura, Denso Corporation, Japan
Mr. Tomoya Takahashi, Denso Corporation, Japan
Mr. Masami Fujitsuna, Denso Corporation, Japan
Prof. Tadanao Zanma, Chiba University, Japan
Prof. Shinji Doki, Nagoya University, Japan

Constrained Predictive Control of a Three-Phase Voltage Source Converters with Explicit Performance Specifications

Mr. Dae Keun Yoo, RMIT Univeristy, Australia
Prof. Liuping Wang, RMIT University, Australia

A Model Predictive Control Strategy for the Cascaded H-Bridge Multilevel Rectifier Based on Enumeration

Mr. Petros Karamanakos, National Technical University of Athens, Greece
Dr. Konstantinos Pavlou, National Technical University of Athens, Greece
Prof. Stefanos Manias, National Technical University of Athens, Greece

SS56 - Power Electronics Interfacing of Renewable Energy Sources and Adjustable Speed Drives - Modelling Reliability Issues and Operation under Grid Voltage Faults
A-1350, Friday 26th of October, 08h00

Chair/s: Frede Blaabjerg, Pedro Rodriguez

Comprehensive Study of Power Quality Criteria Generated by PV Converters and their Impacts on Distribution Transformers

Dr. Amin Hasanzadeh, The Center for Advanced Power Systems, The Florida State University,, USA
Dr. Chris S. Edrington, The Center for Advanced Power Systems, The Florida State University,, USA
Mr. Troy Bevis, The Center for Advanced Power Systems, The Florida State University,, USA

Experimental Verification of Variable Speed Wind Power Generation System Using Permanent Magnet Synchronous Generator by Wind Turbine Emulator

Mr. Sirichai Tammaruckwattana, Fukuoka Institute of Technology, Japan
Prof. Kazuhiro Ohyama, Fukuoka Institute of Technology, Japan

Thermal analysis of multi-MW two-level wind power converter

Mr. Dao Zhou, Department of Energy Technology, Aalborg University, Denmark
Prof. Frede Blaabjerg, Department of Energy Technology, Aalborg University, Denmark
Mr. Mogens Lau, Danfoss Silicon Power GmbH, Germany
Mr. Michael Tonnes, Danfoss Silicon Power GmbH, Germany

Robust Control of Grid Connected AC-DC Converter for Distributed Generation

Mr. Szymon Piasecki, Warsaw University of Technology, Poland
Dr. Marek Jasiński, Warsaw University of Technology, Poland
Mr. Grzegorz Wrona, Warsaw University of Technology, Poland
Dr. Waldemar Chmielak, Warsaw University of Technology, Poland

Short Time Power Smoothing of a Low Power Wave Energy System

Mr. Samir Hazra, North Carolina State University, USA
Dr. Subhashish Bhattacharya, North Carolina State University, USA

TT08 d - Power Systems
A-1752, Friday 26th of October, 08h00

Chair/s: Bachir Kedjar, Pramod Agrawal

Control of Shunt Custom Power Device Based on Anti-Hebbian Learning Algorithm

Mr. Sabha Raj Arya, Research Scholar, India
Prof. Bhim Singh, Professor, India
Prof. Ambrish Chandra, Professor, Canada
Prof. Kamal Al-Haddad, Professor, Canada

Control of VSC based Muti-Terminal DC System for Support to Critical Loads on the Grid side witnessing Loss of Generation

Dr. Vishal Verma, Delhi Technological University, India
Mrs. Lovely Goyal, Maharaja Agrasen Institue of Technology, Delhi, India
Prof. Bhim Singh, Indian Institute of Technology, Delhi, India

Direct Power Control Concept and Analysis for Three Phase Shunt Active Power Filter

Mr. Abdelmadjid Chaoui, University of Sétif, Algeria
Mr. Jean-Paul Gaubert, University of Poitiers, France
Mr. Abdelouahab Bouafia, University of Sétif, Algeria

Control Strategy of a Transformerless Three Phase Shunt Hybrid Power Filter using a robust PLL

Mr. Sarra Mustapha, LIAS-ENSIP Poitiers, France
Dr. Gaubert Jean-PAUL, LIAS-ENSIP Poitiers, France
Dr. Chaoui Abdelmadjid, LEPCI Univ. Setif, Algeria
Prof. Krim Fateh, LEPCI Univ. Setif, Algeria

Harmonics in HVDC Links, Part I - Sources

Dr. Mohamed H. Saied, Abu Qir Fertilizers & Chemical Industries Company (AFC), Egypt
Mr. Mohamed H. Okba, Electrical Engineering Dept., Testing, Measurement, and Protection Sect., Egyptian Electricity Transmission Co., Al Behira, Egypt
Prof. Mohamed Z. Mostafa, Faculty of Engineering, Alexandria University, Alexandria,, Egypt
Prof. Talaat M. Abdel- Moneim, Faculty of Engineering, Alexandria University, Alexandria,, Egypt

Harmonics in HVDC Links, Part II - Effects and Reduction Techniques

Dr. Mohamed H. Saied, Abu Qir Fertilizers & Chemical Industries Company (AFC), Egypt
Mr. Mohamed H. Okba, Electrical Engineering Dept., Testing, Measurement, and Protection Sect., Egyptian Electricity Transmission Co., Al Behira, Egypt
Prof. Mohamed Z. Mostafa, Faculty of Engineering, Alexandria University, Alexandria,, Egypt
Prof. Talaat M. Abdel- Moneim, Faculty of Engineering, Alexandria University, Alexandria,, Egypt

TT03 e - Fault and Diagnostic
B-0904, Friday 26th of October, 08h00

Chair/s: Gerard Capolino, Thomas Habetler

On the Effect of Accessible Neutral Point in Fault Tolerant Five Phase PMSM Drives

Mr. Ramin Salehi Arashloo, Universitat Politècnica de Catalunya, Spain
Mr. Mehdi Salehifar, Universitat Politècnica de Catalunya, Spain
Prof. Jose Luis Romeral Martinez, Universitat Politècnica de Catalunya, Spain

Active Reduction of Electrical Machines Magnetic Noise by the Compensation of Low Frequency Current Harmonics.

Mr. Pierre Pellerey, Laboratoire d'Electromécanique de Compiègne, UTC, France
Dr. Gwennael Favennec, Renault SAS, France
Dr. Vincent Lanfranchi, Laboratoire d'Electromécanique de Compiègne, UTC, France
Prof. Guy Friedrich, Laboratoire d'Electromécanique de Compiègne, UTC, France

Electrical Signature Analysis Based Online Monitoring of Drive-trains for Doubly-fed Wind Generator

Dr. Prabhakar Neti, General Electric-Global Research Center, USA
Dr. Pinjia Zhang, General Electric-Global Research Center, USA
Dr. Manoj Shah, General Electric-Global Research Center, USA
Dr. Karim Younsi, General Electric-Global Research Center, USA

A Fault Diagnosis Scheme for Three Phase Induction Motors based on Uncertainty Bounds

Mr. Mohammed Obaid Mustafa, Luleå University of Technology, Sweden
Prof. George Nikolakopoulos, Luleå University of Technology, Sweden
Prof. Thomas Gustafsson, Luleå University of Technology, Sweden

Negative Sequence Current Compensation for Stator Shorted Turn Detection in Induction Motors

Mr. Syaiful Bakhri, The Univeristy of Adelaide, Australia
Prof. Nesimi Ertugrul, The Univeristy of Adelaide, Australia
Prof. Wen Soong, The Univeristy of Adelaide, Australia

TT02 c - Electric and Plug-In Hybrid Electric Vehicles
B-0906, Friday 26th of October, 08h00

Chair/s: sheldon Williamson, Abhijit Choudhary

Outstanding Running Performance of Front-and-Rear-Wheel-Independent-Drive-Type Electric Vehicle (FRID EV) under Various Transient Running Conditions

Prof. Nobuyoshi Mutoh, Tokyo Metropolitan University, Japan
Mr. Ryutaro Miyaji, Tokyo Metropolitan University, Japan
Prof. Toru Yamaguchi, Tokyo Metropolitan University, Japan

Frequency-Separation-Based Energy Management Control Strategy of Power Flows within Electric Vehicles using Ultracapacitors

Mr. Adrian Florescu, G2ELab, Grenoble Institute of Technology, France
Prof. Seddik Bacha, G2ELab, Grenoble Institute of Technology, France
Dr. Iulian Munteanu, G2ELab, Grenoble Institute of Technology, France
Dr. Antoneta Iuliana Bratcu, Gipsa-lab, Grenoble Institute of Technology, France

Driving Range Extension by Series Chopper Power Train of EV with Optimized dc Voltage Profile

Mr. Masashi Takeda, Yokohama National University, Japan
Dr. Naoki Motoi, Yokohama National University, Japan
Dr. Giuseppe Guidi, Yokohama National University, Japan
Dr. Yukinori Tsuruta, Yokohama National University, Japan
Prof. Atsuo Kawamura, Yokohama National University, Japan

Switched Capacitor with Chain Structure for Cell-Balancing of Lithium-ion Batteries

Mr. Moon-Young Kim, Korea Advanced Institute of Science and Technology (KAIST), Korea (South)
Mr. Chol-Ho Kim, Korea Advanced Institute of Science and Technology (KAIST), Korea (South)
Mr. Jun-Ho Kim, Korea Advanced Institute of Science and Technology (KAIST), Korea (South)
Mr. Duk-You Kim, Korea Advanced Institute of Science and Technology (KAIST), Korea (South)
Prof. Gun-Woo Moon, Korea Advanced Institute of Science and Technology (KAIST), Korea (South)

Evaluation and Comparison of a Two-level and a Multilevel Inverter for an EV using a Modulized Battery Topology

Mr. Oskar Josefsson, Chalmers University of Technology, Sweden
Prof. Torbjörn Thiringer, Chalmers University of Technology, Sweden
Dr. Sonja Lundmark, Chalmers University of Technology, Sweden
Dr. Hector Zelaya, Chalmers University of Technology, Sweden

A Contactless Power Transfer - Supercapacitor Based System for EV Application

Mr. Swagat Chopra, TU Delft, Netherlands
Mr. Venugopal Prasanth, TU Delft, Netherlands
Mr. Brahim El Mansouri, TU Delft, Netherlands
Dr. Pavol Bauer, TU Delft, Netherlands

SS16 a - Electric Machines and Electric Vehicles
B-0908, Friday 26th of October, 08h00

Chair/s: K.T. Chau, Wenxiang Zhao

A New Tubular Fault-Tolerant Permanent-Magnet Motor for Active Vehicle Suspension

Dr. Mei Kang, Jiangsu university, China
Dr. Jinhua Ji, Jiangsu university, China
Prof. Guohai Liu, Jiangsu university, China
Prof. Wenxiang Zhao, Jiangsu university, China

Design of a High Performance Ferrite Magnet-Assisted Synchronous Reluctance Motor for an Electric Vehicle

Mr. Milind Paradkar, Universitaet Paderborn, Germany
Prof. Joachim Boecker, Universitaet Paderborn, Germany

A Dual-memory Permanent Magnet Brushless Machine for Automotive Integrated Starter-Generator Application

Mr. Wenlong Li, The University of Hong Kong, Hong Kong
Mr. Christopher H.T. Lee, The University of Hong Kong, Hong Kong
Dr. Chunhua Liu, The University of Hong Kong, Hong Kong

One New Model Based Predictive Torque Control Algorithm for Doubly Salient Permanent Magnet Synchronous Machines

Dr. Wei Xu, RMIT University, Australia
Mr. Wenwu Yang, Electricity Power Bureau, Deyang, Sichuan, China
Prof. Xinghuo Yu, RMIT University, Australia
Mr. Jinwei He, University of Alberta, Canada

Comparison of Chaotic PWM Algorithms for Electric Vehicle Motor Drives

Mr. Zhen Zhang, The University of Hong Kong, Hong Kong
Dr. T. W. Ching, University of Macau, Macau
Dr. Chunhua Liu, The University of Hong Kong, Hong Kong
Mr. Christopher H. T. Lee, The University of Hong Kong, Hong Kong

Static Characteristic of a Novel Stator Surface-Mounted Permanent Magnet Machine for Brushless DC Drives

Ms. Zhang Yilian, School of Electrical Engineering, Southeast University, China
Dr. Hua Wei, School of Electrical Engineering, Southeast University, China
Mr. Zhang Gan, School of Electrical Engineering, Southeast University, China
Prof. Cheng Ming, School of Electrical Engineering, Southeast University, China
Ms. Fu Xiaofan, School of Electrical Engineering, Southeast University, China

SS62 - Petri Nets Fifty Years After: Applications and Theory for Industrial Electronics
B-1502, Friday 26th of October, 08h00

Chair/s: Luis Gomes, Paulo Leitão

Web Based IOPT Petri Net Editor with an Extensible Plug-in Architecture to Support Generic Net Operations

Mr. Fernando Pereira, ISEL, FCT/UNL, Uninova, Portugal
Mr. Filipe Moutinho, FCT/UNL, Uninova, Portugal
Mr. José Ribeiro, ISEL, FCT/UNL, Uninova, Portugal
Prof. Luis Gomes, FCT/UNL, Uninova, Portugal

Finding best urban routes based on analyses of High Level and IOPT Petri net models

Mr. Henrique Dezani, Universidade Estadual de Campinas, Brazil
Prof. Luis Gomes, Universidade Nova de Lisboa, Portugal
Prof. Furio Damiani, Universidade Estadual de Campinas, Brazil
Prof. Norian Marranghello, Universidade Estadual Paulista, Brazil

On the Verification of Non-autonomous Petri Net Models Using Autonomous Petri Net Tools

Prof. Joao Paulo Barros, Instituto Politecnico de Beja, Portugal
Prof. Luis Gomes, Universidade Nova de Lisboa, Portugal
Prof. Aniko Costa, Universidade Nova de Lisboa, Portugal

Service-oriented SCADA and MES Supporting Petri nets based Orchestrated Automation Systems

Prof. Armando W. Colombo, University of Applied Sciences Emden/Leer, Germany
Dr. J. Marco Mendes, Schneider Electric Automation GmbH, Germany
Prof. Paulo Leitao, Polytechnic Institute of Braganca, Portugal
Dr. Stamatis Karnouskos, SAP Research, Germany

Model composition by reusing Petri net based modules

Prof. Aniko Costa, Universidade Nova de Lisboa, Portugal
Prof. Luis Gomes, Universidade Nova de Lisboa, Portugal
Prof. Joao Paulo Barros, Instituto Politecnico de Beja, Portugal

Extending a net splitting operation for decomposition of high-level Petri nets

Mr. Filipe Moutinho, Universidade Nova de Lisboa, Portugal
Prof. Luís Gomes, Universidade Nova de Lisboa, Portugal

SS29 a - Towards a more Efficient Lighting I
B-1504, Friday 26th of October, 08h00

Chair/s: Tiago Bandeira Marchesan, Javier Ribas

A Simple Single Switch Electronic Ballast for Compact Fluorescent Lamps with Passive Power Factor Correction (PFC) and Soft Switching Capability

Dr. John Lam, Queen's University, Canada
Prof. Praveen K. Jain, Queen's University, Canada

A Low Cost High Power Factor Primary Regulated Offline LED Driver

Mr. Jianwen Shao, STMicroelectronics, United States
Mr. Thomas Stamm, STMicroelectronics, United States

A Single-Stage High Power-Factor Converter for Street Lighting System Based on LEDs Supplied by Mains/Battery

Mr. Rafael Adaime Pinto, Federal University of Santa Maria, Brazil
Ms. Priscila Ertmann Bolzan, Federal University of Santa Maria, Brazil
Dr. Ricardo Nederson do Prado, Federal University of Santa Maria, Brazil

Single-Stage SEPIC-Buck Converter for LED Lighting with Reduced Storage Capacitor

Mr. Marcelo R. Cosetin, Universidade Federal de Santa Maria, Brazil
Mr. Paulo C. V. Luz, Universidade Federal de Santa Maria, Brazil
Prof. Marcelo F. da Silva, Universidade Federal de Santa Maria, Brazil
Dr. Fábio E. Bisogno, Universidade Federal de Santa Maria, Brazil
Dr. José M. A. Alvarez, Universidad de Oviedo, Spain
Dr. Ricardo N. do Prado, Universidade Federal de Santa Maria, Brazil

Integrated Sepic-Buck-Boost Converter as an Off-line LED Driver without Electrolytic Capacitors

Mr. Pedro Almeida, Federal University of Juiz de Fora, Brazil
Mr. Guilherme Soares, Federal University of Juiz de Fora, Brazil
Prof. Henrique Braga, Federal University of Juiz de Fora, Brazil
Prof. Danilo Pinto, Federal University of Juiz de Fora, Brazil

A Single-Stage High Efficiency Long-Life Off-line LED Driver Based on the DCM Cuk Converter

Mr. Guilherme Soares, Federal University of Juiz de Fora, Brazil
Mr. Pedro Almeida, Federal University of Juiz de Fora, Brazil
Mr. Henrique Braga, Federal University of Juiz de Fora, Brazil
Mr. Danilo Pinto, Federal University of Juiz de Fora, Brazil

SS13 a - Advanced Signal Processing Techniques for Fault Detection and Diagnosis of Electromechanical Systems I
B-1506, Friday 26th of October, 08h00

Chair/s: Mohamed Benbouzid, Jose A. Antonino-Daviu

Induction Machine Fault Detection Enhancement Using a Stator Current High Resolution Spectrum

Mr. El Houssin El Bouchikhi, Lbms, France
Dr. Vincent Choqueuse, Lbms, France
Prof. Mohamed Benbouzid, Lbms, France
Dr. Jean Frederic Charpentier, IRENav, France

On the use of Stationary Wavelet Packet Transform and Multiclass Wavelet SVM for Broken Rotor Bar detection

Mr. Hassen Keskes, Research laboratory: Matériaux, Mesures et Applications (MMA), University of Carthage, Tunisia
Prof. Ahmed Braham, Research laboratory: Matériaux, Mesures et Applications (MMA) - Institut National des Sciences Appliquées et de Technologie (INSAT), University of Carthage, Tunisia
Prof. Zied Lachiri, Research laboratory: LSTS-SITI, Ecole National d'Ingénieurs de Tunis (ENIT), Tunisia

SVM based diagnosis of inverter fed induction machine drive : a new challenge

Dr. Claude Delpha, Laboratoire des Signaux et Systèmes (CNRS - Supelec - Univ. Paris Sud), France
Mr. Hao Chen, Laboratoire de Genie Electrique de Paris (CNRS - Supelec - Univ. Paris Sud et Univ. Paris 6), France
Prof. Demba Diallo, Laboratoire de Genie Electrique de Paris (CNRS - Supelec - Univ. Paris Sud et Univ. Paris 6), France

Accurate Bearing Faults Classification based on Statistical-Time Features, Curvilinear Component Analysis and Neural Networks

Mr. Miguel Delgado, Technical University of Catalonia (UPC) - MCIA research center, Spain
Dr. Giansalvo Cirrincione, University of Picardie Jules Verne (UPJV) - LTI research center, France
Dr. Antoni García, Technical University of Catalonia (UPC) - MCIA research center, Spain
Dr. Juan Antonio Ortega, Technical University of Catalonia (UPC) - MCIA research center, Spain
Dr. Humberto Henao, University of Picardie Jules Verne (UPJV) - LTI research center, France

Electric Machines Diagnosis Techniques via Transient Current Analysis

Mr. Joan Pons-Llinares, Universitat Politecnica De Valencia, Spain
Mr. Vicente Climente-Alarcón, Universitat Politecnica De Valencia, Spain
Mr. Francisco VedreÑO-Santos, Universitat Politecnica De Valencia, Spain
Prof. Jose A. Antonino-Daviu, Universitat Politecnica De Valencia, Spain
Prof. Martin Riera-Guasp, Universitat Politecnica De Valencia, Spain

Bearing fault Detection in Synchronous Machine based on the Statistical Analysis of Stator Current

Dr. Antoine Picot, Laplace - Université de Toulouse, France
Mr. Ziad Obeid, Laplace - Université de Toulouse, France
Mr. Sylvain Poignant, SAFRAN-Technofan Toulouse, France
Dr. Jérémi Régnier, Laplace - Université de Toulouse, France
Mr. Olivier Darnis, SAFRAN-Technofan Toulouse, France
Prof. Pascal Maussion, Laplace - Université de Toulouse, France

TT01 f - Estimation & Identification
B-1514, Friday 26th of October, 08h00

Chair/s: Peter Palensky, Eric Monmasson

Dual EKF Estimator for Fault Detection and Isolation in Heating Ventilation and Air Conditioning Systems

Dr. Nicolae Tudoroiu, John Abbott College, Canada
Prof. Mohammed Zaheeruddin, Concordia University from Montreal, Canada

An Unscented Kalman Filter Approach for the Plant-Model Mismatch Reduction in HVAC System Model Based Control

Mr. Tarik Ferhatbegovic, Austrian Institute of Technology, Austria
Dr. Gerhard Zucker, Austrian Institute of Technology, Austria
Prof. Peter Palensky, Austrian Institute of Technology, Austria

A Modified Cross-Correlation Method for the Identification of Systems with Large Bandwidth

Mr. Jean Sawma, Saint-Joseph University, Lebanon
Dr. Flavia Khatounian, Saint-Joseph University, Lebanon
Prof. Eric Monmasson, Universite de Cergy, France

Dynamic Friction Modeling and Identification for High Precision Mechatronic Systems

Mr. Steffen Buechner, Ilmenau University of Technology, Germany

Predictive Rollover Detection in Wheeled Vehicles

Mr. Martin Rodriguez, IPICyT, Mexico
Prof. Ilse Cervantes, IPICyT, Mexico

Monotonicity of Fixation Probability of Evolutionary Dynamics on Complex Networks

Dr. Shaolin Tan, Chinese Academy of Sciences, China
Prof. Jinhu Lu, RMIT University, Australia
Prof. Xinghuo Yu, RMIT University, Australia
Prof. David Hill, The University of Sydney, Australia

TT11 b - Image Processing II
B-1516, Friday 26th of October, 08h00

Chair/s: Robert Sabourin, Aleksander Malinowski

Invariant and reduced features for Fingerprint Characterization

Mr. Balti Ala, Esstt, Tunisia
Prof. Sayadi Mounir, Esstt, Tunisia
Prof. Fnaiech Farhat, Esstt, Tunisia

New Concept for Corrosion Inspection of Urban Pipeline Networks by Digital Image Processing

Mr. Mohammadreza Motamedi, Ecole de technologie superieure, Canada
Mr. Farrokh Faramarzi, Kingston University, United Kingdom
Dr. Olga Duran, Kingston University, United Kingdom

Wavelet Transform and Principal Component Analysis based Clutter Reduction for Through Wall Imaging

Mr. Muhammad Mohsin Riaz, National University of Sciences and Technology, Pakistan
Dr. Abdul Ghafoor, National University of Sciences and Technology, Pakistan

LazerLab: a 3D Scanner/Tracer Laser System with Stereoscopic Vision

Dr. Renaud Daviot, University of Lyon - CPE Lyon, France
Ms. Anne-Claire Conneau, University of Lyon - CPE Lyon, France
Mr. Jean-Christophe Boissy, None, France

Development of a Support Vector Machine-based Navigation System for Driving a Mobile Robot Through Paths in Plantations

Mr. Danilo Samuel Jodas, Sao Paulo State University - UNESP, Brazil
Dr. Norian Marranghello, Sao Paulo State University - UNESP, Brazil
Dr. Aledir Silveira Pereira, Sao Paulo State University - UNESP, Brazil
Dr. Rodrigo Capobianco Guido, Sao Paulo State University - UNESP, Brazil

Image encryption based on convolution operation in the gyrator transform domain

Mrs. Sandra M. Daza, Universidad Popular del Cesar, Colombia
Prof. Fabio Vega Nieto, Universidad Popular del Cesar, Colombia
Dr. Cesar Orlando Torres Moreno, Universidad Popular del Cesar, Colombia
Mrs. Lorenzo Mattos Vasquez, Universidad Popular del Cesar, Colombia
Mr. Leonardo Alverto Diaz Marulanda, Universidad Popular del Cesar, Colombia
Mr. Yaileth Morales Daza, Universidad Popular del Cesar, Colombia

TT10 a - System Modeling
B-1518, Friday 26th of October, 08h00

Chair/s: Antonio Luque, Kiyoshi Ohishi

Neural Network Modeling of Cold-Gas Thrusters for a Spacecraft Formation Flying Test-bed

Dr. Hicham Chaoui, Université du Québec à Trois-Rivières, Canada
Prof. Pierre Sicard, Université du Québec à Trois-Rivières, Canada
Dr. James Lee, Canadian Space Agency, Canada
Dr. Alfred Ng, Canadian Space Agency, Canada

Modeling and Force Control of Membrane Pneumatic Actuators

Mr. Nojiri Yutaka, Doshisha University, Japan
Prof. Tsujiuchi Nobutaka, Doshisha University, Japan
Prof. Koizumi Takayuki, Doshisha University, Japan
Mr. Mizuno Tomoyuki, Doshisha University, Japan
Mr. Ichikawa Yasunori, SQUSE Inc., Japan
Mr. Shimizu Mikio, SQUSE Inc., Japan

Detection of Transverse Load Using the High Birefringence Bragg Grating and Genetic Algorithm

Dr. Maryam Etezad, Concordia University, Canada
Prof. Mojtaba Kahrizi, Concordia University, Canada
Prof. Kash Khorasani, Concordia University, Canada

Measurements of Inclination Angle and Distance of Curve Mirror Using LED Light Sources

Dr. Kento Nishibori, Gifu University, Japan
Prof. Kenji Nishibori, Daido University, Japan

Modeling and Personal Recognition of Calligraphy Task using Haptic Data

Mr. Yoshihiro Ohnishi, Keio University, Japan
Prof. Seiichiro Katsura, Keio University, Japan

WS - IEEE Standards Association (IEEE-SA) Standards Workshop for IES
B-1708, Friday 26th of October, 08h00

Lecturer/s: Victor Huang, Michael Kipness, IEEE-SA, Lisa Yacone, IEEE-SA

Workshop Objective

Provide IES members with an overview of the IEEE-SA Standards development process and procedures to ensure that good standards development practices are understood.

Who Should Attend?
TC members, Working Group Officers, and anyone interested in the IEEE-SA Standards Development Process

What You can Expect from this Workshop

A basic understanding of the IEEE-SA standards development process and the policy and procedures that drive the process

PO B - Poster and Dialogue Session
Pavilion A, Main Hall, Friday 26th of October, 10h00

Chair/s: Handy Fortin Blanchette, Canada, Luc André Gregoire, Canada

P01 New approaches to selected problems of precise speed and position control of drives

Dr. Stefan Brock, Poznan University of Technology, Poland
Prof. Krzysztof Zawirski, Poznan University of Technology, Poland

P02 Current Trends in Power Aware Design

Mr. Philip Reiner, Auburn University, USA
Mrs. Tiantian Xie, Auburn University, USA

P03 Current Trends in Industrial Control

Mr. Xing Wu, Auburn University, USA
Mr. Hao Yu, Auburn University, USA
Ms. Tiantian Xie, Auburn University, USA
Mr. Michael S. Pukish, Auburn University, USA

P04 Current Trends in In-vehicle Electrical Engineering Applications

Mrs. Parameshwaran Gnanachchelvi, Auburn University, USA
Ms. Jiao Yu, Auburn University, USA
Mr. Michael Pukish, Auburn University, USA

P05 Recent Developments in Wireless Hardware Design, Modeling, and Analysis for Industrial Applications

Mr. Michael S. Pukish, Auburn University, USA
Ms. Parameshwaran Gnanachchelvi, Auburn University, USA
Mr. Xing Wu, Auburn University, USA

P06 Latest trends in Integrating Building Automation and Smart Grids

Dr. Dietmar Bruckner, Vienna University of Technology, Austria
Dr. Jan Haase, Vienna University of Technology, Austria
Dr. Peter Palensky, Austrian Institute of Technology, Austria
Dr. Gerhard Zucker, Austrian Institute of Technology, Austria

P07 Recent Advances in Energy Harvesting Technology and Techniques

Dr. Michael C. Hamilton, Auburn University, USA

P08 Switch-Mode Power Converters for Harmonics Mitigation in Power Systems - Technology Progress

Dr. Hadi Y. Kanaan, Saint-Joseph University, Lebanon
Prof. Kamal Al-Haddad, Ecole de Technologie Supérieure, Canada
Dr. Salem Rahmani, University of Tunis, Tunisia

P09 A Comprehensive Analysis of Hybrid Active Power Filter for Power Quality Enhancement

Prof. Salem Rahmani, ISTMT Tunisia, Tunisia
Dr. Abdelhamid Hamadi, ETS Montreal, Canada
Prof. Kamal Al-Haddad, ETS Montreal, Canada

P10 Series Active Conditionners for Reliable Smart Grid: A Comprehensive Review

Mr. Alireza Javadi, Ecole de Technologie Superieure (ETS), Canada
Mr. Nicolas Geiss, Ecole de Technologie Superieure (ETS), Canada
Prof. Handy Fortin Blanchette, Ecole de Technologie Superieure (ETS), Canada
Prof. Kamal Al-Haddad, Ecole de Technologie Superieure (ETS), Canada

P11 Recent Advances in the Application of Real-Time Computational Intelligence to Industrial Electronics

Mr. Michael S. Pukish, Auburn University, USA
Mr. Philip Reiner, Auburn University, USA
Mr. Xing Wu, Auburn University, USA

P12 Detecting Partially Fallen-out Magnetic Slot Wedges in AC Machines Based on Electrical Quantities only

Mr. Goran Stojcic, Department for Energy Systems and Electrical Drives, Vienna University of Technology, Austria
Mr. Robert Magnet, Department for Energy Systems and Electrical Drives, Vienna University of Technology, Austria
Prof. Gojko Joksimovic, Faculty of Electrical Engineering, University of Montenegro Podgorica, Montenegro
Dr. Mario Vasak, Faculty of Electrical Engineering and Computing, University of Zagreb, Croatia (Hrvatska)
Prof. Nedjeljko Peric, Faculty of Electrical Engineering and Computing, University of Zagreb, Croatia (Hrvatska)
Prof. Thomas Wolbank, Department for Energy Systems and Electrical Drives, Vienna University of Technology, Austria

P13 Detecting Bearing Defects under High Noise Levels: A Classifier Fusion Approach

Ms. Luana Batista, Ets, Canada
Mr. Bechir Badri, Ets, Canada
Prof. Robert Sabourin, Ets, Canada
Prof. Marc Thomas, Ets, Canada

P14 Data-driven Quality Related Prediction and Monitoring

Dr. Shen Yin, Harbin Institute of Technology, China

P15 SMO-Based Fault Tolerant Control Design for Three Phase Induction Motors

Mr. Hamed Rezaei, Sahand Universty of Technology, Iran
Dr. Mohammad javad Khosrowjerdi, Sahand Universty of Technology, Iran
Mr. Ali Saadat, Sahand Universty of Technology, Iran

P16 Robust Fault-Tolerant Controller Design

Prof. Rajamani Doraiswami, University of New Brunswick, Canada
Dr. Lahouari Cheded, King Fahd University of Petroleum & Minerals, Saudi Arabia

P17 Order reduction using mixed method

Dr. Satakshi Singh, IITRoorkee, India
Prof. Shaktidev Mukherjee, IITRoorkee, India
Prof. R.C Mittal, IITRoorkee, India

P18 A Comparison between Disturbance Observer-Based and Model-Based Control of Needle in Percutaneous Applications

Dr. Arash Maghsoudi, sharif University of Technology, Iran
Dr. Mehran Jahed, sharif University of Technology, Iran

P19 Position Control of PMSM using Jerk-Limited Trajectory for Torque Ripple Reduction in Robot Applications

Mr. Soo-Cheol Shin, Sungkyunkwan University, Korea (South)
Mr. Chi-Hwan Choi, Sungkyunkwan University, Korea (South)
Dr. Jang-Hyoun Youm, Samsung Electronics, Korea (South)
Prof. Taeck-Kie Lee, Hankyong University, Korea (South)
Prof. Chung-Yuen Won, Sungkyunkwan University, Korea (South)

P20 Computing Optimum Coefficients of PID Controller with Genetic Algorithm

Dr. Gholamreza Farahani, Iranian Research Organization for Science and Technology, Iran

P21 Stability of a telerobotic manipulation system with proximity-based haptic feedback

Dr. Riccardo Antonello, University of Padova, Italy
Dr. Omar Andres Daud, University of Padova, Italy
Prof. Roberto Oboe, University of Padova, Italy
Dr. Enrico Grisan, University of Padova, Italy

P22 Differential Quantization of Spectral Parameters for CELP Based Coders in Packet Networks

Dr. Fatiha Merazka, University of Science & Technology Houari Boumediene, Algeria

P23 Optical Flow-Based Motion Estimation in Ultrasonic Images for Force Estimation in Percutaneous Procedures: Theory and Experimental Validation

Mr. Arash Maghsoudi, sharif University of Technology, Iran
Dr. Mehran Jahed, sharif University of Technology, Iran

P24 Lightning Unit Control & Design for Higspeed Acquisition and Light Microscopy

Dr. Dusan Koniar, University of Zilina, Slovak Republic
Dr. Libor Hargas, University of Zilina, Slovak Republic
Mr. Stanislav Stofan, University of Zilina, Slovak Republic
Mr. Marek Paskala, University of Zilina, Slovak Republic

P25 An Adaptive Control Scheme for Articulatory Synthesis of Plosive-Vowel Sequences

Mr. Guangpu Huang, Nanyang Technological University, Singapore
Prof. Meng Joo Er, Nanyang Technological University, Singapore

P26 An Enhanced GA Technique for System Optimization

Dr. Dezhi Li, University of Waterloo, Canada
Prof. Wilson Wang, Lakehead University, Canada
Prof. Fathy Ismail, University of Waterloo, Canada

P27 Undervoltage/Overcurrent Coordination in Smart Grids

Dr. Juan Gomez, Rio Cuarto National University, Argentina
Dr. Medhat Morcos, Kansas State University, USA

P28 Dynamic Performance of a STATCOM under Grid Disturbances for Two Different Linear Controllers

Mr. Jorge Valero Rodríguez, Carlos III University of Madrid, Spain
Prof. Emilio Bueno Peña, University of Alcalá, Spain
Prof. Pablo Ledesma Larrea, Carlos III University of Madrid, Spain
Prof. Hortensia Amaris Duarte, Carlos III University of Madrid, Spain
Ms. Ana Rodriguez Monter, University of Alcalá, Spain

P29 High Step-up DC-DC Converter with Coupled Inductor and Reduced Switch Voltage Stress

Dr. Boris Axelrod, Holon Institute of Technology, Israel
Dr. Yefim Berkovich, Holon Institute of Technology, Israel

P30 Framework for Investigating the Impact of PHEV Charging on Power Distribution System and Transportation Network

Mr. Wencong Su, North Carolina State University, USA
Dr. Kuilin Zhang, Argonne National Laboratory, USA
Dr. Jianhui Wang, Argonne National Laboratory, USA
Dr. Mo-Yuen Chow, North Carolina State University, USA

P31 Power System Flicker Analysis, Modeling and Prototype Implementation

Dr. Vasudeo Virulkar, Govt. College of Engineering, Amravati, India
Dr. Mohan Aware, Visvesvaraya National Institute of Technology, Nagpur, India

P32 Modeling of permanent magnet synchronous machine with fractional slot windings

Mr. Maxim Bogomolov, Eindhoven University of Technology, Netherlands
Dr. Christian Kral, Austrian Institute of Technology, Austria
Mr. Anton Haumer, Austrian Institute of Technology, Austria
Prof. Elena Lomonova, Eindhoven University of Technology, Netherlands

TT07 i - Digital Control of Power Electronics V
A-1170, Friday 26th of October, 10h30

Chair/s: Y. S. Lai, Marian Kazimierczuk

A Novel Three-Phase Software Phase-Locked Loop Based on Frequency-Locked Loop and Initial Phase Angle Detection Phase-Locked Loop

Mr. Liang Wang, Tsinghua University, China
Prof. Qirong Jiang, Tsinghua University, China
Mr. Lucheng Hong, Tsinghua University, China

Novel On-Line Maximum Duty Point Tracking Technique to Improving Server Power Efficiency Meeting 80Plus Gold Code

Prof. Yen-Shin Lai, Center for Power Electronics, National Taipei University of Technology, Taiwan
Mr. Zih-Jie Su, Center for Power Electronics, National Taipei University of Technology, Taiwan

Control of a 1 kW Switched Reluctance Generator using Triac

Ms. Sylvia Leonor Mendez Prince, University of Zaragoza, Spain
Dr. Abelardo Martínez Iturbe, University of Zaragoza, Spain
Mr. Carlos Eduardo Montaño Salcedo, University of Zaragoza, Spain
Mr. Willian Millan, University of Zaragoza, Spain
Prof. Estanislao Oyarbide, University of Zaragoza, Spain
Prof. Francisco Jose Perez-Cebolla, University of Zaragoza, Spain

Transient-Free Method of Indirect Current Control for Railway Traction Four-Quadrant Converters

Dr. Liqun He, State Key Laboratory of Advanced Electromagnetic Engineering and Technology (Huazhong University of Science and Technology), China
Prof. Jian Xiong, State Key Laboratory of Advanced Electromagnetic Engineering and Technology (Huazhong University of Science and Technology), China
Dr. Hui Ouyang, State Key Laboratory of Advanced Electromagnetic Engineering and Technology (Huazhong University of Science and Technology), China
Mr. Pengju Zhang, State Key Laboratory of Advanced Electromagnetic Engineering and Technology (Huazhong University of Science and Technology), China
Prof. Kai Zhang, State Key Laboratory of Advanced Electromagnetic Engineering and Technology (Huazhong University of Science and Technology), China

Audio-susceptibility of the inner-loop of peak current-mode controlled PWM dc-dc buck converter in CCM

Dr. Nisha Kondrath, Department of Electrical and Computer Engineering, Villanova University, Villanova, PA 19085, USA
Dr. Marian Kazimierczuk, Department of Electrical Engineering, Dayton, OH 45435, USA

Static Power Converter Synchronization and Control under Varying Frequency Conditions

Mr. Jaime Rohten, Concepcion University, Chile
Prof. Jose Espinoza, Concepcion University, Chile
Mr. Felipe Villarroel, Concepcion University, Chile
Dr. Marcelo Perez, Federico Santa Maria University, Chile
Dr. Javier Munoz, Talca University, Chile
Mr. Pedro Melin, Concepcion University, Chile
Mr. Eduardo Espinosa, Concepción University, Chile

SS43 b - New Trends in Converter Topologies and Control Methods for Active Power Distribution Grids II
A-1242, Friday 26th of October, 10h30

Chair/s: Daniel Wojciechowski, Indrek Roasto

Transient Response Assessment of Vector PI Current Controllers in Renewable Energy Applications

Ms. Ana Vidal, University of Vigo, Spain
Dr. Francisco D. Freijedo, Gamesa Innovation and Technology, Spain
Dr. Alejandro G. Yepes, University of Vigo, Spain
Mr. Jano Malvar, University of Vigo, Spain
Dr. Oscar Lopez, University of Vigo, Spain
Dr. Jesus Doval-Gandoy, University of Vigo, Spain

The Application of S-Transform in Fault Detection and Diagnosis of Grid-Connected Power Inverters

Prof. João Martins, Fct/Unl, Portugal
Mr. Rui Lopes, Fct/Unl, Portugal
Prof. Vitor Pires, Ests/Ips, Portugal
Prof. Armando Pires, Ests/Ips, Portugal
Prof. Celson Lima, Icg/Ufopa, Brazil

Three-phase Single Stage Photovoltaic Inverter with Active Filtering Capabilities

Mr. Víctor Miñambres-Marcos, Power Electrical and Electronic Systems, University of Extremadura, Spain
Dr. Enrique Romero-Cadaval, Power Electrical and Electronic Systems, University of Extremadura, Spain
Mr. Miguel Ángel Guerrero-Martínez, Power Electrical and Electronic Systems, University of Extremadura, Spain
Dr. María Isabel Milanés-Montero, Power Electrical and Electronic Systems, University of Extremadura, Spain

Comparison of Current Source and Voltage Source Shunt Active Power Filters for Harmonic Compensation and Reactive Power Control

Dr. Gabriel Pinto, University of Minho, Portugal
Mr. Bruno Exposto, University of Minho, Portugal
Mr. Vitor Monteiro, University of Minho, Portugal
Prof. Luis Monteiro, Rio de Janeiro State University, Brazil
Prof. Carlos Couto, University of Minho, Portugal
Prof. João Afonso, University of Minho, Portugal

Comparison of Two Power Flow Control Strategies for Photovoltaic Inverters

Mr. Carlos Roncero-Clemente, Power Electrical and Electronic System (PE&ES) Research Group. University of Extremadura, Spain
Prof. Enrique Romero-Cadaval, Power Electrical and Electronic System (PE&ES) Research Group. University of Extremadura, Spain
Prof. Pedro Roncero Sánchez-Elipe, University of Castilla la Mancha, Spain
Dr. Eva González-Romera, Power Electrical and Electronic System (PE&ES) Research Group. University of Extremadura, Spain

Dimensioning of Electricity Storage according to Small Wind Turbine Power Generation and Household Load Patterns

Dr. Argo Rosin, Tallinn University of Technology, Estonia
Dr. Ivo Palu, Tallinn University of Technology, Estonia
Mrs. Kai Rosin, Tallinn University of Technology, Estonia
Mr. Aivar Auväärt, Tallinn University of Technology, Estonia

TT07 j - Multilevel Converters II
A-1300, Friday 26th of October, 10h30

Chair/s: K. Gopakumar, J. Rodriguez

A Novel Neutral Point Balancing Technique for SVPWM Switched 3-Level Inverter for AC Drives.

Mr. Koteswara Rao Alla, Bhel, India
Mr. Krishna Reddy Cpv, Bhel, India
Mr. Prashant Jain, Bhel, India
Mr. Balawanth Reddy, Bhel, India
Mr. Eswar Rao, Bhel, India
Dr. Muni Bp, Bhel, India

Research on Constant-Frequency Hysteresis Current Control in Differential three-level Grid-Connected Inverter

Ms. Feng Ma, Nanjing university of science and technology, China
Mr. Lei Li, Nanjing University of Science and Technology, China

Fault Diagnosis and Tolerance in Three-Level Neutral-Point-Clamped Rectifiers

Mr. Luis Caseiro, University of Coimbra, Portugal
Prof. André Mendes, University of Coimbra, Portugal
Prof. Aderito Alcaso, Polytechnic Institute of Guarda, Portugal

Performance of Inverter Fed Induction Motor under Open Circuit DC link Capacitor

Mr. Hadeed Sher, King Saud University, Riyadh, Saudi Arabia
Prof. Khaled Addoweesh, King Saud University,Riyadh, Saudi Arabia
Dr. Yasin Khan, King Saud University,Riyadh, Saudi Arabia
Mr. Abdul Rahman Kashif, University of Engineering and Technology, Lahore, Pakistan

A Current-Sharing Method Based on Networked Control for Three-Phase Parallel Inverter

Dr. Yao Zhang, Zhejiang University, China
Prof. Hao Ma, Zhejiang University, China
Mr. Guoqiang Zhao, Zhejiang University, China
Mr. Jin Guo, Zhejiang University, China

Control of a Three-phase Four-wire Inverter

Dr. Liping Zheng, Calnetix Technologies LLC, USA
Mr. Dong Le, Calnetix Technologies LLC, USA

TT09 e - Photovoltaics Systems I
A-1302, Friday 26th of October, 10h30

Chair/s: Afshin Izadian, Gerry Moschopoulos

Artificial Neural Network Based Maximum Power Point Tracking Technique for PV Systems

Ms. Lina Elobaid, Arab Academy For Science, Technology And Maritime Transport (Aastmt), Egypt
Dr. Ahmed Abdelsalam, Arab Academy For Science, Technology And Maritime Transport (Aastmt), Egypt
Prof. Ezz Eldin Zakzouk, Arab Academy For Science, Technology And Maritime Transport (Aastmt), Egypt

Voltage and Frequency Controller for a Stand Alone PV System with Battery Storage Element

Mr. Ali Chikh, Ets, Canada
Prof. Ambrish Chandra, Ets, Canada

An adaptive control developed for multiphase converters based on look-up tables and applied to photovoltaic conversion systems

Mrs. Aloña Berasategi, Total Sa, France
Mr. Carlos Paragua, Laas-Cnrs, France
Prof. Bruno Estibals, Laas-Cnrs, France
Mr. Youssef EL Basri, Total Sa, France
Mr. Lionel Seguier, Laas-Cnrs, France
Dr. Adrien Ramond, Total Sa, France
Dr. Carlos Carrejo, Total Sa, France
Prof. Corinne Alonso, Laas-Cnrs, France

PV Based Stand Alone Single Phase Power Generating Unit

Mr. Ritwik Chattopadhyay, Department of Electrical Engineering, Indian Institute of Technology Bombay, India
Prof. Kishore Chatterjee, Department of Electrical Engineering, Indian Institute of Technology Bombay, India

An Original Controller Design for a Grid Connected PV System

Dr. Mohamed Trabelsi, Qatar University, Qatar
Mr. Khaled Ahmed Ghazi, Qatar University, Qatar
Dr. Nacer Al-emadi, Qatar University, Qatar
Prof. Lazhar Ben-brahim, Qatar University, Qatar

Optimization of Photovoltaic Energy System: A case study of Hanoi city

Mr. Xuan-Linh Dang, SATIE ENS Cachan, France
Dr. Emmanuel Hoang, SATIE ENS Cachan, France
Prof. Hamid Ben Ahmed, SATIE ENS Cachan, France
Dr. Marc Petit, Supelec, France
Dr. Hong-Thinh Pham, Hanoi University of Technology, Viet Nam

TT07 k - AC/AC Converters I
A-1340, Friday 26th of October, 10h30

Chair/s: Sanjib K. Panda, J. Duarte

Performance Analysis for High-Frequency link AC-AC Contact-less Power Supply System in Parking Tower

Mr. Shingo Kawano, Yamaguchi University, Japan
Prof. Eiji Hiraki, Yamaguchi University, Japan
Prof. Toshihiko Tanaka, Yamaguchi University, Japan
Dr. Masayuki Okamoto, Ube National College of Technology, Japan

Harmonics in Opposed Current Converters

Mr. J.M. Schellekens, Eindhoven University of Technology, Netherlands
Dr. J.L. Duarte, Eindhoven University of Technology, Netherlands
Dr. H. Huisman, Eindhoven University of Technology, Netherlands
Mr. M.A.M Hendrix, Eindhoven University of Technology, Netherlands

Volume Reduction of Opposed Current Converters through Coupling of Inductors and Interleaved Switching

Mr. J.M. Schellekens, Eindhoven University of Technology, Netherlands
Dr. J.L. Duarte, Eindhoven University of Technology, Netherlands
Dr. H. Huisman, Eindhoven University of Technology, Netherlands
Mr. M.A.M. Hendrix, Eindhoven University of Technology, Netherlands

Parallel Connection of Two Single-Phase Ac-Dc-Ac Three-Leg Converter with Interleaved Technique

Prof. Nady Rocha, Ufpb, Brazil
Prof. Cursino B. Jacobina, Ufcg, Brazil
Prof. Euzeli C. dos Santos Jr., Ufcg, Brazil
Mr. Rodolpho M. de B. Cavalcanti, Ufcg, Brazil

Analysis of Dual Active Bridge based Power Electronic Transformer as a Three-phase Inverter

Mr. M A Moonem, University of Texas at San Antonio, USA
Dr. Hariharan Krishnaswami, University of Texas at San Antonio, USA

Clamping Voltage Control Strategy for the Actively Clamped Resonant DC-Link Inverter

Mr. Qinye Chen, College of Electrical Engineering, Zhejiang University, China
Prof. Dehua Zhang, College of Electrical Engineering, Zhejiang University, China
Mr. Yaojie Hou, College of Electrical Engineering, Zhejiang University, China

SS05 a - Power Converters and Control for Distributed Generation IV
A-1350, Friday 26th of October, 10h30

Chair/s: Vassilios Agelidis, Akshay Rathore

Unbalanced Operation of Per-Phase Vector Controlled Four-Leg Grid Forming Inverter for Stand-Alone Hybrid Systems

Mr. Nayeem Ahmed Ninad, Ph. D. Student, Department of Electrical & Computer Engineering, Concordia University, Canada
Prof. Luiz A. C. Lopes, Associate Professor, Department of Electrical & Computer Engineering, Concordia University, Canada

Modular Multilevel Cascaded Converter based on Current Source H-Bridges Cells

Dr. Marcelo A. Perez, Universidad Tecnica Federico Santa Maria, Chile
Mr. Ricardo Lizana, Universidad Tecnica Federico Santa Maria, Chile
Mr. Camilo Azocar, Universidad Tecnica Federico Santa Maria, Chile
Prof. Jose Rodriguez, Universidad Tecnica Federico Santa Maria, Chile
Prof. Bin Wu, Ryerson University, Canada

Sensorless Control for DFIG Wind Turbines Based on Support Vector Regression

Dr. Ahmed Abo-Khalil, Electrical Engineering Department, Faculty of Engineering Almajmaa University, Saudi Arabia
Dr. Hammad Abo-Zied, Electrical Engineering Department, Faculty of Engineering Assiut University, Egypt

A novel four-leg three-phase inverter control strategy to reduce the Data Center thermal losses: Elimination of neutral current

Dr. Souvik Dasgupta, National University of Singapore, Singapore
Mr. Irudhayasamy Vasantharaj Prasanna, National University of Singapore, Singapore
Prof. Sanjib Kumar Panda, National University of Singapore, Singapore
Dr. Sanjib Kumar Sahoo, National University of Singapore, Singapore

A Simple DC-link Pre-Charging Method for Three-Phase Voltage Source Inverters

Mr. Bjarte Hoff, Narvik University College, Norway
Mr. Waldemar Sulkowski, Narvik University College, Norway

Control of a Hybrid Energy Storage System Using a Three Level Neutral Point Clamped Converter

Mr. Aitor Etxeberria, Estia-Recherche, France
Dr. Ionel Vechiu, Estia-Recherche, France
Mr. Sylvain Baudoin, Estia-Recherche, France
Dr. Haritza Camblong, University of Basque Country (E.U.P.-D), Spain
Dr. Jean-Michel Vinassa, Univ. Bordeaux, IMS, UMR 5218, France

TT08 e - Power Systems
A-1752, Friday 26th of October, 10h30

Chair/s: Adam Skorek, luis Eduardo Borges Da Silva

Improved Active Power Filter Performance for Distribution Systems with Renewable Generation

Mr. Pablo Acuna, Univ. de Concepcion, Chile
Dr. Luis Morán, Univ. de Concepcion, Chile
Dr. Marco Rivera, Univ. Técnica Federico Santa María, Chile
Dr. José Rodriguez, Univ. Técnica Federico Santa María, Chile
Dr. Juan Dixon, Pontificia Univ. Católica de Chile, Chile

Harmonic Resonances Damping using Hybrid Filter for WPP

Mrs. Khairul Nisak Md Hasan, Technical University of Catalonia, Spain
Mr. Kalle Rauma, Aalto University, Finland
Dr. Alvaro Luna, Technical University of Catalonia, Spain
Dr. J. Ignacio Candela, Technical University of Catalonia, Spain
Dr. Pedro Rodriguez, Technical University of Catalonia, Spain

Applying Adaptive Notch Filters to Hybrid Active Var Compensator

Ms. Silvia Ferreira, Unifei, Brazil
Mr. Robson Gonzatti, Unifei, Brazil
Prof. Carlos da Silva, Unifei, Brazil
Prof. Luiz Eduardo da Silva, Unifei, Brazil
Prof. Germano Lamabert-Torres, Unifei, Brazil
Mr. Joao Onofre P. Pinto, Ufms, Brazil

Analysis of 48-pulse Based STATCOM and UPFC Performance under Balanced and Fault Conditions

Mr. Saman Babaei, North Carolina State University, USA
Dr. Babak Parkhideh, North Carolina State University, USA
Prof. Subhashish Bhattacharya, North Carolina State University, USA

FACTS for Cost-Effective Improvement of Power Feeding of Large Mining Complexes

Mr. Rolf Grünbaum, Abb, Sweden
Mr. Jon Rasmussen, Abb, Canada

IF 3 - Industry Forum - Electric Vehicle and Transportation System I
A-1600, Friday 26th of October, 10h30

Chair/s: Joachim Taiber, Victor Huang

Session on different aspects of vehicle electrification and related infrastructure development including electric vehicle key components such as battery and controller technologies, vehicle-to-infrastructure communication aspects and charging infrastructure (e.g. wireless charging).

New Technology Trends in the Connected Vehicle and Electromobility Ecosystems

David Woessener, P3 North America

Connected Vehicle Technology in Ambulance Vehicles

Kirk Moir, Inmotion Technology

Creating an Ecosystem of Industry partners for the Networked Vehicle

Barry Gander, Networked Vehicle Association

Utilizing Telematics in Vehicle Racing

David Smith, Clemson University

TT03 f - Electrical Machines Design
B-0904, Friday 26th of October, 10h30

Chair/s: Dave Dorrell, Andrea Cavagnino

Electrical steel solicitation in traction electrical machine

Mr. Anthony Frias, Renault, France

Design Aspects of the Trans-Rotary Magnetic Gear

Mr. Siavash Pakdelian, Texas A&M University, USA
Prof. Hamid Toliyat, Texas A&M University, USA

Impact of Heat Treatment on Core Properties and IPMSM Performance

Mr. Shah A. Rahman, University of Alberta, Canada
Dr. Andy M. Knight, University of Alberta, Canada

An Experimental Test Bench for a Distributed Railway Traction Mechanical Load Emulator

Mr. Tahar Achour, Laplace University Of Toulouse, France
Prof. Maria Pietrzak-David, Laplace University Of Toulouse, France

Design of Interior PM Synchronous Traction Motor with Novel Approximate Skewed Rotor

Mr. Jiancheng Zhang, Zhejiang University, China
Dr. Xiaoyan Huang, Zhejiang University, China
Prof. Youtong Fang, Zhejiang University, China
Dr. Zikui Ma, Zhejiang University, China

Influence of the Sinusoidal Supply Frequency on the Induction Motor Stray Load Losses

Prof. Radu Bojoi, Politecnico di Torino, Italy
Prof. Aldo Boglietti, Politecnico di Torino, Italy
Prof. Andrea Cavagnino, Politecnico di Torino, Italy
Dr. Silvio Vaschetto, Politecnio di Torino, Italy

TT02 d - Electric and Plug-In Hybrid Electric Vehicles
B-0906, Friday 26th of October, 10h30

Chair/s: Hoang LeHuy, Leila Parsa

PEMFC Low Temperature Startup For Electric Vehicle

Mr. Nilson Henao, Hydrogen Research Institute, Canada
Mr. Sousso Kelouwani, Hydrogen Research Institute, Canada
Prof. Kodjo Agbossou, Hydrogen Research Institute, Canada
Prof. Yves Dubé, Hydrogen Research Institute, Canada

Power Supply for Idle Reduction Employing Constant Frequency Ripple Regulator

Mr. Tetsuya Oribe, Oita University, Japan
Mr. Taichi Kimura, Oita University, Japan
Prof. Terukazu Sato, Oita University, Japan
Prof. Kimihiro Nishijima, Oita University, Japan
Prof. Takashi Nabeshima, Oita University, Japan

A Novel Isolated Bidirectional DC-DC Converter for Ultra-capacitor Application in Hybrid and Electric Vehicles

Mr. Dawei He, Georgia Institute of Technology, USA
Mr. Pascal Ntsama, Georgia Institute of Technology, USA
Mr. Jinchi Han, Tsinghua University, China
Prof. Thomas Habetler, Georgia Institute of Technology, USA

Voltage balancing converter network for series-connected battery stack

Mr. Thanh Hai Phung, Grenoble Electrical Engineering laboratory, France
Dr. Jean Christophe Crebier, Grenoble Electrical Engineering laboratory, France
Prof. Yves Lembeye, Grenoble Electrical Engineering laboratory, France

A Matrix Converter-Based Topology For High Power Electric Vehicle Battery Charging And V2g Application

Mr. Harish S Krishnamoorthy, Texas A&M University, USA
Mr. Pawan Garg, Texas A&M University, USA
Prof. Prasad N Enjeti, Texas A&M University, USA

SS16 b - Electric and Hybrid Vehicles
B-0908, Friday 26th of October, 10h30

Chair/s: K. T. Chau, T. W. Ching

Comparison of Two Interior Permanent-Magnet Motors with Improved Fault-Tolerance

Dr. Qian Chen, Jiangsu university, China
Prof. Guohai Liu, Jiangsu university, China
Mr. Junqin Yang, Jiangsu university, China
Mr. Wensheng Gong, Jiangsu university, China
Prof. Wenxiang Zhao, Jiangsu university, China

Modeling & Fault Diagnosis System for Electric Vehicles

Mr. J.F. Ramahaleomiarantsoa, Université de Corse, France
Prof. Nicolas Héraud, Université de Corse, France
Dr. Ouadie Bennouna, Esigelec / Irseem, France
Prof. E. J.R. Sambatra, Institut Supérieur de Technologie, Madagascar
Prof. J. M. Razafimahenina, Ecole Supérieure Polytechnique, Madagascar

Design, Analysis and Sensorless Control of a New Self-decelerating Permanent-Magnet Motor

Dr. Ying Fan, Southeast University, China
Mr. Jin Huang, Southeast University, China
Mr. Xuedong Han, Southeast University, China
Dr. Xiaofan Fu, Southeast University, China
Dr. Wei Hua, Southeast University, China

Fuel Cell and Power Control for a Hybrid Vehicle. Experimental Results

Mr. Carlos Montero, System Engineering and Automation Departament. University of Seville, Spain
Mr. Alejandro Oliva, System Engineering and Automation Departament. University of Seville, Spain
Mr. David Marcos, System Engineering and Automation Departament. University of Seville, Spain
Ms. Elena Gonzalez, System Engineering and Automation Departament. University of Seville, Spain
Dr. Carlos Bordons, System Engineering and Automation Departament. University of Seville, Spain
Dr. Miguel A. Ridao, System Engineering and Automation Departament. University of Sevill, Spain
Dr. Eduardo F. Camacho, System Engineering and Automation Departament. University of Sevill, Spain
Mr. Eduardo Lopez, Instituto Nacional de Técnica Aeroespacial, Spain

Equivalent Vehicle Rotational Inertia Used for Electric Vehicle Test Bench Dynamic Studies

Mr. Poria Fajri, Missouri University of Science and Technology, USA
Mr. Reza Ahmadi, Missouri University of Science and Technology, USA
Prof. Mehdi Ferdowsi, Missouri University of Science and Technology, USA

Electromagnetic Performances Analysis of a New Magnetic-planetary-geared Permanent Magnet Brushless Machine for Hybrid Electric Vehicles

Dr. Xiaoyong Zhu, School of Electrical and Information Engineering, Jiangsu University, China
Mr. Lingting Kong, School of Electrical and Information Engineering, Jiangsu University, China
Prof. Long Cheng, Institute of Automotive Engineering, Jiangsu University, China
Dr. Wenxiang Zhao, School of Electrical and Information Engineering, Jiangsu University, China
Prof. Li Quan, School of Electrical and Information Engineering, Jiangsu University, China
Prof. Ming Cheng, School of Electrical Engineering, Southeast University, China

SS34 - Industrial Electronics in Smart Grids
B-1502, Friday 26th of October, 10h30

Chair/s: Mo El-Hawary, Siddharth Suryanarayanan

Terminal Sliding-Mode Control of Induction Generator for Wind Energy Conversion Systems

Dr. Yong Feng, Harbin Institute of Technology, China
Mr. Bin Chen, Harbin Institute of Technology, China
Prof. Xinghuo Yu, RMIT University, Australia
Prof. Yongmin Yang, Chongqing University, China

A Generalized Power Transfer Distribution Factor for Power Injection Analysis of Power Grids

Dr. Xiangjun Li, RMIT Univerisity, Australia
Prof. Xinghuo Yu, RMIT University, Australia

Comparative Transient Response Analysis of LLC Resonant Converter Controlled by Adaptive PID and Fuzzy Logic Controllers

Prof. Concettina Buccella, University of L'Aquila, Italy
Prof. Carlo Cecati, University of L'Aquila, Italy
Mr. Hamed Latafat, University of L'Aquila, Italy
Mr. Kaveh Razi, University of L'Aquila, Italy

Multi-Platform Real-Time Realization of Isolated Permanent Magnet Synchronous Generator

Mr. Nicholas P. Stroupe, Center for Advanced Power Systems - Florida State University, United States
Dr. Amin Hasanzadeh, Center for Advanced Power Systems - Florida State University, United States
Dr. Chris S. Edrington, Center for Advanced Power Systems - Florida State University, United States
Mr. Troy L. Bevis, Center for Advanced Power Systems - Florida State University, United States

Coordinated Control Scheme of Battery Energy Storage System (BESS) and Distributed Generations (DGs) for Electric Distribution Grid Operation

Mr. Seung Tae Cha, Technical University of Denmark, Denmark
Mr. Haoran Zhao, Technical University of Denmark, Denmark
Mr. Qiuwei Wu, Technical University of Denmark, Denmark
Mr. Arshad Saleem, Royal Institute of Technology, Sweden
Prof. Jacob ØStergaard, Technical University of Denmark, Denmark

SS29 b - Towards a more Efficient Lighting II
B-1504, Friday 26th of October, 10h30

Chair/s: Ricardo Nederson do Prado, Henrique Braga

An Optimized Methodology for LED Lighting System Designers: A Photometric Analysis

Mr. Vitor Cristiano Bender, Federal University of Santa Maria - UFSM, Brazil
Ms. Fernanda Mendes, Federal University of Santa Maria - UFSM, Brazil
Mr. Nórton Barth, Federal University of Santa Maria - UFSM, Brazil
Mr. William Dotto Vizzotto, Federal University of Santa Maria - UFSM, Brazil
Dr. Marco Antonio Dalla Costa, Federal University of Santa Maria - UFSM, Brazil
Dr. Ricardo Nederson do Prado, Federal University of Santa Maria - UFSM, Brazil
Dr. Tiago Bandeira Marchesan, Federal University of Santa Maria - UFSM, Brazil

Electrothermal Feedback of a LED Lighting System: Modeling and Control

Mr. Vitor Cristiano Bender, Federal University of Santa Maria - UFSM, Brazil
Mr. Alexandre Cardoso, Federal University of Santa Maria - UFSM, Brazil
Mr. Guilherme Ceretta Flores, Federal University of Santa Maria - UFSM, Brazil
Dr. Cassiano Rech, Federal University of Santa Maria - UFSM, Brazil
Dr. Tiago Bandeira Marchesan, Federal University of Santa Maria - UFSM, Brazil

Current-voltage model of LED light sources

Mr. Szymon Bęczkowski, Aalborg University, Denmark
Mr. Stig Munk-Nielsen, Aalborg University, Denmark

Temperature Effects on the Small-Signal Characteristics of Fluorescent Lamps

Dr. Javier Ribas, University of Oviedo, Spain
Mr. Ramon Diaz, University of Oviedo, Spain
Dr. Antonio Calleja, University of Oviedo, Spain
Dr. Jorge Garcia, University of Oviedo, Spain
Dr. Emilio Lopez-Corominas, University of Oviedo, Spain
Dr. Jesus Cardesin, University of Oviedo, Spain

Optimized Cascade Structure Applied to LED Street Lighting

Mr. Douglas Camponogara, Federal University of Santa Maria, Brazil
Mr. Diogo. R. Vargas, Federal University of Santa Maria, Brazil
Prof. Alexandre Campos, Federal University of Santa Maria, Brazil
Prof. Marco A. Dalla Costa, Federal University of Santa Maria, Brazil
Prof. Jorge García, University of Oviedo, Spain
Prof. Jose M. Alonso, University of Oviedo, Spain
Mr. Fabio A. Berlitz, Federal University of Santa Maria, Brazil

Modelling and Control of an Optimized Cascade Structure for LED Street Lighting Fixtures

Mr. Douglas Camponogara, Federal University of Santa Maria, Brazil
Mr. Diogo. R. Vargas, Federal University of Santa Maria, Brazil
Prof. Alexandre Campos, Federal University of Santa Maria, Brazil
Prof. Marco A. Dalla Costa, Federal University of Santa Maria, Brazil
Prof. Jorge García, University of Oviedo, Spain
Prof. Jose M. Alonso, University of Oviedo, Spain

SS13 b - Advanced Signal Processing Techniques for Fault Detection and Diagnosis of Electromechanical Systems II
B-1506, Friday 26th of October, 10h30

Chair/s: Mohamed Benbouzid, Martin Riera-Guasp

Wind Turbine Bearing Failure Detection Using Generator Stator Current Homopolar Component Ensemble Empirical Mode Decomposition

Dr. Yassine Amirat, ISEN Bret, France
Dr. Vincent Choqueuse, University of Brest, France
Prof. Mohamed Benbouzid, University of Brest, France

Faults diagnosis and detection using Principal Component Analysis and Kullback-Leibler divergence

Ms. Jinane Harmouche, Laboratoire de génie électrique de paris/Laboratoire des signaux et systèmes, France
Prof. Claude Delpha, Laboratoire des signaux et systèmes, France
Prof. Demba Diallo, Laboratoire de génie électrique de paris, France

Experimental comparison between diagnostic indicators for bearing fault detection in synchronous machine by spectral Kurtosis and energy analysis

Mr. Ziad Obeid, University of Toulouse - LAPLACE, France
Prof. Antoine Picot, University of Toulouse - LAPLACE, France
Mr. Sylvain Poignant, Safran Technofan, France
Prof. Jérémi Régnier, University of Toulouse - LAPLACE, France
Mr. Olivier Darnis, Safran Technofan, France
Prof. Pascal Maussion, University of Toulouse - LAPLACE, France

A Smart Monitor for Measurement and Fault Detection

Mr. Andrew Kadik, Lakehead University, Canada
Dr. Wilson Wang, Lakehead University, Canada

Permanent Magnets Synchronous Machines Faults Detection and Identification

Mrs. Garance Vinson, Messier-Bugatti-Dowty, France
Prof. Michel Combacau, Laas-Cnrs, France

Cyclostationarity analysis of instantaneous angular speeds for monitoring chatter in high speed milling

Mr. Mourad Lamraoui, LASPI, Université Jean Monnet de St Etienne, 20 avenue de paris, 42334, Roanne, France;, France
Prof. Marc Thomas, École de Technologie Supérieur de, 1100 Notre Dame Ouest, Montréal, H1C1K3 Québec, Canada;, Canada
Dr. Mohamed Elbadaoui, LASPI, Université Jean Monnet de St Etienne, 20 avenue de paris, 42334, Roanne, France;, France
Dr. François Girardin, ENSMM / FEMTO-ST. Besançon Franche-Comté - France., France

TT01 g - Power Electronics
B-1514, Friday 26th of October, 10h30

Chair/s: Sudip Mazumder, José Rodrigues

Advanced coupled voltage-frequency control for power efficient DVFS management

Dr. Carolina Albea, Laas-Cnrs, Ups, France
Dr. Diego Puschini, CEA, Leti-Minatec Campus, France
Dr. Suzanne Lesecq, CEA, Leti-Minatec Campus, France
Mrs. Yeter Akgul, CEA, Leti-Minatec Campus, France

A Comparative Study of Control Schemes for VSC-HVDC Transmission System

Ms. Xiaofan Fu, École De Technologie SupéRieure, Canada
Prof. Louis-A. Dessaint, École De Technologie SupéRieure, Canada
Dr. Richard Gagnon, Institut de recherche d'Hydro-Quebec, Canada
Prof. Keliang Zhou, University of Canterbury, New Zealand (Aotearoa)
Prof. Ming Cheng, Southeast University, China

On the Stability of Discrete-Time Active Damping Methods for VSI Converters with a LCL Input Filter.

Mr. Marcos Orellana Barcelo, Universitat Politècnica de Catalunya, Spain
Prof. Roberto Griñó Cubero, Universitat Politècnica de Catalunya, Spain

State-Space Model of a Class of Switched-Mode DC-DC Power Supply

Dr. Haijun Fang, MKS Instruments, USA

Efficient Parallel Particle Swarm Optimizers on GPU for Real-Time Harmonic Minimization in Multilevel Inverters

Mr. Vincent Roberge, Royal Military College of Canada, Canada
Dr. Mahommed Tarbouchi, Royal Military College of Canada, Canada

An optimal modulation strategy for minimising the losses of isolated multisource DC-DC converters

Ms. Claudia Fischer, ETh Zurich, Automatic Control Lab., Switzerland
Dr. Sebastien Mariethoz, ETh Zurich, Automatic Control Lab., Switzerland
Prof. Manfred Morari, ETh Zurich, Automatic Control Lab., Switzerland

TT11 c - Signal Processing and Modelling
B-1516, Friday 26th of October, 10h30

Chair/s: Milos Manic, Terry Martin

A New Interference-Cancellation Technique for Instruments Impacted by Line-Frequency Signals

Prof. Robert Cox, UNC Charlotte, USA

A Zerotree Coding for Compression of ECG Signal Using EZW and SPIHT

Dr. Sana Ktata, ISSATM Tunisia, Tunisia
Prof. Halima Mahjoubi, Istmt, Tunisia

Invariant Common Spatial Pattern Advanced Feature Extraction in Mu Rhythms of EEG Signals

Ms. Thanh Ha Nguyen, School of Electrical and Electronic Engineering, Korea (South)
Mr. Seung-Min Park, School of Electrical and Electronic Engineering, Korea (South)
Mr. Kwang-Eun Ko, School of Electrical and Electronic Engineering, Korea (South)
Prof. Kwee-Bo Sim, School of Electrical and Electronic Engineering, Korea (South)

Recurrent Online Kernel Recursive Least Square Algorithm for Nonlinear Modeling

Mr. Haijin Fan, Nanyang Technological University, Singapore
Dr. Qing Song, Nanyang Technological University, Singapore
Ms. Zhao Xu, Nanyang Technological University, Singapore

Estimation of Execution Timing of Human Action considering Causality between Action and Situation

Mr. Kohjiro Hashimoto, Nagoya University, Japan
Prof. Shinji Doki, Nagoya University, Japan
Dr. Kae Doki, Aichi Institute of Technology, Japan

Realization of a MEMS Attitude Reference System for a Small Aerial Vehicle

Mr. Chungil Kim, ChungNam National University, Korea (South)
Mr. Taeyeon Kim, ChungNam National University, Korea (South)
Prof. Joon Lyou, ChungNam National University, Korea (South)

TT10 b - Mechatronic Systems Aspects
B-1518, Friday 26th of October, 10h30

Chair/s: Kiyoshi Ohishi, Antonio Luque

An Autonomous Wireless Sensor Network Device Powered by a RF Energy Harvesting System

Dr. Denis Dondi, University of Modena and Reggio Emilia, Italy
Mr. Stefano Scorcioni, University of Modena and Reggio Emilia, Italy
Dr. Alessandro Bertacchini, University of Modena and Reggio Emilia, Italy
Prof. Luca Larcher, University of Modena and Reggio Emilia, Italy
Prof. Paolo Pavan, University of Modena and Reggio Emilia, Italy

Base Position Detection of Grape Stem Considering Its Displacement for Weeding Robot in Vineyards

Mr. Hisashi Igawa, Hokkaido University, Japan
Prof. Takayuki Tanaka, Hokkaido University, Japan
Prof. Shun'ichi Kaneko, Hokkaido University, Japan
Mr. Tatsumi Tada, Hokkaido Research Organization, Japan
Mr. Shin'ichi Suzuki, Hokkaido Research Organization, Japan
Dr. Isao Ohmura, Hokkaido Research Organization, Japan

Velocity Based Motion-Copying System for Integrated Reproduction of Motion Components

Mr. Shunsuke Yajima, Keio University, Japan
Prof. Seiichiro Katsura, Keio University, Japan

Force Control of Two-Mass Resonant System with Vibration Suppression based on Modal Transformation

Mr. Eiichi Saito, Keio University, Japan
Prof. Seiichiro Katsura, Keio University, Japan

Energy Harvesting for Zigbee Compliant Wireless Sensor Network Nodes

Prof. Pedro Amaro, Isec, Portugal
Prof. Fernando J. T. E. Ferreira, Isec, Portugal
Prof. Rui Cortesão, Fctuc, Portugal
Prof. Jorge Landek, ISA - Intelligent Sensing Anywhere, Portugal

Luncheon Plenary - Montreal Transit Society electrification projects, technological challenges, and future development
Pavilion A, Main Hall, Friday 26th of October, 12h30

Luncheon Speaker: François Chamberland, Montreal Transit Society (STM)

Presenter: Lyne Woodward, Canada; David Irwin, USA and Luis Gomes, Portugal

Abstract - Quebec government has set a goal that 95% of public transport in Montreal must use non polluted energy sources, the Montreal Transit Society, who has already more than 50% of its vehicles using electricity, has an ambitious plan to electrify its surface network. This plan includes several projects and of course, several technological challenges. The presentation will cover mass transit system engineering challenges, pollution free smart urban technological planning and implementation.

TU 6 - Nonlinear Control and Stability of Converters and Systems
A-1150, Friday 26th of October, 14h00

Lecturer/s: Dr. Sudip K. Mazumder

TU 3 - The Essence of 3-Phase PFC Rectifier Systems
A-1160, Friday 26th of October, 14h00

Lecturer/s: Dr. Johann W. Kolar

TT07 I - DC-DC Converter Topologies II
A-1170, Friday 26th of October, 14h00

Chair/s: Frede Blaabjerg, Akshay Rathore

An Interleaved-Series/Parallel Forward Converter with Wide Input Voltage Range

Dr. Junjun Zhang, Nanjing University of Aeronautics and Astronautics, China
Dr. Hongfei Wu, Nanjing University of Aeronautics and Astronautics, China
Prof. Yan Xing, Nanjing University of Aeronautics and Astronautics, China
Mr. Yanbing Xia, Nanjing University of Aeronautics and Astronautics, China
Dr. Kai Sun, Tsinghua University, China

Steady-state analysis of dead-time effect on bidirectional buck converters

Dr. Benoit Bidoggia, Department of Energy Technology, Aalborg University, Denmark
Dr. RamKrishan Maheshwari, Department of Energy Technology, Aalborg University, Denmark
Mr. Rasmus Ø. Nielsen, Department of Energy Technology, Aalborg University, Denmark
Prof. Stig Munk-Nielsen, Department of Energy Technology, Aalborg University, Denmark
Prof. Frede Blaabjerg, Department of Energy Technology, Aalborg University, Denmark

Low-Volume Power Supply for Vehicular Fuel Injection Systems

Mr. Behzad Mahdavikhah, University of Toronto, Canada
Dr. Mor Peretz, University of Toronto, Canada
Prof. Aleksandar Prodic, University of Toronto, Canada

Synthesis of Two-State Ladder-Structured DC-DC Power Converters By Duality Principle

Mr. K.T. Mok, The Hong Kong Polytechnic University, Hong Kong
Dr. Y.M Lai, The Hong Kong Polytechnic University, Hong Kong
Dr. K.H. Loo, The Hong Kong Polytechnic University, Hong Kong
Prof. C.K. Tse, The Hong Kong Polytechnic University, Hong Kong

Integrated Low Power Low Voltage Isolated Switch Mode Power Supply

Mr. Trung Hieu Trinh, Grenoble Electrical Engineering Laboratory, France
Mr. Thanh Hai Phung, Grenoble Electrical Engineering Laboratory, France
Prof. Jean-Christophe Crebier, Grenoble Electrical Engineering Laboratory, France
Dr. Nicolas Rouger, Grenoble Electrical Engineering Laboratory, France
Prof. Yves Lembeye, Grenoble Electrical Engineering Laboratory, France

Panel on What is the Horizon Ahead of Smart-Grids ?
A-1242, Friday 26th of October, 14h00

Moderator/s: Xinghuo Yu

Panelists:
Marcelo Godoy Simões (Colorado School of Mines, USA),
Siddharth Suryanarayanan (Colorado State University, USA),
Stamatis Karnouskos (SAP Research, Germany)
M. E. El-Hawary (Dalhousie University, Canada)

This panel will present the state of the art in smart-grids and will discuss exciting new frontiers that can be explored with this technology. The panel participants will discuss which new horizons are envisioned ahead of smart-grids technology. Initially, the state of the art will be presented showing that a holistic approach can be taken where a global control strategy can be designed in order to have a smart-grid enabled to a global control that is distributed and hierarchical in nature. Then, a cyber-physical system (CPS) based approach for demand side management (DSM) or demand response for efficient energy management will be covered, with some examples including a) an artificial neural network for managing the electric energy consumption of a university campus; b) a decision-making algorithm for efficient energy management in a smart home; and c) a multi-agent system based energy management in a commercial building. The panel will discuss about the harnessing power of smart-grids with focus on the information and services in multiple layers. It will be presented information can be exchanged considering interoperability, security, trust and privacy. At the end of the presentation, a survey of recent algorithmic enhancements to transient and steady state power quality evaluation procedures will support how a high level intelligent hierarchal decision making process will advance the energy distribution based on the integration of renewable and alternative energy sources. At the end, the panelists will engage in interactive discussions with the audience, brainstorming the horizons ahead of the smart-grid technology.

TT07 m - Modeling of Power Converters and Systems II
A-1300, Friday 26th of October, 14h00

Chair/s: I. Nagy, Norbert Froehleke

Neutral-Point Voltage Dynamics Model of Three-Level NPC Inverter for Reactive Load

Mr. Ramkrishan Maheshwari, Aalborg University, Denmark
Dr. Stig Munk-Nielsen, Aalborg University, Denmark
Dr. Sergio Busquets-Monge, Technical University of Catalonia, Spain

Computational Model Of The Dynamic Behavior Of The Zeta Converter, In Discontinuous Conduction Mode

Prof. Renan Caron Viero, Pontifícia Universidade Católica do Rio Grande do Sul, Brazil
Mr. Fernando Bereta Dos Reis, Pontifícia Universidade Católica do Rio Grande do Sul, Brazil
Prof. Fernando Soares Dos Reis, Pontifícia Universidade Católica do Rio Grande do Sul, Brazil

Modeling And Control of Primary Parallel Isolated Boost Converter

Mrs. Maria C. Mira A., Technical University of Denmark, Denmark
Mr. Juan C. Hernandez B., Technical University of Denmark, Denmark
Mr. Gokhan Sen, Technical University of Denmark, Denmark
Prof. Ole C. Thomsen, Technical University of Denmark, Denmark
Prof. Michael A. E. Andersen, Technical University of Denmark, Denmark

Numerical simulation of surge protection circuits and experimental verification using a lightning surge simulator

Mr. Sisira James, University of Waikato, New Zealand (Aotearoa)
Mr. Nihal Kularatna, University of Waikato, New Zealand (Aotearoa)
Prof. Alistair Steyn-Ross, University of Waikato, New Zealand (Aotearoa)
Prof. Rainer Kunnemeyer, University of Waikato, New Zealand (Aotearoa)

DC Components and Subharmonics Generated by Naturally Sampled PWM Techniques

Mr. Peter Stumpf, Budapest University of Technology and Economics, Hungary
Dr. Rafael K. Jardan, Budapest University of Technology and Economics, Hungary
Prof. Istvan Nagy, Budapest University of Technology and Economics, Hungary

TT09 f - Standalone Renewable Energy Systems
A-1302, Friday 26th of October, 14h00

Chair/s: Yunwei Li, Abdelhamid Hamadi

Modeling and Control of Stand-Alone Wind Energy Conversion System with PMBLDC Generator

Ms. Neha Adhikari, Instrument Design Development Centre, IIT Delhi, Hauz Khas New Delhi-110016, India, India
Prof. Bhim Singh, Fellow, IEEE,Dept. of Electrical Engg., IIT Delhi, Hauz Khas New Delhi-110016, India, India
Prof. A.L. Vyas, Instrument Design Development Centre, IIT Delhi, Hauz Khas New Delhi-110016, India, India
Prof. Ambrish Chandra, Senior Member, IEEE, Dept. of Electrical Engg., École de Technologie Superieure, Montreal, QC H3C 1K3, Canada, Canada
Prof. Kamal-Al Haddad, Fellow, IEEE,Dept. of Electrical Engg., École de Technologie Superieure,,Montreal, QC H3C 1K3, Canada, Canada

Description of Hysteresis of Nickel Metal Hydride Battery

Dr. Vincenzo Franzitta, Palermo University, Italy
Ms. Alessia Viola, Palermo University, Italy
Dr. Marco Trapanese, Palermo University, Italy

An Improved Maximum Power Extraction Scheme for Microbial Fuel Cells

Ms. Samareh Attarsharghi, École de Technologie Supérieure, Canada
Prof. Lyne Woodward, École de Technologie Supérieure, Canada
Prof. Ouassima Akhrif, École de Technologie Supérieure, Canada

Modeling and Control Analysis of Fuel Cell Power System with Varying Load and Temperature

Dr. Shafiqul Islam, NSERC Visiting Fellow, Canada
Prof. Peter Liu, Professor, Canada
Prof. Abdulmotaleb El Saddik, Professor, Canada

Energy Management and Power Control for a Stand-Alone Wind Energy Conversion System

Dr. Jie Chen, College of Automation Engineering, Nanjing University of Aeronautics and Astronautics, China
Mr. Jiawei Chen, College of Automation Engineering, Nanjing University of Aeronautics and Astronautics, China
Prof. Chunying Gong, College of Automation Engineering, Nanjing University of Aeronautics and Astronautics, China
Mr. Xiang Deng, College of Automation Engineering, Nanjing University of Aeronautics and Astronautics, China

SS39 a - Multilevel Converters Applications, Topologies, Control and Modulation Techniques I
A-1340, Friday 26th of October, 14h00

Chair/s: Marcelo Perez, Samir Kouro

Double-Carrier-Based Modulation Theory of Three-Level Inverters and a New Discontinuous PWM for Neutral-Point Voltage Balancing

Dr. Somboon Sangwongwanich, Chulalongkorn University, Thailand

Generalized Harmonic Elimination Method for Interleaved Power Amplifiers

Mr. Mark Caris, TU Eindhoven, Netherlands
Dr. Henk Huisman, TU Eindhoven, Netherlands
Mr. Jan Schellekens, TU Eindhoven, Netherlands
Dr. Jorge Duarte, TU Eindhoven, Netherlands

Clamping Diode caused Distortion in Multilevel NPC Full-Bridge Audio Power Amplifiers

Dr. Vicent Sala, MCIA Research Center - Electronic Department of Technical University of Catalonia (UPC), Spain
Mr. Ramin Salehi, MCIA Research Center - Electronic Department of Technical University of Catalonia (UPC), Spain
Dr. Manuel Moreno-Eguilaz, MCIA Research Center - Electronic Department of Technical University of Catalonia (UPC), Spain
Mr. Mehdi Salehifar, MCIA Research Center - Electronic Department of Technical University of Catalonia (UPC), Spain
Dr. Luis Romeral, MCIA Research Center - Electronic Department of Technical University of Catalonia (UPC), Spain

Voltage Balancing Strategy for a Five-Level Flying Capacitor Converter Using Phase Disposition PWM with Sawtooth-Shaped Carriers

Mr. Amer Mohammad Yusuf Mohammad Ghias, The University of New South Wales, Australia
Prof. Josep Pou, Technical University of Catalonia, Spain
Dr. Mihai Ciobotaru, The University of New South Wales, Australia
Prof. Vassilios Agelidis, The University of New South Wales, Australia

Voltage Balancing of a Five-level Flying Capacitor Converter Using Optimum Switching Transitions

Mr. Amer Mohammad Yusuf Mohammad Ghias, The University of New South Wales, Australia
Prof. Josep Pou, Technical University of Catalonia, Spain
Dr. Mihai Ciobotaru, The University of New South Wales, Australia
Prof. Vassilios Agelidis, The University of New South Wales, Australia

SS05 b - Power Converters and Control for Distributed Generation V
A-1350, Friday 26th of October, 14h00

Chair/s: David Dorrell, Subrata Banerjee

Lifetime Prediction of IGBT in a STATCOM Using Modified-Graphical Rainflow Counting Algorithm

Ms. Lakshmi Reddy Gopi Reddy, University of Tennessee, USA
Dr. Leon M. Tolbert, University of Tennessee, USA
Dr. Burak Ozpineci, Oak Ridge National Laboratory, USA

A Lyapunov-based Current Control Strategy of Three Phase Shunt Active Power Filter for Harmonic Elimination, Power-Factor Correction, and Load Unbalance Compensation

Mr. Mohamed Haddad, ESSTT Tunisia, Tunisia
Prof. Salem Rahmani, ETS Montreal, Canada
Prof. Farhat Fnaiech, ESSTT Tunisia, Tunisia
Prof. Kamal Al-HADDAD, ETS Montreal, Canada

Multi-oscillatory LQR for a Three-phase Four-wire Inverter with L3nC Output Filter

Mr. Arkadiusz Kaszewski, Warsaw University of Technology, Institute of Control and Industrial Electronics, Poland
Prof. Lech Grzesiak, Warsaw University of Technology, Institute of Control and Industrial Electronics, Poland
Dr. Bartlomiej Ufnalski, Warsaw University of Technology, Institute of Control and Industrial Electronics, Poland

Optimal Linear Controller Design of Standalone VSI Including Emulated Output Current State

Dr. Amin Hasanzadeh, The Center for Advanced Power Systems, The Florida State University, USA
Dr. Chris S. Edrington, The Center for Advanced Power Systems, The Florida State University, USA
Mr. Jesse Leonard, The Center for Advanced Power Systems, The Florida State University, USA

Bi-Directional Isolated Multi-Port Power Converter for Aircraft HVDC Network Power Transfer

Dr. Baburaj Karanayil, The University of New South Wales, Australia
Mr. Marcos Arregui, The University of Sydney, Australia
Prof. Vassilios Agelidis, The University of New South Wales, Australia
Dr. Mihai Ciobotaru, The University of New South Wales, Australia

SS24 a - Wind Turbine Modeling, Identification, Control and Faults Diagnosis I
A-1752, Friday 26th of October, 14h00

Chair/s: Mohamed Benbouzid, R. Wamkeue

Sliding Mode Control Based Robust Observer of Aerodynamic Torque for Variable-Speed Wind Turbines

Mr. Olivo Ciccarelli, Universita' Politecnica delle Marche, Italy
Prof. Maria Letizia Corradini, Universita' di Camerino, Italy
Mr. Giacomo Cucchieri, Universita' Politecnica delle Marche, Italy
Dr. Gianluca Ippoliti, Universita' Politecnica delle Marche, Italy
Dr. Giuseppe Orlando, Universita' Politecnica delle Marche, Italy

A High-Order Sliding Mode Observer for Sensorless Control of DFIG-based Wind Turbines

Prof. Mohamed Benbouzid, University of Brest, France
Dr. Brice Beltran, University of Brest, France
Dr. Hervé Mangel, University of Brest, France
Dr. Abdeslam Mamoune, University of Brest, France

Reactive Power Control of DFIG-Based Wind Turbine during Voltage Sag

Prof. Francisco Kleber de A. Lima, Federal University of Ceara, Brazil
Mr. Joacillo Luz Dantas, Federal Institute of Education, Science and Technology of Ceara, Brazil
Prof. Carlos Gustavo C. Branco, Federal University of Ceara, Brazil

Control of Grid-Side Inverter for Isolated Wind-Diesel Power Plants using Variable Speed Squirrel Cage Induction Generator

Mr. Tommy Andy Theubou Tameghe, Université du Québec en Abitibi-Témiscamingue (UQAT), Canada
Prof. René Wamkeue, Université du Québec en Abitibi-Témiscamingue (UQAT), Canada
Dr. Innocent Kamwa, Institut de recherche Hydro-Québec (IREQ), Canada

An Optimum Speed MPPT Controller for Variable Speed PMSG Wind Energy Conversion Systems

Dr. Jogendra S. Thongam, Royal Military College, Canada
Dr. Mohamed Tarbouchi, Royal Military College, Canada
Dr. Rachid Beguenane, Royal Military College, Canada
Dr. Aime F. Okou, Royal Military College, Canada
Dr. Adel Merabet, Saint Mary's University, Canada
Mr. Pierre Bouchard, Stas Inc., Canada

IF 4 - Industry Forum - Electric Vehicle and Transportation System II
A-1600, Friday 26th of October, 14h00

Chair/s: Joachim Taiber, Victor Huang

Session on different aspects of vehicle electrification and related infrastructure development including electric vehicle key components such as battery and controller technologies, vehicle-to-infrastructure communication aspects and charging infrastructure (e.g. wireless charging).

Transportation Standards

Mr. Kipness, IEEE Standards Program Manager

TT03 g - Induction Machines
B-0904, Friday 26th of October, 14h00

Chair/s: Emil Levi, Mohamed Benbouzid

Induction Motor Parameter Determination Using the Harmony Search Algorithm to Power, Torque and Speed Estimation

Prof. Jose Roberto Marques, University of Mogi das Cruzes, Brazil
Dr. Izabel Fernanda Machado, University of São Paulo, Brazil
Dr. Jose Roberto Cardoso, University of São Paulo, Brazil

Global Wavelet Spectrum Based Fault Detection For Self-Excited Induction Generator

Ms. Victoria Herrera, UFABC University, Brazil
Mr. Javier Alexis Andrade Romero, UFABC University, Brazil
Prof. Jesus Franklin Andrade Romero, UFABC University, Brazil

Fuzzy-Logic Control of Unsymmetrical Two-Phase Induction Motor

Dr. Naser Abdel-Rahim, Assoc. Prof., Benha Univ., Egypt

Position Control of Two-Phase Induction Motor using dSpace environment

Mr. Slavomir Kascak, University of Zilina, Slovak Republic
Mr. Michal Prazenica, University of Zilina, Slovak Republic
Prof. Branislav Dobrucky, University of Zilina, Slovak Republic

A Tutorial on PI Velocity Control of Induction Motors

Prof. Liuping Wang, RMIT University, Australia
Mr. Lu Gan, RMIT University, Australia

SS38 - High-Efficiency Magnetless Electrical Motors and Generators
B-0906, Friday 26th of October, 14h00

Chair/s: David Dorrell, Shah Asif Rahman

Hybrid Excitation Synchronous Motor Control in Electric Vehicle with Copper and Iron Losses Minimization

Ms. Rita Mbayed, SATIE, Univ Cergy Pontoise, CNRS, France
Dr. Georges Salloum, Lebanese University, Faculty of Engineering, Branch II, Lebanon
Dr. Lionel Vido, SATIE, Univ Cergy Pontoise, CNRS, France
Prof. Eric Monmasson, SATIE, Univ Cergy Pontoise, CNRS, France
Prof. Mohamed Gabsi, SATIE, ENS Cachan, CNRS Universud, France

Stability Analysis of Sensorless BLDC Motor Drive Using Digital PWM Technique for Electric Vehicles

Mr. Alireza Tashakori Abkenar, Swinburne University of Technology, Australia
Dr. Mehran Motamed Ektesabi, Swinburne University of Technology, Australia

Torque Based Direct Driving Force Control Method with Driving Stiffness Estimation for Electric Vehicle with In-Wheel Motor

Mr. Junya Amada, University of Tokyo, Japan
Prof. Hiroshi Fujimoto, University of Tokyo, Japan

Model-Predictive Direct Power Control of AC/DC Converters with One Step Delay Compensation

Mr. Jiefeng Hu, University of Technology Sydney, Australia
Prof. Jianguo Zhu, University of Technology Sydney, Australia
Mr. Glenn Platt, University of Technology Sydney, Australia
Dr. David Dorrell, University of Technology Sydney, Australia

Are Wound-Rotor Synchronous Motors Suitable for Use in High Efficiency Torque-Dense Automotive Drives?

Dr. David G. Dorrell, University of Technology Sydney, Australia

SS28 - Control and Modeling of High Speed Motors
B-0908, Friday 26th of October, 14h00

Chair/s: Jan Chyský, Aymen Flah

Analysis and Design of an Ultra-High-Speed Slotless Self-Bearing Permanent-Magnet Motor

Mr. Thomas Baumgartner, Power Electronic Systems Laboratory ETH Zurich, Switzerland
Mr. Ralph Burkart, Power Electronic Systems Laboratory ETH Zurich, Switzerland
Mr. Johann Walter Kolar, Power Electronic Systems Laboratory ETH Zurich, Switzerland

A new adaptive high speed control algorithm used for a FOC or a DTC PMSM drive strategies

Dr. Flah Aymen, National School of engineeirng of Gabes, Tunisia
Prof. Sbita Lassâad, National School of engineeirng of Gabes, Tunisia

Control of High-speed Permanent Magnet Synchronous Machine

Dr. Jan Chysky, Czech Technical University in Prague, Faculty of Mechanical Engineering, Czech Republic
Prof. Jaroslav Novak, Czech Technical University in Prague, Faculty of Mechanical Engineering, Czech Republic
Dr. Martin Novak, Czech Technical University in Prague, Faculty of Mechanical Engineering, Czech Republic

Influence of photovoltaic DC bus voltage on the high speed PMSM drive

Ms. Farhat Mayssa, Enig, Tunisia
Dr. Flah Aymen, Enig, Tunisia
Prof. Sbita LassaÄD, Enig, Tunisia

TT06 c - Mechatronics and Robotics III
B-1502, Friday 26th of October, 14h00

Chair/s: Taskin Padir, Ren Luo

Design and Experimental Validation of a Mobile Robot Platform for Analog Planetary Exploration

Mr. Joseph L. Amato, Wpi, USA
Mr. Jon J. Anderson, Wpi, USA
Mr. Thomas J. Carlone, Wpi, USA
Mr. Michael E. Fagan, Wpi, USA
Prof. Kenneth A. Stafford, Wpi, USA
Prof. Taskin Padir, Wpi, USA

Recursive Motion Planning Using Optimal Vector Smoothing Splines with Cross-Coupled Constraints

Dr. Hiroyuki Fujioka, Fukuoka Institute of Technology, Japan
Prof. Hiroyuki Kano, Tokyo Denki University, Japan

Human-Robot Interaction with Multi-Sensor Fusion Based Hand Sign Recognition for Service Robot

Prof. Luo Ren. C, Ntu, Taiwan
Mr. Wu Yen-Chang, Ntu, Taiwan

Formulation of Packing Problem applying Densest Packing Algorithms to Planning of Packing for Robot

Dr. Hiromu Onda, Aist, Japan

Robotic System for Single Incision Laparoscopic Surgery

Mrs. Irene Rivas-Blanco, Universidad de Málaga, Spain
Dr. Pablo Saz-Orosco, Universidad de Málaga, Spain
Dr. Isabel García-Morales, Universidad de Málaga, Spain
Prof. Víctor Muñoz-Martínez, Universidad de Málaga, Spain

SS12 a - High Precision Motion Control for Mechatronic Systems I
B-1504, Friday 26th of October, 14h00

Chair/s: Makoto Iwasaki, Toshiaki Tsuji

Improvement of Vibration Suppression Performance of Galvano Mirror Using Piezoelectric Element

Dr. Kenta Seki, Nagoya Institute of Technology, Japan
Mr. Hiroki Yokoi, Nagoya Institute of Technology, Japan
Prof. Makoto Iwasaki, Nagoya Institute of Technology, Japan

Gain Scheduled Reference Governor and its Application to Long Seek Control of Hard Disk Drives

Mr. Hao Guo, Kobe Univercity, Japan
Prof. Yuzo Ohta, Kobe Univercity, Japan
Prof. Izumi Masubuchi, Kobe Univercity, Japan

Overcoming Current Quantization Effects for Precise Current Control by Combining Dithering Techniques and Kalman Filter

Mr. Hongzhong Zhu, The University of Tokyo, Japan
Prof. Hiroshi Fujimoto, The University of Tokyo, Japan

Precision Motion Control Based on a Periodic Adaptive Disturbance Observer

Mr. Kwanghyun Cho, Kaist, Korea (South)
Prof. Seibum Choi, Kaist, Korea (South)
Dr. Sehoon Oh, Samsung Heavy Industries, Korea (South)
Mr. Heeram Park, Kaist, Korea (South)

High Resolution Position Estimation for Advanced Motion Control based on FPGA

Mr. Manuel Nandayapa, Nagaoka University of Technology, Japan
Dr. Chowarit Mitsantisuk, Nagaoka University of Technology, Japan
Prof. Kiyoshi Ohishi, Nagaoka University of Technology, Japan

TT12 b - Software Requirements and Applications
B-1506, Friday 26th of October, 14h00

Chair/s: Carlos Monsalve, Adel Khelifi

On the Expressiveness of Business Process Modeling Notations for Software Requirements Elicitation

Prof. Carlos Monsalve, Espol - Ets, Ecuador
Prof. Alain April, École de technologie supérieure, Canada
Prof. Alain Abran, École de technologie supérieure, Canada

From Requirements to Software Trustworthiness using Scenarios and Finite State Machine

Ms. Mitra Nami, École de technologie supérieure, Canada
Prof. Witold Suryn, École de technologie supérieure, Canada

Case Study: Using Requirements and FSM for Evaluating Software Trustworthiness

Ms. Mitra Nami, École de technologie supérieure, Canada
Prof. Witold Suryn, École de technologie supérieure, Canada

Drive System Assistance Tool for Meta-Analysis of Dimensioning and Maintenance Indicators

Mr. Fazel Ansari, Institute of Knowledge Based Systems and Knowledge Management, Dep. Electrical Engineering & Computer Science, University of Siegen, Germany
Mr. Randitya A. Dewa, University of Siegen, Germany
Prof. Madjid Fathi, Institute of Knowledge Based Systems and Knowledge Management, Dep. Electrical Engineering & Computer Science, University of Siegen, Germany

Developing an ROV software control architecture: a formal specification approach

Mr. Fabio Henrique de Assis, Xmobots Sistemas Robóticos, Brazil
Dr. Fabio Kawaoka Takase, Atech Negócios em Tecnologia, Brazil
Prof. Newton Maruyama, University of Sao Paulo, Brazil
Prof. Paulo Eigi Miyagi, University of Sao Paulo, Brazil

TT01 h - Nonlinear Control
B-1514, Friday 26th of October, 14h00

Chair/s: Guchuan Zhu, Peter Korondi

A Sliding Mode Controller for Two-Phase Synchronous Buck Converters

Dr. Christopher G. Wilson, Auburn University, USA
Prof. John Y. Hung, Auburn University, USA
Dr. Robert N. Dean, Auburn University, USA

Quaternion Feedback Control for Gyroless Target Pointing of Underactuated Spacecraft

Dr. Yee-Jin Cheon, Korea Aerospace Research Institute, Korea (South)

Second Order Sliding Mode Control on Task-Space of a 6-DOF Stewart Platform

Dr. Sung-Hua Chen, National Chiao Tung University, Taiwan
Prof. Chin-Teng Lin, National Chiao Tung University, Taiwan
Prof. Li-Chen Fu, National Taiwan University, Taiwan

A Hybrid Backstepping-like Nonlinear Control of a Robot-Trailer System

Mr. Aditya Singh, Auburn University, USA
Prof. John Y. Hung, Auburn University, USA
Mr. Bob J. Selfridge, Army Corps of Engineers, USA

Fuzzy-based adaptive observer control for a class of nonlinear systems with unknown time delays

Prof. Hassan Yousef, Squ, Oman
Dr. Mohammed Hamdy, Menofia University, Egypt

Flatness-based Deformation Control of a 1-Dimensional Microbeam with In-domain Actuation

Mr. Amir Badkoubeh, Ecole Polytechnique Montreal, Department of Electrical Engineering, Canada
Prof. Guchuan Zhu, Ecole Polytechnique Montreal, Department of Electrical Engineering, Canada

TT11 d - Pattern Recognition and Feature Selection
B-1516, Friday 26th of October, 14h00

Chair/s: Gheorghe Marcel Gabrea, Robert Sabourin

Combining Textural Descriptors for Forest Species Recognition

Mr. Jefferson Martins, Ufpr, Brazil
Prof. Luiz Oliveira, Ufpr, Brazil
Prof. Robert Sabourin, Ets, Canada

Biomedical Diagnosis and Prediction using Parsimonious Fuzzy Neural Networks

Ms. Yuting Chen, Nanyang Technological University, Singapore
Prof. Meng Joo Er, Nanyang Technological University, Singapore

Optimal EEG Feature Selection by Genetic Algorithm for Classification of Imagination of Hand Movement

Mr. Pharino Chum, The School of Electrical Electronics Engineering, Chung-Ang University, Korea (South)
Mr. Seung-Min Park, The School of Electrical Electronics Engineering, Chung-Ang University, Korea (South)
Mr. Kwang-Eun Ko, The School of Electrical Electronics Engineering, Chung-Ang University, Korea (South)
Prof. Kwee-Bo Sim, The School of Electrical Electronics Engineering, Chung-Ang University, Korea (South)

Recognition and identification of faces using digital correlation

Mr. Leonardo Diaz, Upc, Colombia
Mrs. S. Arroyave, Upc, Colombia
Mr. L. Hernandez, Upc, Colombia
Dr. Cesar Torres, Upc, Colombia
Prof. Lorenzo Mattos, Upc, Colombia
Mrs. Yaileth Morales, Upc, Colombia
Mr. Fabio Vega, Upc, Colombia

Fingerprint verification by correlation using wavelet compression of preprocessing digital images

Mrs. Yaileth Morales, Investigador, Colombia
Dr. Cesar Torres, Director LOI, Colombia
Dr. Lorenzo Mattos, Coordinador LOI, Colombia
Mr. Leonardo Diaz, Investigador, Colombia
Mr. Fabio Vega, Investigador, Colombia

TT10 c - Systems Integration
B-1518, Friday 26th of October, 14h00

Chair/s: Antonio Luque, Kiyoshi Ohishi

Ultra-low Temperature Dependent ROIC for Capacitive Sensing Platforms

Mr. Raul Aragones Ortiz, Universitat Autònoma de Barcelona, Spain
Prof. Joan Oliver Malagelada, Universitat Autònoma de Barcelona, Spain
Prof. Carles Ferrer Ramis, Universitat Autònoma de Barcelona, Spain

Automatic Verification System for Doppler Kinemometers

Dr. Fco Javier Jiménez, Universidad Politécnica de Madrid, Spain
Dr. José De Frutos, Universidad Politécnica de Madrid, Spain
Prof. Manuel Vázquez-Rodríguez, Universidad Politécnica de Madrid, Spain

A simple high-performance respiratory sound acquisition instrument

Mr. Irwin Diaz, IPICyT, Mexico
Prof. Alejandro Marquez, Cicese, Mexico
Prof. Ricardo Nuñez, Cicese, Mexico

Identification Method of Sensor Directions and Sensitivities in Multi-Axis Accelerometer

Prof. Hitoshi Kimura, Tokyo Tech, Japan
Mr. Masashi Nakamura, Mitsubishi, Japan
Mr. Kodai Katou, Tokyo Tech, Japan
Prof. Norio Inou, Tokyo Tech, Japan
Mr. Minoru Yoshida, Hakusan Corp., Japan

Design of Temperature Control System toward Thermal Display with Fast and Precise Response

Mr. Hidetaka Morimitsu, Keio University, Japan
Prof. Seiichiro Katsura, Keio University, Japan

TT07 n - DC-DC Converter Topologies III
A-1170, Friday 26th of October, 16h00

Chair/s: Y. S. Lai, Bhim SIngh

Double Three-Phase Dual Active Bridge Converter for High Frequency High Current Applications

Dr. Bernardo Cougo, LAPLACE,Université Toulouse, France
Dr. Thierry Meynard, LAPLACE,Université Toulouse, France
Prof. Henri Schneider, Laas, France

Phase-Shifted Dual H-Bridge Converter with a Wide ZVS Range and Reduced Output Filter

Mr. Il-Oun Lee, Kaist, Korea (South)
Mr. Shin-Young Cho, Kaist, Korea (South)
Prof. Gun-Woo Moon, Kaist, Korea (South)

Isolated High-Efficiency DC/DC Converter for Photovoltaic Applications

Mr. Bas Vermulst, Eindhoven University of Technology, Netherlands
Mr. Korneel Wijnands, Eindhoven University of Technology, Netherlands
Dr. Jorge Duarte, Eindhoven University of Technology, Netherlands

Fault Analysis of Dual Active Bridge Converters

Ms. Eunice Ribeiro, Instituto de Telecomunicações/University of Coimbra, Portugal
Prof. António Marques Cardoso, Instituto de Telecomunicações/University of Beira Interior, Portugal
Prof. Chiara Boccaletti, Sapienza University of Rome, Italy

Two-dimensional Random PWM Technique for Full-Bridge DC/DC Converter

Prof. Yen-Shin Lai, National Taipei University of Technology, Taiwan
Mr. Bo-Yuan Chen, National Taipei University of Technology, Taiwan

SS59 c - Classical Control
A-1242, Friday 26th of October, 16h00

Chair/s: Yan Fei Liu, Hadi Kanaan

Fixed-Band Fixed-Frequency Hysteresis Current Control employed in APFs

Mr. Hani Vahedi, Ecole de Technologie Superieure, Canada
Mr. Ehsan Pashajavid, K.N.Toosi University of Technology, Iran
Prof. Kamal Al-Haddad, Ecole de Technologie Superieure, Canada

A Control Lyapunov Function-Based Controller for a Two-Stage AC/DC Converter

Dr. Majid Pahlevaninezhad, Queen's University, Canada
Ms. Suzan Eren, Queen's University, Canada
Dr. Alireza Bakhshai, Queen's University, Canada
Prof. Praveen Jain, Queen's University, Canada

Comparison of Orthogonal Quantity Generation Methods Used in Single-Phase Grid-Connected Inverters

Mr. Mohammad Ebrahimi, Isfahan University of Tech., Iran
Dr. Hamid R. Karshenas, Isfahan University of Tech., Iran
Mr. Mohammad Hassanzahraee, Queen's University, Canada

Feedback Quantizer vs Sigma-Delta Modulator for Voltage Source Inverters

Dr. Galina Mirzaeva, The University of Newcastle, Australia
Prof. Graham Goodwin, The University of Newcastle, Australia

Sequence-Based Lyapunov Stability of Power-Electronic Converters

Prof. Sudip Mazumder, University of Illinois, USA
Mr. Alireza Tajfar, University of Ilinois, USA

TT07 o - Renewable Energy Applications I
A-1300, Friday 26th of October, 16h00

Chair/s: Chandan Chakraborty, Peter Lehn

Topology Review of Single Phase Grid-Connected Module Integrated Converters for PV Applications

Mr. Edwin Fonkwe, Masdar Institute of Science and Technology, United Arab Emirates
Dr. Weidong Xiao, Masdar Institute of Science and Technology, United Arab Emirates
Dr. Vinod Khadkikar, Masdar Institute of Science and Technology, United Arab Emirates

A Novel Three-Level Changeover Circuit of Super-Capacitor Bank for Energy Storage Systems

Mr. Jin-Feng Nie, Guangdong Electric Power Design Institute, China
Prof. Xi Xiao, Department of Electrical Engineering, Tsinghua University, China
Dr. Zanxiang Nie, Department of Electrical Engineering, Tsinghua University, China
Mr. Peigen Tian, Department of Automation, China
Ms. Ruoxing Ding, Department of Electrical Engineering, Tsinghua University, China

Reactive Power Control of Single Phase Grid Tied Voltage Sourced Inverters for Residential PV Application

Mr. Xiangdong Zong, University of Toronto, Canada
Prof. Peter W. Lehn, University of Toronto, Canada

Bond graph and port-controlled Hamiltonian model of doubly-fed wind power system

Dr. Huihui Song, Harbin Institute of Technology at Weihai, China
Prof. Yanbin Qu, Harbin Institute of Technology at Weihai, China
Dr. Xinyu Wang, Harbin Institute of Technology at Weihai, China

Grid-connected Boost Inverter for Small-Wind Urban Integration: Analysis and Design

Mr. Freddy Flores-Bahamonde, Universidad Rovira i Virgili, Spain
Dr. Hugo Valderrama-Blavi, Universidad Rovira i Virgili, Spain
Mr. Josep M. Bosque, Universidad Rovira i Virgili, Spain
Mr. Antonio Leon-Masich, Universidad Rovira i Virgili, Spain
Prof. Luis Martinez-Salamero, Universidad Rovira i Virgili, Spain

SS53 a - Microgrids I
A-1302, Friday 26th of October, 16h00

Chair/s: Josep M. Guerrero, Baylon G. Fernandes

Cooperative Control with Virtual Selective Harmonic Capacitance for Harmonic Voltage Compensation in Islanded MicroGrids

Mr. Alexander Micallef, University of Malta, Malta
Dr. Maurice Apap, University of Malta, Malta
Prof. Cyril Spiteri-Staines, University of Malta, Malta
Prof. Josep Guerrero, Aalborg University, Denmark

Distributed Secondary Control for MicroGrids

Mr. Qobad Shaffiee, Aalborg, Denmark

Stability analysis and design of droop control method in dq frame for connection in parallel of distributed energy resources

Mrs. Estefanía Planas, Upv/Ehu, Spain
Mr. Asier Gil de Muro, Tecnalia. Energy Unit., Spain
Dr. Jon Andreu, Upv/Ehu, Spain
Mr. Inigo Kortabarria, Upv/Ehu, Spain
Mr. Inigo Martínez de Alegría, Upv/Ehu, Spain

Design and Experimental Validation of a Dual Mode VSI Control System for a Micro-grid with Multiple Generators

Mr. Andrés Vargas-Serrano, University of Chile, Chile
Dr. Doris Sáez, University of Chile, Chile
Mr. Lorenzo Reyes, University of Chile, Chile
Mr. Bernardo Severino, University of Chile, Chile
Dr. Rodrigo Palma-Behnke, University of Chile, Chile
Dr. Roberto Cárdenas, University of Chile, Chile

A Synchronization Technique for Microgrid reclosing after islanding operation

Mr. Mario Rizo, University of Alcala, Spain
Dr. Francisco Huerta, University of Alcala, Spain
Dr. Marco Liserre, Politecnico di Bari, Italy
Ms. Jorge Perez, University of Alcala, Spain
Dr. Emilio Bueno, University of Alcala, Spain

SS39 b - Multilevel Converters Applications, Topologies, Control and Modulation Techniques II
A-1340, Friday 26th of October, 16h00

Chair/s: Jose Ignacio Leon, Leopoldo G. Franquelo

Current control of the three phase five-level PUC-NPC converter

Dr. Youssef Ounejjar, Ecole de Technologie Superieure, Canada
Prof. Kamal Al-Haddad, Ecole de Technologie Superieure, Canada

DC-link Current Balancing and Ripple Reduction for Direct Parallel Current-Source Converters

Mr. Anping Hu, Hefei University of Technology, China
Prof. David Xu, Ryerson University, Canada
Prof. Jianhui Su, Hefei University of Technology, China
Prof. Bin Wu, Ryerson University, Canada

Fuzzy logic controller for five-level shunt active power filter under distorted voltage conditions

Mr. Benaissa Amar, Department of Electrical Engineering, University of Djelfa, Algeria
Dr. Rabhi Boualaga, Department of Electrical Engineering, University of Biskra, Algeria
Prof. Benkhoris Mohamed Fouad, IREENA, University of Nantes,Saint Nazaire, 44600, France, France
Prof. Moussi Ammar, Department of Electrical Engineering, University of Biskra, Algeria
Dr. Le Claire Jean-claude, IREENA, University of Nantes,Saint Nazaire, 44600, France, France

Minimization of the Capacitor Voltage Fluctuations of a Modular Multilevel Converter by Circulating Current Control

Mr. Ricard Picas, Technical University of Catalonia, Spain
Dr. Josep Pou, Technical University of Catalonia, Spain
Dr. Salvador Ceballos, Tecnalia, Spain
Prof. Vassilios Agelidis, The University of New South Wales, Austria
Dr. Maryam Saeedifard, Purdue University, USA

A Comparative Analysis of the Three-Level T-Type and Two-Level Two-Cell Coupled Interleaved Inverter

Dr. Petar Grbovic, Huawei Technologies Duesseldorf GmbH, Germany

SS05 c - Power Converters and Control for Distributed Generation I
A-1350, Friday 26th of October, 16h00

Chair/s: Akshay Rathore, Carl Ho

Control of single-phase inverter connected to the grid through an LCL filter

Dr. Gerardo Escobar, ABB Switzerland Ltd, Switzerland
Dr. Sami Pettersson, ABB Switzerland Ltd, Switzerland
Dr. Carl N.M Ho, ABB Switzerland Ltd, Switzerland

Control Strategy for a Standalone PV/Battery Hybrid System

Mr. Hisham Mahmood, University of Western Ontario, Canada
Mr. Dennis Michaelson, University of Western Ontario, Canada
Dr. Jin Jiang, University of Western Ontario, Canada

Magnetizing Inductance Assisted Wide Range ZVS Three-phase AC Link Current-fed Dc/Dc Converter with Active-clamp for Low DC Voltage Applications

Mr. Pan Xuewei, National University of Singapore, Singapore
Dr. Prasanna U. Rajagopal, National University of Singapore, Singapore
Dr. Akshay K. Rathore, National University of Singapore, Singapore

Generalized Microgrid Harmonic Compensation Strategies using DG units Interfacing Converters

Mr. Jinwei He, University of Alberta, Canada
Prof. Yun Wei Li, University of Alberta, Canada

A Triple-Droop Control Scheme for Inverter-Based Microgrids

Mr. Fei Luo, Department of Electronic and Information Engineering, The Hong Kong Polytechnic University, Hong Kong
Dr. Y.M. Lai, Department of Electronic and Information Engineering, The Hong Kong Polytechnic University, Hong Kong
Dr. K.H. Loo, Faculty of Engineering, The Hong Kong Polytechnic University, Hong Kong
Prof. Chi K. Tse, Department of Electronic and Information Engineering, The Hong Kong Polytechnic University, Hong Kong

TT08 f - Power Systems
A-1752, Friday 26th of October, 16h00

Chair/s: Mehrdad Kazerani, Pramod Agrawal

Research on the Field Current of a Doubly Salient Electromagnetic Generator with a Half-Controlled PWM Rectifier

Mr. Zhixin Mao, Nanjing University of Aeronautics and Astronautics, China
Prof. Zhihui Chen, Nanjing University of Aeronautics and Astronautics, China
Prof. Zhe Chen, Aalborg University, Denmark

Teaching Voltage Regulation Using A Tsc Type Svc

Dr. Eben-Ezer P. Silveira, Unifei, Brazil
Dr. Antonio Tadeu Lyrio Almeida, Unifei, Brazil
Dr. Angelo J. J Rezek, Unifei, Brazil
Dr. Robson Celso Pires, Unifei, Brazil

Medium Voltage Fan Save: Energy Efficient Fan Systems in Power Engineering, Part 1

Mr. Martin Sirovy, University of West Bohemia, Czech Republic
Prof. Zdenek Peroutka, University of West Bohemia, Czech Republic
Dr. Michalik Jan, University of West Bohemia, Czech Republic
Dr. Miroslav Byrtus, University of West Bohemia, Czech Republic

A New Hybrid Technique of Control and Protection for Three Phase Power Transformers

Mr. Adel Aktaibi, Memorial University of Newfoundland, Canada
Prof. MD. Azizur Rahman, Memorial University of Newfoundland, Canada

Comparison of Converter Losses in an LVDC Distribution

Ms. Jenni Rekola, Tampere University of Technology, Finland
Mr. Antti Virtanen, Tampere University of Technology, Finland
Mr. Juha Jokipii, Tampere University of Technology, Finland
Prof. Heikki Tuusa, Tampere University of Technology, Finland

TT03 h - Losses, Noise, Vibration and Testing
B-0904, Friday 26th of October, 16h00

Chair/s: Pragasen Pillay, Anthony Frias

On the Coefficients of Core Loss Formulas for Electrical machines.

Ms. Jemimah Akiror, Concordia University, Canada
Prof. Pragasen Pillay, Concordia University, Canada

Low Cost Solutions to Reduce Cogging Torque and Acoustic Noise of Small Brushed DC Motors for Automotive Radiator Cooling Fan Modules

Prof. Aldo Boglietti, Politecnico di Torino, Italy
Prof. Andrea Cavagnino, Politecnico di Torino, Italy
Prof. Alberto Tenconi, Politecnico di Torino, Italy

Excitability of different Modes of Vibration of Stator End Windings

Dr. Sven Exnowski, TU
Dortmund University, Germany

Mechanical and Electrical Quality Control Tests for Small DC Motors in Production Line

Dr. Enrico Concettoni, Research for Innovation Group, AEA - Loccioni Group, Italy
Dr. Cristina Cristalli, Research for Innovation Group, AEA - Loccioni Group, Italy
Mr. Stefano Serafini, Università Politecnica delle Marche - Dipartimento di Ingegneria Industriale e Scienze Matematiche, Italy

A Simplified Methodology for Parameters Measurement of an Axial Flux Permanent Magnet Motor Without Neutral Point

Mr. Delfim Pedrosa, Universidade do Minho, Portugal
Dr. Henrique Gonçalves, Universidade do Minho, Portugal
Mr. Bruno Exposto, Universidade do Minho, Portugal
Dr. Júlio Martins, Universidade do Minho, Portugal
Dr. J. Luiz Afonso, Universidade do Minho, Portugal

SS23 - Power Converters Control and Management in Electric and Fuel Cell Vehicles
B-0906, Friday 26th of October, 16h00

Chair/s: David Dorrell, Seldon Williamson

The eta-alpha-Pareto Front of Inductive Power Transfer Coils

Mr. Roman Bosshard, PES, ETH Zürich, Switzerland
Dr. Jonas Mühlethaler, PES, ETH Zürich, Switzerland
Prof. Johann Kolar, PES, ETH Zürich, Switzerland
Dr. Ivica Stevanovic, ABB Switzerland Ltd., Switzerland

An integrated EMI Suppression Y-Caps applicable to High Frequency High Power DC-DC Converters for Electric Vehicle

Dr. Majid Pahlevaninezhad, Queen's University, Canada
Dr. Djilali Hamza, Queen's University, Canada
Mr. Amish Servansing, Queen's University, Canada
Dr. Alireza Bakhshai, Queen's University, Canada
Prof. Praveen Jain, Queen's University, Canada

Range Extension Control System for Electric Vehicle Based on Searching Algorithm of Optimal Front and Rear Driving Force Distribution

Prof. Hiroshi Fujimoto, The University of Tokyo, Japan
Mr. Sho Egami, The University of Tokyo, Japan
Mr. Jun Saito, Mitsubishi Motors Corporation, Japan
Mr. Kazunori Handa, Mitsubishi Motors Corporation, Japan

Vision based Multi-rate Estimation and Control of Body Slip Angle for Electric Vehicles

Mr. Yafei Wang, The University of Tokyo, Japan
Mr. BinhMinh Nguyen, The University of Tokyo, Japan
Prof. Hiroshi Fujimoto, The University of Tokyo, Japan
Prof. Yoichi Hori, The University of Tokyo, Japan

Fault-Tolerant Operation of Power Converters in PHEVs Coupled by a Scott Transformer

Mr. Tuan Dat Mai, ELECTA-ESAT, KU Leuven, Belgium
Dr. Yonghua Cheng, Vito, Belgium
Prof. Johan Driesen, ELECTA-ESAT, KU Leuven, Belgium

SS15 a - Advances on Energy Storage Devices and Systems: Supercapacitors
B-0908, Friday 26th of October, 16h00

Chair/s: Hubert Razik, Federico Baronti

Modeling of Metallized Polymer Films Capacitor's Impedance

Mr. Maawad Makdessi, Ampere Laboratory, France
Dr. Ali Sari, Ampere Laboratory, France
Prof. Pascal Venet, Ampere Laboratory, France

Direct Current Control of a Battery-Ultracapacitor Power Supply

Dr. Branislav Hredzak, University of New South Wales, Australia
Prof. Vassilios G. Agelidis, University of New South Wales, Australia

A Simplified Power Management Strategy for a Supercapacitor/Battery Hybrid Energy Storage System using the Half-Controlled Converter

Mr. João Marcus Abreu Curti, The University of Tokyo, Department of Advanced Energy, Japan
Mr. Xiao Liang Huang, The University of Tokyo, Department of Advanced Energy, Japan
Dr. Ryo Minaki, The University of Tokyo, Department of Electrical Engineering, Japan
Prof. Yoichi Hori, The University of Tokyo, Department of Advanced Energy, Japan

Study of a Supercapacitor Energy Storage System designed to reduce frequency modulation on shipboard electric power system

Dr. Franck Scuiller, French Naval Academy Research Institute, France

Grid-Connected Marine Current Generation System Power Smoothing Control Using Supercapacitors

Mr. Zhibin Zhou, French Naval Academy, France
Dr. Franck Scuiller, French Naval Academy, France
Dr. Jean Frederic Charpentier, French Naval Academy, France
Prof. Mohamed Benbouzid, University of Brest, France
Prof. Tianhao Tang, Shanghai Maritime University, China

TT06 d - Mechatronics and Robotics IV
B-1502, Friday 26th of October, 16h00

Chair/s: John Y. Hung, Takeshi Mizuno

Multilayer Scheme for the Adaptive Cooperative Coordinated Control of Mobile Manipulators

Dr. Víctor Andaluz, FISEI Universidad Técnica de Ambato, Ecuador
Mr. Paúl Canseco, FISEI Universidad Técnica de Ambato, Ecuador
Dr. Andres Rosales, FIEE Escuela Politécnica Nacional, Ecuador
Dr. Flavio Roberti, INAUT Universidad Nacional de San Juan, Argentina
Prof. Ricardo Carelli, INAUT Universidad Nacional de San Juan, Argentina

Control of a Robot-Trailer System Using a Single Non-collocated Sensor

Mr. Michael L. Payne, Auburn University, USA
Prof. John Y. Hung, Auburn University, USA
Prof. David M. Bevly, Auburn University, USA
Mr. Bob J. Selfridge, U.S. Army Corps of Engineers, USA

Optimal Path Planning for an Autonomous Robot-Trailer System

Mr. Xin Yu, Auburn University, USA
Prof. John Y. Hung, Auburn University, USA

Study on the Observability of Double Parallel Magnetic Suspension Systems

Prof. Takeshi Mizuno, Saitama University, Japan
Mr. Yuji Ishino, Saitama University, Japan
Prof. Masaya Takasaki, Saitama University, Japan

Evaluations of Different Simultaneous Localization and Mapping (SLAM) Algorithms

Mr. Gurkan Tuna, Trakya University, Turkey
Dr. Kayhan Gulez, Yildiz Technical University, Turkey
Dr. Vehbi Cagri Gungor, Bahcesehir University, Turkey
Mr. Tarik Veli Mumcu, Yildiz Technical University, Turkey

SS12 b - High Precision Motion Control for Mechatronic Systems II
B-1504, Friday 26th of October, 16h00

Chair/s: Sehoon Oh, Hiroshi Fujioto

Load-Side Acceleration Control for Industrial Robot Arm with Axial Torsion

Mr. Takashi Yoshioka, Nagaoka University of Technology, Japan
Mr. Naoki Shimada, Nagaoka University of Technology, Japan
Prof. Kiyoshi Ohishi, Nagaoka University of Technology, Japan
Prof. Toshimasa Miyazaki, Nagaoka University of Technology, Japan

Robust Control Method for Industrial Servo Systems Based on Approximation of Fractional Order Integral

Mr. Hidetoshi Ikeda, Mitsubishi Electric Corporation, Japan
Mr. Hiroshi Sugie, Mitsubishi Electric Corporation, Japan

Development of Micro Wide Angle Fovea Lens

Prof. Sota Shimiu, The University of Tokyo, Japan
Mr. Motosuke Kiyohara, Kiyohara Optics, Japan
Prof. Takumi Hashizume, Waseda University, Japan

Synchronous Modulation of Cascaded Inverters of Asymmetrical Open-End Winding Motor Drive

Dr. Valentin Oleschuk, Academy of Sciences of Moldova, Moldova
Mr. Joel Prieto, Universidad de Sevilla, Spain
Prof. Federico Barrero, Universidad de Sevilla, Spain

Boost Diode Rectifier for Three-Phase Variable Speed Drives Supplied from the Single-Phase Mains: Analysis and Design

Dr. Petar Grbovic, Huawei Technologies Duesseldorf GmbH, Germany
Prof. Philippe Delarue, l'Université des Sciences et Technologies de Lille, France
Prof. Philippe Le Moigne, Ecole Centrale de Lille, France

SS63 - Information Technology in Automation
B-1506, Friday 26th of October, 16h00

Chair/s: Birgit Vogel-Heuser, Philipp Klein

Supporting integrated development of closed-loop PLC control software for production systems

Ms. Susanne Rösch, TU Munich, Germany
Mr. Daniel Schütz, TU Munich, Germany
Ms. Gülden Bayrak, TU Munich, Germany
Prof. Birgit Vogel-Heuser, TU Munich, Germany

Engineering of automated Manufacturing Systems with Mechatronic Objects

Prof. Michael Weyrich, University of Siegen, Germany
Mr. Philipp Klein, University of Siegen, Germany

Automation Systems - Formal Modeling of Temporal Change of Physical Structure

Mr. Markus Göring, Vattenfall Europe Nuclear Energy GmbH, Germany
Prof. Alexander Fay, Helmut Schmidt University / University of the Federal Armed Forces Hamburg, Germany

Investigation of the Use of Embedded Web Services in Smart Metering Applications

Mr. Vlado Altmann, University of Rostock, Germany
Mr. Jan Skodzik, University of Rostock, Germany
Dr. Frank Golatowski, University of Rostock, Germany
Prof. Dirk Timmermann, University of Rostock, Germany

Navigating between Tools in Heterogeneous Automation Systems Engineering Landscapes

Dr. Richard Mordinyi, CDL-Flex, Vienna University of Technology, Austria
Dr. Thomas Moser, CDL-Flex, Vienna University of Technology, Austria
Mr. Dietmar Winkler, CDL-Flex, Vienna University of Technology, Austria
Prof. Stefan Biffl, CDL-Flex, Vienna University of Technology, Austria

TT01 i - Robust Control
B-1514, Friday 26th of October, 16h00

Chair/s: Mohammed Tarbouchi, Ouassima akhrif

A Robust methodology to control the Air Path of a Diesel Engine

Mr. Chao Deng, University of Orleans, France
Dr. Guillaume Colin, University of Orleans, France
Prof. Yann Chamaillard, University of Orleans, France
Dr. Dominique Nelson Gruel, University of Orleans, France

Robust H∞ Control for the Turbocharged Air System Using the Multiple Model Approach

Mr. Anh Tu Nguyen, LAMIH - University of Valenciennes, France
Dr. Jimmy Lauber, LAMIH - University of Valenciennes, France
Prof. Michel Dambrine, LAMIH - University of Valenciennes, France

Robust Control Applied in Buck Boost Converter in a Photovoltaic System: a New Proposal

Mr. João Neto, Ufrn, Brazil
Prof. Anderson Cavalcanti, Ufrn, Brazil
Prof. Andres Salazar, Ufrn, Brazil

Delayed Non-fragile H-infinity Control for Offshore Steel Jacket Platforms

Prof. Baolin Zhang, China Jiliang University, China
Mr. Zuo-Wu Huang, China Jiliang University, China
Prof. Qing-Long Han, Central Queensland University, Australia

Robust Controller Design of Automotive Valve for Purpose of Emission Regulation

Mr. Yun She, Caterpillar, USA

SS22 - Ambient Intelligence of Mobile Robots or Vehicle with Human Factors
B-1516, Friday 26th of October, 16h00

Chair/s: Kanghyun Jo, Dietmar Bruckner

Influence of Psychoanalytic Defense Mechanisms on the Decision Making Process in Autonomous Agents

Mr. Friedrich Gelbard, Institute of Computer Technology, Vienna University of Technology, Austria
Dr. Dietmar Bruckner, Institute of Computer Technology, Vienna University of Technology, Austria

Removing Outliers of Large Scale Scene Models Based on Automatic Context Analysis and Convex Optimization

Mr. My-Ha Le, University of Ulsan, Korea (South)
Dr. Andrey Vavilin, University of Ulsan, Korea (South)
Prof. Kang-Hyun Jo, University of Ulsan, Korea (South)

Fast Human Detection Based on Parallelogram Haar-Like Features

Mr. Van-Dung Hoang, University of Ulsan, Korea (South)
Dr. Andrey Vavilin, University of Ulsan, Korea (South)
Prof. Kang-Hyun Jo, University of Ulsan, Korea (South)

Moving Object Detection in Omnidirectional Vision-based Mobile Robot

Mr. Chi-Min Oh, Chonnam National University, Korea (South)
Mr. Yong-Cheol Lee, Chonnam National University, Korea (South)
Mr. Dae-Young Kim, Chonnam National University, Korea (South)
Mr. Chil-Woo Lee, Chonnam National University, Korea (South)

SS32 - Embedded Systems and Reconfigurable SoCs
B-1518, Friday 26th of October, 16h00

Chair/s: Luis Gomes, Juan J. Rodriguez-Andina

Modeling and Simulation of Power Converter Systems Using SystemC System-Level Description Language

Dr. Denis Navarro, University of Zaragoza, Spain
Dr. Oscar Lucia, University of Zaragoza, Spain
Dr. Isidro Urriza, University of Zaragoza, Spain
Dr. Luis A. Barragan, University of Zaragoza, Spain
Mr. Oscar Jimenez, University of Zaragoza, Spain

Designing FPGA-based embedded systems with MARTE: a PIM to PSM converter

Mr. Roberto de Medeiros Farias Filho, Universidade de Sao Paulo, ICMC, Brazil
Ms. Marcilyanne Moreira Gois, Universidade de Sao Paulo, ICMC, Brazil
Dr. Vanderlei Bonato, Universidade de Sao Paulo, ICMC, Brazil

A tool to support Bluespec SystemVerilog coding based on UML diagrams

Mr. Sergio Durand, The University of São Paulo, Brazil
Prof. Vanderlei Bonato, The University of São Paulo, Brazil

FPGA-Based Laser Cladding System with Increased Robustness to Optical Defects

Mr. Jorge Rodriguez-Araujo, Aimen, Spain
Dr. Juan J. Rodríguez-Andina, University of Vigo, Spain
Dr. Jose Farina, University of Vigo, Spain
Mr. Felix Vidal, Aimen, Spain
Mr. Jose L. Mato, Aimen, Spain
Dr. M. Angeles Montealegre, Aimen, Spain

Analysing Storage Resources on Synchronous Dataflows using Petri Net Verification Techniques

Mr. Jose-Inacio Rocha, Escola Superior de Tecnologia de Setubal, Instituto Politecnico de Setubal, Portugal
Prof. Luis Gomes, Universidade Nova de Lisboa Faculdade de Ciencias e Tecnologia, Portugal
Prof. Octavio Dias, Escola Superior de Tecnologia de Setubal, Instituto Politecnico de Setubal, Portugal

SS24 b - Wind Turbine Modeling, Identification, Control and Faults Diagnosis II
B-1708, Friday 26th of October, 16h00

Chair/s: R. Wamkeue, Innocent Kamwa

Modelling and Control of a Pitch Controlled Wind Turbine Experiment Workstation

Dr. Adel Merabet, Saint Mary's University, Canada
Mr. Vigneshwaran Rajasekaran, Saint Mary's University, Canada
Mr. John Kerr, Saint Mary's University, Canada

Comparative Study of Speed Estimation Techniques for Sensorless Vector Control of Induction Machine

Prof. Mamadou Lamine Doumbia, University of Quebec, Canada
Mr. Abdelrahaman Yousif Eshag Lesan, University of Quebec, Canada

Reactive Power Management Modeling of an Autonomous Wind-Diesel Power Plant

Mr. Tommy Andy Theubou Tameghe, Université du Québec en Abitibi-Témiscamingue, Canada
Prof. René Wamkeue, Université du Québec en Abitibi-Témiscamingue, Canada
Dr. Innocent Kamwa, Hydro-Québec (IREQ), Canada

Impedance Spectroscopy Failure Diagnosis of a DFIG-Based Wind Turbine

Dr. Mohamed Becherif, FCLAB UMR CNRS 3539/FEMTO-ST UTBM University, France
Dr. Assia Henni, UTBM University, France
Prof. Mohamed Benbouzid, University of Brest, EA 4325 LBMS, France
Dr. Maxime Wack, FCLAB UMR CNRS 3539, UTBM University, France

Saturday 27th of October

TU 8 - Control of Power Inverters for Renewable Energy and Smart Grid Integration
A-1150, Saturday 27th of October, 08h00

Lecturer/s: Dr. Qing-Chang Zhong

TU 7 - Rating, sizing and design of drives for electric and hybrid vehicles
A-1160, Saturday 27th of October, 08h00

Lecturer/s: Dr. David Dorrell, Dr. Sheldon Willamson, Dr. T. Rahman

TT07 p - Soft-Switched Converters
A-1170, Saturday 27th of October, 08h00

Chair/s: Ashoka Bhat, Handy Fortin Blanchette

A Zero-Voltage and Zero-Current Switching Full Bridge Converter using an Auxiliary Circuit

Mr. In-Ho Cho, Kaist, South Korea
Prof. Gun-Woo Moon, Kaist, South Korea

Active-Clamp Forward Converter With Asymmetric Transformer Turns For Reducing Transformer DC Offset Current

Mr. Byoung-Hee Lee, Kaist, South Korea
Mr. Young-Do Kim, Kaist, South Korea
Mr. Moon-Young Kim, Kaist, South Korea
Mr. In-Ho Cho, Kaist, South Korea
Prof. Gun-Woo Moon, Kaist, South Korea

Soft Switching Design of Isolated Boost Converter with Coupled Inductors

Prof. Hao Ma, College of Electrical Engineering, Zhejiang University, China
Mr. Longyu Chen, College of Electrical Engineering, Zhejiang University, China
Mr. Jing Li, College of Electrical Engineering, Zhejiang University, China

Zero Current Switching Type Class DE Rectifier

Mr. Tsukasa Misawa, Tokyo University of Sience, Japan
Mr. Kazuaki Fukui, Tokyo University of Sience, Japan
Dr. Hirotaka Koizumi, Tokyo University of Sience, Japan

Analysis, Design and Evaluations of a Soft Switching PWM DC-DC Converter with Phase Shift-Controlled ZCS Active Hybrid Rectifier

Prof. Tomokazu Mishima, Graduate School of Maritime Science, Kobe University, Japan
Mr. Kouhei Akamatsu, Graduate School of Maritime Science, Kobe University, Japan
Prof. Mutsuo Nakaoka, Electric Energy Saving Research Center, Kyungnam University, Korea (South)

Isolated soft-switching HFAC-link 3-phase ac-ac converter using a single-phase HF transformer

Mr. Hamidreza Keyhani, Texas A&M University, USA
Prof. Hamid A. Toliyat, Texas A&M University, USA
Dr. Maja Harfman Todorovic, GE Global Research, USA
Dr. Rixin Lai, GE Global Research, USA
Dr. Rajid Datta, GE Global Research, USA

SS43 c - New Trends in Converter Topologies and Control Methods for Active Power Distribution Grids III
A-1242, Saturday 27th of October, 08h00

Chair/s: Enrique Romero-Cadaval, Vitor Pires

IDA-PBC Control of a Three-Phase Front-End Converter

Mr. Federico Serra, Grupo de Electrónica Aplicada (GEA), Argentina
Dr. Cristian De Angelo, Grupo de Electrónica Aplicada (GEA), Argentina
Dr. Daniel Forchetti, Grupo de Electrónica Aplicada (GEA), Argentina

Impact of Phase-shift Modulation on the Performance of a Single-stage Bidirectional Electric Vehicle Charger

Mr. Diogo Varajão, Inesc Tec, Feup, Portugal
Prof. Rui Esteves Araujo, Inesc Tec, Feup, Portugal
Dr. Carlos Moreira, Inesc Tec, Feup, Portugal
Prof. Joao Peças Lopes, Inesc Tec, Feup, Portugal

Intelligent Electronic Device for Smart Grid: Statistical approach applied to event detection

Ms. Isabel Moreno-Garcia, Universidad de Cordoba, Spain
Prof. Antonio Moreno-Munoz, Universidad de Cordoba, Spain
Mr. Francisco Domingo-Perez, Universidad de Alcala de Henares, Spain
Prof. Victor Pallares-Lopez, Universidad de Cordoba, Spain
Prof. Rafael Real-Calvo, Universidad de Cordoba, Spain
Prof. Juan Jose Gonzalez-de-la-Rosa, Universidad de Cadiz, Spain

Assessment of a Battery Charger for Electric Vehicles with Reactive Power Control

Mr. Vítor Monteiro, University of Minho, Portugal
Dr. J. G. Pinto, University of Minho, Portugal
Mr. Bruno Exposto, University of Minho, Portugal
Dr. Henrique Gonçalves, University of Minho, Portugal
Dr. João C. Ferreira, ADEETC - ISEL - Lisbon Superior Institute of Engineering, Portugal
Prof. Carlos Couto, University of Minho, Portugal
Dr. João L. Afonso, University of Minho, Portugal

State of the Art of Active Power Electronic Transformers for Smart Grids

Dr. Indrek Roasto, Tallinn University of Technology, Estonia
Prof. Enrique Romero-Cadaval, University of Extremadura, Spain
Prof. Joao Martins, Universidade Nova de Lisboa, Portugal
Dr. Robert Smolenski, University of Zielona Gora, Poland

Battery monitoring using high frequency impedance modulation through series power line

Dr. Andrew Stepanov, Riga Technical University, Latvia
Mr. Maksim Vorobyov, Riga Technical University, Latvia
Prof. Ilya Galkin, Riga Technical University, Latvia

TT07 q - Power Devices Technology
A-1300, Saturday 27th of October, 08h00

Chair/s: P. Palmer, Alex Huang

IGBT Series Connection under Active Voltage Control with Temporary Clamp

Dr. Patrick Palmer, University of Cambridge, United Kingdom
Mr. Weiwei He, University of Cambridge, United Kingdom
Mr. Xueqiang Zhang, University of Cambridge, United Kingdom
Mr. Jin Zhang, University of Cambridge, United Kingdom
Mr. Mark Snook, Amantys Ltd., United Kingdom

Proposal and Analysis of Gate Drive Circuit Suitable for GaN-FET

Mr. Fumiya Hattori, Shimane University, Japan
Prof. Masayoshi Yamamoto, Shimane University, Japan

Field Stop Shorted Anode Trench IGBT for Induction Heating Appliances

Dr. Jae-Eul Yeon, Fairchild Korea Semiconductor, Korea (South)
Mr. Min-Young Park, Fairchild Korea Semiconductor, Korea (South)
Prof. Kyu-Min Cho, Yuhan University, Korea (South)
Prof. Hee-Jun Kim, Hanyang University, Korea (South)

Dead-time Minimisation Using Active Voltage Control Gate Drive for High-power IGBT Converters

Dr. Patrick R. Palmer, Cambridge University Engineering Department, United Kingdom
Mr. Xin Yang, Cambridge University Engineering Department, United Kingdom
Mr. Weiwei He, Cambridge University Engineering Department, United Kingdom

Characterization and Application of Next-Generation SiC Power Devices for High-Frequency Isolation Bidirectional DC-DC Converter

Mr. Biao Zhao, Tsinghua University, China
Mr. Qiang Song, Tsinghua University, China
Mr. Wenhua Liu, Tsinghua University, China
Mr. Yandong Sun, Tsinghua University, China

Toward an optimal Heisenberg's closed-loop gate drive for Power MOSFETs

Dr. Nicolas Patin, Utc/Lec, France
Ms. Maria Lluis Vinials, Utc/Lec, France

TT09 g - Wind Energy II
A-1302, Saturday 27th of October, 08h00

Chair/s: Marco Trapanese, Mamadou Lamine DOUMBIA

Vector Control of Squirrel-cage Induction Generator for Stand-Alone Wind Power Generation

Dr. Miloud Rezkallah, Ets, Canada
Prof. Ambrish Chandra, Ets, Canada
Prof. Bhim Singh, IIT Delhi, India
Prof. Mouhamed El Kahel, Alstom Renewable Power Hydro, Canada

Comparison of Fixed Speed Wind Turbines Models: A Case Study

Mr. Gonzalo Bustos, Universidad de Chile, Chile
Dr. Luis S. Vargas, Universidad de Chile, Chile
Mr. Freddy Milla, Universidad de Chile, Chile
Dr. Doris Sáez, Universidad de Chile, Chile
Prof. Hamid Zareipour, University of Calgary, Canada
Mr. Alfredo Nuñez, Delft University of Technology, Netherlands

Interconnection of Wind Farms with Grid using a MTDC Network

Dr. Yuan Fu, North China Electric Power University, China

Inverter based Voltage Sag Generator with PR-controller

Mr. Andreas Uphues, Retostronik GmbH, Germany
Mr. Kilian Nötzold, Retostronik GmbH, Germany
Dr. Ralf Wegener, University of Wuppertal, Germany
Prof. Stefan Soter, University of Wuppertal, Germany
Mr. Richard Griessel, Delta Energy Systems Soest, Germany

Use of Adaptive Linear Algorithms for Very Short-Term Prediction of Wind Turbine Output Power

Mr. Mehdi Tohidian, Amirkabir University of Technology, Iran
Prof. Hesam Sadeghi, Amirkabir University of Technology, Iran
Prof. Adel Nasiri, UW-Milwaukee, USA
Dr. Ali Esmaili, UW-Milwaukee, USA
Mr. Ramezan-Ali Naghizadeh, Amirkabir University of Technology, Iran
Prof. Ali Reza, UW-Milwaukee, USA

Small Wind Turbines in Grid-Interactive Microgrids

Dr. Natalia Angela Orlando, Politecnico di Bari, Italy
Dr. Antonella Nagliero, Politecnico di Bari, Italy
Dr. Rosa A. Mastromauro, Politecnico di Bari, Italy
Prof. Marco Liserre, Politecnico di Bari, Italy
Prof. Antonio Dell'Aquila, Politecnico di Bari, Italy

SS44 - Impedance Source Inverters (ZSIs) and their Modified and Improved Topologies
A-1340, Saturday 27th of October, 08h00

Chair/s: Haitham Abu-Rub, Abdellah Kouzou

Comprehensive Analysis of Z Source DC/DC Converters for DC power supply systems

Prof. Saravanan Vasudevan, Assistant Professor, India

Analysis of Space Vector Modulations for Three-phase Z-Source / Quasi-Z-Source Inverter

Ms. Yushan Liu, Texas A&M University at Qatar, Qatar
Prof. Haitham Abu-Rub, Texas A&M University at Qatar, Qatar
Prof. Baoming Ge, Michigan State University, USA
Prof. FangZheng Peng, Michigan State University, USA

Carrier-Based PWM for Z-Source Inverters

Mr. Arturo A. Arias M., Ph.D. Student, Germany
Prof. Wilfried Hofmann, Professor, Germany

Emulation of a Micro-Hydro-Turbine for Stand-Alone Power Plants with Z-Source Inverter

Mr. Manuel Steinbring, Universität Siegen, Germany
Prof. Mario Pacas, Universität Siegen, Germany
Mr. Mohammed Alnajjar, Universität Siegen, Germany

DSP based PWM control of Switched Boost Inverter for DC Nanogrid applications

Mr. Ravindranath Adda, Department of Electrical Engineering, Indian Institute of Technology Kanpur, India
Mr. Olive Ray, Department of Electrical Engineering, Indian Institute of Technology Kanpur, India
Dr. Santanu Mishra, Department of Electrical Engineering, Indian Institute of Technology Kanpur, India
Prof. Avinash Joshi, Department of Electrical Engineering, Indian Institute of Technology Kanpur, India

Quasi-Z-Source Matrix Converter Based Induction Motor Drives

Mr. Shuo Liu, Beijing Jiaotong University, China
Prof. Baoming Ge, Michigan State University, United States
Prof. Haitham Abu-Rub, Texas A&M University at Qatar, Qatar
Prof. Fang Z. Peng, Michigan State University, United States
Ms. Yushan Liu, Beijing Jiaotong University, China

SS05 d - Power Converters and Control for Distributed Generation III
A-1350, Saturday 27th of October, 08h00

Chair/s: Yunwei Li, Hussain Athab

Reactive Power Control for Voltage Support During Type C Voltage-Sags

Mr. Antonio Camacho, Technical University of Catalonia, Spain
Mr. Miguel Castilla, Technical University of Catalonia, Spain
Mr. Jaume Miret, Technical University of Catalonia, Spain
Mr. José Matas, Technical University of Catalonia, Spain
Mr. Eduardo Alarcón-Gallo, Technical University of Catalonia, Spain
Mr. Luis García de Vicuña, Technical University of Catalonia, Spain
Mr. Pau Martí, Technical University of Catalonia, Spain

Modeling and Control of Grid Connected Voltage Source Converter for Power Sharing

Dr. Alka Singh, Delhi Technological University, India
Prof. Bhim Singh, IIT Delhi, India

Sensorless Control with Startup Procedure and Grid Fault Detection for Three-Phase VSI with LCL Filter

Mr. Bjarte Hoff, Narvik University College, Norway
Mr. Waldemar Sulkowski, Narvik University College, Norway

Self-optimization of Photovoltaic System Power Generation Based on Sliding Mode Control

Mr. Ayedh Alqahtani, The Ohio State University, USA
Prof. Vadim Utkin, The Ohio State University, USA

Step-by-step Design of an LCL Filter for Three-phase Grid Interactive Converter

Mr. Shahil Shah, GE Global Research, Bangalore, India

Auto-Synchronization of LC filter based Front-end Converter with Parallel Inverters based Weak Distorted Island Grid using Voltage Injection

Mr. Shahil Shah, IIT Kanpur, India
Prof. Partha Sarathi Sensarma, IIT Kanpur, India

TT08 g - Power Systems
A-1752, Saturday 27th of October, 08h00

Chair/s: Pierre Jean Lagace, Mo yuen Chow

The Return of Investment Analysis of a PHEV Charging Station with Coordinated Charging

Mr. Dawei He, Georgia Institute of Technology, USA
Mr. Weixuan Lin, Tsinghua, China
Mr. Pascal Ntsama, Georgia Institute of Technology, USA
Prof. Ronald Harley, Georgia Institute of Technology, USA

Real Time Capability Curve Based On Data Provided By The Power System State Estimator

Dr. Eben-Ezer P. Silveira, Unifei, Brazil
Dr. Antonio Tadeu Lyrio Almeida, Unifei, Brazil
Dr. Robson Celso Pires, Unifei, Brazil

Harmonic Power Filters for Oil Drilling Rigs: A Case Study

Mr. Appa Rao Dekka, The Petroleum Institute, United Arab Emirates
Dr. Abdul R Beig, The Petroleum Institute, United Arab Emirates
Dr. Youssef Abdel Magid, The Petroleum Institute, United Arab Emirates
Mr. Mohammad Salem Al Rahis, National Drilling Company, United Arab Emirates

Power Flow Methods for Improving Convergence

Prof. Pierre Jean Lagace, Ets, Canada

Sampling Rate Selection Influences on Incremental Cost Consensus Algorithm in Decentralized Economic Dispatch

Ms. Xichun Ying, Student Member, USA
Prof. Mo-Yuen Chow, Fellow, USA

TT03 i - Induction Motor Drives
B-0904, Saturday 27th of October, 08h00

Chair/s: Martin Ganchev, Chris Gerada

Extended Vector Control of a Rotating Power Electronic Brushless Doubly-Fed Induction Generator under Unsymmetrical Voltage Sags

Mr. Naveed ur Rehman Malik, Royal Institute of Technology (KTH), Sweden
Prof. Chandur Sadarangani, Royal Institute of Technology (KTH), Sweden

Speed Sensorless Instantaneous Power Control of Induction Motor Drives

Mr. Mehdi Farasat, University of Nevada, Reno, USA
Mr. Ekrem Karaman, University of Nevada, Reno, USA
Prof. Andrzej Trzynadlowski, University of Nevada, Reno, USA
Prof. M.Sami Fadali, University of Nevada, Reno, USA

Efficiency Optimization of Vector Controlled Induction Motor Drive

Ms. Mini Sreejeth, Delhi Technological University, India
Prof. Madhusudan Singh, Delhi Technological University, India
Prof. Parmod Kumar, Delhi Technological University, India

Decoupling and Sensorless Vector Control Scheme for Single-Phase Induction Motor Drives

Mr. Rodrigo Z. Azzolin, Federal University of Santa Maria, Brazil
Mr. Rodrigo P. Vieira, Federal University of Santa Maria, Brazil
Ms. Cristiane C. Gastaldini, Federal University of Santa Maria, Brazil
Dr. Hilton A. Gründling, Federal University of Santa Maria, Brazil
Mr. Thiago A. Bernardes, Federal University of Santa Maria, Brazil

Cascaded Continuous-time Model Predictive Control of Induction Motor

Mr. Lu Gan, RMIT University, Australia
Prof. Liuping Wang, RMIT University, Australia

Discrete-time Sliding Mode Rotor Flux and Rotor Speed Observer for Induction Machine drives

Dr. Rodrigo Padilha Vieira, Unipampa, Brazil
Mrs. Cristiane Cauduro Gastaldini, Unipampa, Brazil
Mr. Rodrigo Zelir Azzolin, Furg, Brazil
Prof. Hilton Abíllio Gründling, Ufsm, Brazil

TT03 j - Electrical Machine Control
B-0906, Saturday 27th of October, 08h00

Chair/s: Giovanni Franceschini, Vincent Lanfranchi

Adaptive Vector Control of Permanent Magnet Synchronous Machines with Speed Estimation

Dr. Hicham Chaoui, Université du Québec à Trois-Rivières, Canada
Prof. Pierre Sicard, Université du Québec à Trois-Rivières, Canada

Position Control of PMSM based on Augmented Fuzzy Takagi-Sugeno SISO Models and LMIs

Mr. Raymundo Cordero, Ufrj, Brazil
Dr. Walter Suemitsu, Ufrj, Brazil
Mr. João Onofre, Ufms, Brazil
Mr. Andre Muniz, Ufms, Brazil
Mr. Rene Capitanio, Ufms, Brazil

Fuzzy Direct Torque Control of Switched Reluctance Motor

Mr. Sofiane Fahas, Université Laval, Canada
Prof. Hoang Le-Huy, Université Laval, Canada
Dr. Innocent Kamwa, IREQ Hydro-Québec, Canada

A Study and Design of a Position Tracking Control for an 8/6 Switched Reluctance Machine

Prof. Silviano Rafael, Escola Superior de Tecnologia de Setúbal, Portugal
Prof. Paulo Branco, Instituto Superior Técnico de Lisboa, Portugal
Prof. Armando Pires, Instituto Politécnico de Setúbal, Portugal

Application of Frequency Domain Multiplexing for the Reduction of ADCs in Vector Control of PMSM

Mr. Raymundo Cordero, Ufrj, Brazil
Dr. Walter Suemitsu, Ufrj, Brazil
Dr. João Onofre, Ufms, Brazil
Mr. Andre Muniz, Ufms, Brazil
Mr. Rene Capitanio, Ufms, Brazil

Load Torque and Moment of Inertia Observability Analysis for Alternating Current Drive Sensorless Control

Mr. Ivo Herman, Brno University of Technology, Czech Republic
Mr. Pavel Vaclavek, Brno University of Technology, Czech Republic

SS64 - Innovations in Electrical Machine Design for Variable-Speed and Power Drives
B-0908, Saturday 27th of October, 08h00

Chair/s: David Dorrell, Shah Asif Rahman

Reduction in Current Harmonics of Electrolytic Capacitor-less Diode Rectifier using Inverter-controlled IPM Motor

Mr. Hiroaki Utsugi, Nagaoka University of Technology, Japan
Prof. Kiyoshi Ohishi, Nagaoka University of Technology, Japan
Dr. Hitoshi Haga, Nagaoka University of Technology, Japan

Optimal Design and Implementation of a Permanent Magnet Linear Vernier Machine for Direct-drive Wave Energy Extraction

Mr. Wenlong Li, The University of Hong Kong, Hong Kong
Prof. K.T. Chau, The University of Hong Kong, Hong Kong
Mr. Christopher H.T. Lee, The University of Hong Kong, Hong Kong

Theoretical Research on Short Circuit Fault of Rotor Inner Winding in Large Turbo Generator

Mr. Bin Qin, Sichuan University, China
Dr. Wei Xu, Sichuan University, China
Prof. Nian Liu, Sichuan University, China
Mr. Yunhong Zhang, Sichuan University, China
Mr. Jiefeng Hu, Uts, Australia
Prof. Jianguo Zhu, Uts, Australia

Evaluation of the magnetization direction effects on ferrite PM brushless fractional machines

Prof. Luca Ferraris, Politecnico di Torino, Italy
Prof. Paolo Ferraris, Politecnico di Torino, Italy
Dr. Emir Po□ković, Politecnico di Torino, Italy
Prof. Alberto Tenconi, Politecnico di Torino, Italy

Research on Lightning Over-Voltage in 1000kV Gas Insulated Switchgear Substation

Mr. Yu Zhang, Sichuan University, China
Dr. Wei Xu, Sichuan University, China
Prof. Nian Liu, Sichuan University, China
Mr. Yunhong Zhang, Sichuan University, China
Mr. Jiefeng Hu, Uts, Australia
Prof. Jianguo Zhu, Uts, Australia

SS55 a - Technologies and Architectures for future Cloud-based Industrial Systems I
B-1502, Saturday 27th of October, 08h00

Chair/s: Stamatis Karnouskos, Armando W Colombo

A SOA-based architecture for empowering future collaborative cloud-based industrial automation

Mr. Stamatis Karnouskos, SAP Research, Germany
Prof. Armando Walter Colombo, Schneider Electric, Germany
Dr. Thomas Bangenman, Ifak, Germany
Mr. Keijo Manninen, Honeywell, Finland
Mr. Roberto Camp, Prodatec, Finland
Mr. Marcel Tilly, Microsoft, Germany
Dr. Petr Stluka, Honeywell, Czech Republic
Mr. Francois Jammes, Schneider Electric, France
Prof. Jerker Delsing, Ltu, Sweden
Prof. Jens Eliasson, Ltu, Sweden

Migration of Industrial Process Control Systems into Service Oriented Architecture

Prof. Jerker Delsing, Lulea University of Technology, Sweden
Dr. Fredrik Rosekqvist, Midrco Electric, Sweden
Mr. Oscar Carlsson, Midroc Electric, Sweden
Dr. Armando W. Colombo, University of Applied Sciences Emden, Germany
Dr. Thomas Bangemann, Ifak, Sweden

Towards an Energy Management System of Systems. An Industrial Case Study

Mr. Dorian Oswaldo Mora Sanchez, Politecnico di Milano; Schneider Electric Automation GmbH, Germany
Prof. Marco Taisch, Politecnico di Milano, Italy
Prof. Armando Walter Colombo, University of Applied Sciences of Emden/Leer, Schneider Electric Automation GmbH, Germany

Towards a lightweight CEP engine for embedded systems

Dr. Pawel Pietrzak, Luleå Univ. of Technology, Sweden
Prof. Per Lindgren, Luleå Univ. of Technology, Sweden
Mr. Henrik Mäkitaavola, Luleå Univ. of Technology, Sweden

A Dynamic Algorithm to Improve Wireless Sensor Networks Management

Prof. Mario Collotta, Kore University of Enna, Italy
Mr. Luca Gentile, Kore University of Enna, Italy
Mr. Giovanni Pau, Kore University of Enna, Italy
Mr. Gianfranco Scatà, Kore University of Enna, Italy

SS29 c - Towards a more Efficient Lighting III
B-1504, Saturday 27th of October, 08h00

Chair/s: Marco Antonio Dalla Costa, Francisco Azcondo

Proposal of a Low-Cost LED Driver for a Multistring Street Lighting Luminaire

Mr. Pedro Almeida, Federal University of Juiz de Fora, Brazil
Mr. João Márcio Jorge, Federal University of Juiz de Fora, Brazil
Mr. Daniel Botelho, Federal University of Juiz de Fora, Brazil
Mr. Henrique Braga, Federal University of Juiz de Fora, Brazil
Mr. Danilo Pinto, Federal University of Juiz de Fora, Brazil

Use of Current Controlled Mutual Inductor to Limit Recycling Current in the AHB-Flyback Converter

Mr. Francesco Sichirollo, University of Padova, Italy
Prof. J. Marcos Alonso, University of Oviedo, Spain
Prof. Giorgio Spiazzi, University of Padova, Italy

Pulsed Current Source to Drive High-Brightness LED Lamps

Dr. Christian Branas, University of Cantabria, Spain
Dr. Francisco J. Azcondo, University of Cantabria, Spain
Dr. Rosario Casanueva, University of Cantabria, Spain
Dr. Francisco J. Díaz, University of Cantabria, Spain
Ms. Victor M. Lopez, University of Cantabria, Spain
Ms. Alejandro Navarro, University of Cantabria, Spain

Intelligent Power LED Lighting System With Wireless Communication

Mr. Hugo M. Matoso, Federal University of Minas Gerais, Brazil
Dr. Lenin M. F. Morais, Federal University of Minas Gerais, Brazil
Dr. Porfírio C. Cortizo, Federal University of Minas Gerais, Brazil
Dr. Pedro F. Donoso-Garcia, Federal University of Minas Gerais, Brazil

Automatic Lamp Detection Technique for Self-Oscillating Fluorescent Lamp Electronic Ballasts

Mr. Juliano de Pelegrini Lopes, Federal University of Santa Maria, Brazil
Mr. Maikel Fernando Menke, Federal University of Santa Maria, Brazil
Prof. Fábio Ecke Bisogno, Federal University of Santa Maria, Brazil
Prof. Ricardo Nederson do Prado, Federal University of Santa Maria, Brazil
Prof. Álysson Raniere Seidel, Federal University of Santa Maria, Brazil
Prof. José Marcos Alonso Alvarez, Universidad de Oviedo, Spain

Design Considerations of a Half-Bridge LCC Inverter with Current Balancing for AC-LED

Dr. Ka Hong Loo, Faculty of Engineering, The Hong Kong Polytechnic University, Hong Kong
Dr. Yuk Ming Lai, Department of Electronic and Information Engineering, The Hong Kong Polytechnic University, Hong Kong
Prof. Chi Kong Tse, Department of Electronic and Information Engineering, The Hong Kong Polytechnic University, Hong Kong

SS46 - Design, Modeling, Simulation and Performance Measurement of Large Electrical Machines in the Industry
B-1506, Saturday 27th of October, 08h00

Chair/s: Arezki Merkhouf, Pargsen Pillay

Multiconductor Cable Modeling for EMI Simulations in Power Electronics

Dr. Ivica Stevanovic, ABB Switzerland Ltd., Corporate Research, Switzerland
Dr. Bernhard Wunsch, ABB Switzerland Ltd., Corporate Research, Switzerland
Dr. Gian Luigi Madonna, ABB Switzerland Ltd., Corporate Research, Switzerland
Mr. Mircea-Florian Vancu, Power Electronic Systems Lab, Swiss Federal Institute of Technology Zurich (ETHZ), Switzerland
Dr. Stanislav Skibin, ABB Switzerland Ltd., Corporate Research, Switzerland

Accurate Matlab/Simulink model of a Power Generation System Based on Fuel Cells

Prof. Adriano Carvalho, Faculdade de Engenharia da Universidade do Porto, Portugal
Mrs. Maria Teresa Outeiro, Institute of Engineering, Polytechnic Institute of Coimbra, Portugal

Photovoltaic Model for Circuit Simulation

Dr. Jan Leuchter, University of Defence, Czech Republic
Prof. Pavol Bauer, Delft University of Technology, Netherlands
Prof. Karel Zaplatilek, University of Defence, Czech Republic

A comparison of machine modeling methods for real time applications

Mr. Fletcher E. Fleming, Fsu-Caps, USA
Dr. Chris S. Edrington, Fsu-Caps, USA

Model-Based Fault Detection and Isolation Algorithm of Current Sensor for IPMSM

Mr. Byunghwan Lee, Hanyang University, Korea (South)
Mr. Namju Jeon, Hanyang University, Korea (South)
Prof. Hyeongcheol Lee, Hanyang University, Korea (South)

A single phase PSCad electric arc furnace model

Dr. Leonard White, NC State University, USA
Dr. Subhashish Bhattacharya, NC State University, USA

TT01 j - Power Systems
B-1514, Saturday 27th of October, 08h00

Chair/s: Francis Okou, Hideki Hashimoto

Adaptive Speed Regulation of Gearless Wind Energy Transfer Systems

Mr. Sina Hamzehloiua, Purdue School of Engineering and Technology, Indianapolis, USA
Prof. Afshin Izadian, Purdue School of Engineering and Technology, Indianapolis, USA

Development of a High-Speed Turbo-Generator Supported by Active Magnetic Bearings

Mr. Fabiano Camargo Rosa, Muteki Automação LTDA, Brazil
Dr. Fabio Lima, University Center of FEI, Brazil
Dr. Marco Antonio Fumagalli, Muteki Automação LTDA, Brazil

Adaptive Fuzzy Flatness-based Excitation Control for Power System Generators

Prof. Hassan Yousef, Squ, Oman
Dr. Mohammed Hamdy, Menofia University, Egypt

Robust Control of an Islanded Microgrid

Mr. Joel Steenis, Arizona State University, USA
Prof. Konstantinos Tsakalis, Arizona State University, USA
Prof. Raja Ayyanar, Arizona State University, USA

Virtual torque control in wind generation with doubly fed induction generator

Mr. Daniel Dolz, Universitat Jaume I, Spain
Dr. Ignacio Peñarrocha, Universitat Jaume I, Spain
Dr. Néstor Aparicio, Universitat Juame I, Spain
Dr. Roberto Sanchis, Universitat Juame I, Spain

SS48 - Aircraft Systems Modeling, Simulation and Optimization
B-1516, Saturday 27th of October, 08h00

Chair/s: Ruxandra Botez, Jules O

Civil turbofan engines thrust generic model

Mr. Luis Fajardo Rodriguez, École de Technologie Supériore, Canada
Dr. Ruxandra Mihaela Botez, École de Technologie Supériore, Canada

Simulation and analysis of a fuel cell/battery hybrid power supply for More-Electric Aircraft

Prof. Jenica Ileana Corcau, University of Craiova, Romania
Prof. Teodor Lucian Grigorie, University of Craiova, Romania
Prof. Liviu Dinca, University of Craiova, Romania

Multidomain high-detailled modeling of an electro-hydrostatic actuator and advanced position control

Mr. Martin Gendrin, École de technologie supérieure, Canada
Prof. Louis Dessaint, École de technologie supérieure, Canada

Weight Functions Method application on a delta-wing X-31 configuration

Ms. Nicoleta Anton, École de technologie supérieure, Canada

Vertical profile optimization for the Flight Management System CMA-9000 using the golden section search method

Mr. Roberto Salvador Félix Patrón, ETS, Laboratory of Research in Active Controls, Avionics and AeroServoElasticity (www.larcase.etsmtl.ca), Canada
Dr. Ruxandra Mihaela Botez, ETS, Laboratory of Research in Active Controls, Avionics and AeroServoElasticity (www.larcase.etsmtl.ca), Canada
Mr. Dominique Labour, CMC Electronics-Esterline, Canada

Low-speed aerodynamic characteristics improvement of ATR 42 airfoil using a morphing wing approach

Mr. Oliviu Sugar Gabor, Ecole de Technologie Superieure, Canada
Mrs. Andreea Koreanschi, Ecole de Technologie Superieure, Canada

SS27 - Advanced Techniques for Power Management
B-1518, Saturday 27th of October, 08h00

Chair/s: Djaffar Ould Abdeslam, Dirk Benyoucef

A Novel Inductive-Capacitive Pulse Forming Circuit for Pulse Power Load Applications

Dr. Bulent Vural, Center for Advanced Power System-FSU, USA
Prof. Chris S. Edrington, Center for Advanced Power System-FSU, USA

Tuning of Resonant Controllers Applied to the Current Control of Voltage-Source Converters

Ms. Ana Rodriguez, University of Alcala, Spain
Mr. Miguel Moranchel, University of Alcala, Spain
Mr. Emilio J. Bueno, University of Alcala, Spain
Mr. Francisco J. Rodriguez, University of Alcala, Spain

An Adaptive Neural PLL for Grid Synchronization

Dr. Ali Bechouche, University of Tizi Ouzou, Algeria
Dr. Hamid Sediki, University of Tizi Ouzou, Algeria
Dr. Djaffar Ould Abdeslam, University of Haute Alsace, France
Prof. Salah Haddad, University of Tizi Ouzou, Algeria

Optimal Control Strategy of the Interleaved Buck Cell based Shunt Active Filter

Dr. Zhong Chen, Aero-Power Sci-tech center, Nanjing University of Aero. & Astro., China
Mr. Miao Chen, Aero-Power Sci-tech center, Nanjing University of Aero. & Astro., China

Event Detection for Non Intrusive Load Monitoring

Mr. Kyle D. Anderson, Carnegie Mellon University, USA
Dr. Mario E. Berges, Carnegie Mellon University, USA
Mr. Adrian Ocneanu, Carnegie Mellon University, USA
Dr. Diego Benitez, Robert Bosch LLC, USA
Dr. Jose M. F. Moura, Carnegie Mellon University, USA

Smart Meter Systems Detection & Classification using Artificial Neural Networks

Mr. Thomas Bier, University Furtwangen, Germany
Dr. Djaffar Ould Abdeslam, University of Haute Alsace, France
Prof. Jean Merckle, University of Haute Alsace, France
Prof. Dirk Benyoucef, University Furtwangen, Germany

SS01 a - Network-based Control Systems I
B-1708, Saturday 27th of October, 08h00

Chair/s: Mo-Yuen Chow, Josep M. Fuertes

Design of Networked Control Systems Using a Stochastic Switching Systems Approach

Dr. Koichi Kobayashi, Japan Advanced Institute of Science and Technology, Japan
Prof. Kunihiko Hiraishi, Japan Advanced Institute of Science and Technology, Japan

Self-Triggered Model Predictive Control with Delay Compensation for Networked Control Systems

Dr. Koichi Kobayashi, Japan Advanced Institute of Science and Technology, Japan
Prof. Kunihiko Hiraishi, Japan Advanced Institute of Science and Technology, Japan

Controller design based on complete quadratic Lyapunov-Krasovskii functional for time delay systems

Prof. Yutaka Uchimura, Shibaura Institute of Technology, Japan
Mr. Masanori Nagahara, Shibaura Institute of Technology, Japan

Exploring the Worst-Case Timing of Ethernet AVB for Industrial Applications

Mr. Jonas Diemer, TU Braunschweig, Germany
Mr. Jonas Rox, TU Braunschweig, Germany
Prof. Rolf Ernst, TU Braunschweig, Germany
Mr. Feng Chen, Siemens AG, Germany
Mr. Karl-Theo Kremer, Siemens AG, Germany
Dr. Kai Richter, Symtavision GmbH, Germany

Evaluating Serial ZigBee Devices for Application in Wireless Networked Control Systems

Prof. Eduardo Paciencia Godoy, UNESP - São Paulo State University, Brazil
Mr. Fernando Scorzoni, USP - University of São Paulo at São Carlos, Brazil
Prof. Arthur José Vieira Porto, USP - University of São Paulo at São Carlos, Brazil

PO C - Poster and Dialogue Session
Pavilion A, Main Hall, Saturday 27th of October, 10h00

Chair/s: Pierre Jean Lagacé, Canada, Abdelhamid Hamadi, Canada

P01 Supervisory and control system development applied to distributed generation using Web tools

Dr. Robinson Camargo, Ufsm, Brazil
Dr. Claiton Franchi, Ufsm, Brazil
Mr. Diones Dutra, Ufsm, Brazil
Mr. Fábio Posser, Ufsm, Brazil
Mr. Celso Tischer, Ufsm, Brazil
Prof. Lucas Scherer, Ufsm, Brazil

P02 Design of an Integrated Fast Battery Charger Controller on a FPGA Board

Ms. Samantha Lacroix, Lgep, France
Prof. Mickaël Hilairet, Femto-St/Fclab, France
Prof. Eric Labouré, Lgep, France

P03 Battery and Ultra-Capacitor Hybrid Energy Storage System and Power Management Scheme for Solar-Powered Wireless Sensor Nodes

Mr. Jordan Varley, University of Toronto, Canada
Mr. Matthew Martino, University of Toronto, Canada
Mr. Shahab Poshtkouhi, University of Toronto, Canada
Prof. Olivier Trescases, University of Toronto, Canada

P04 A Transformerless Resonant Multilevel DC-DC Step-up Converter

Prof. Carlos A. Martins, Laval University, Canada
Prof. Philippe Viarouge, Laval University, Canada
Prof. Jerome Cros, Laval University, Canada

P05 Reactive power compensation using on board stored energy in Electric Vehicles

Mr. Carlos Silvestre, Instituto Superior Tecnico/TU Lisbon, Portugal
Dr. Duarte Sousa, Instituto Superior Tecnico/TU Lisbon, Portugal
Mr. António Roque, ESTSetúbal, Instituto Politécnico de Setúbal, Portugal

P06 Fault Detection and Diagnosis of Grid-Connected Power Inverters using PCA and current mean value

Prof. Joao Martins, Fct/Unl, Portugal
Prof. Vitor Pires, Ests/Ips, Portugal
Prof. Celson Lima, Igc/Ufopa, Brazil
Prof. Armando Pires, Est/Ips, Portugal

P07 Comparative analysis of two control schemes for reduction of the THD in voltage applied to a single-phase inverter with nonlinear loads

Prof. Ruben Ortega Gonzalez, Instituto Politecnico Nacional, Mexico
Dr. Gabriel Garcera Sanfeliu, Universidad Politecnica de Valencia, Spain
Dr. Emilio Figueres Amoros, Universidad Politecnica de Valencia, Spain
Dr. Oscar Carranza Castillo, Instituto Politecnico Nacional, Mexico

P08 Novel High Efficiency, High Gain Front End DC-DC Converter for Low Input Voltage Solar Photovoltaic Applications

Ms. Moumita Das, Indian Institute of Technology Bombay, India
Prof. Vivek Agarwal, Indian Institute of Technology Bombay, India

P09 Single Phase Three-Level Quasi-Z-Source Inverter With a New Boost Modulation Technique

Mr. Oleksandr Husev, Tallinn University of Technology, Estonia
Mr. Serhii Stepenko, Chernihiv State Technologycal University, Ukraine
Mr. Carlos Roncero-Clemente, University of Extremadura, Spain
Prof. Enrique Romero-Cadaval, University of Extremadura, Spain
Dr. Dmitri Vinnikov, Tallinn University of Technology, Estonia

P10 On the Direct Deadbeat Control of Switched-Mode Power Converters

Dr. Albert Iskhakov, Joint Stock Company "Concern "Morinformsystem-Agat", Moscow, Russian Federation
Mr. Vladimir Pospelov, Military-Industrial Commission of the Russian Federation, Moscow, Russian Federation
Dr. Valery Kobylyansky, Joint Stock Company "Concern "Morinformsystem-Agat", Moscow, Russian Federation
Mr. Sergey Skovpen, State Marine Technical University "Sevmashvtuz", Severodvinsk, Russian Federation

P11 A Novel Current-Mode Constant On-Time Control Scheme to Achieve Adaptive Voltage Positioning for DC Power Converters

Mr. Yung-Jen Chen, National Taiwan University, Taiwan
Dr. Dan Chen, National Taiwan University, Taiwan
Mr. Yu-Cheng Lin, National Taiwan University, Taiwan
Mr. Ching-Jan Chen, Richtek Technology, Taiwan
Mrs. Chien-Hui Wang, Richtek Technology, Taiwan

P12 Experimental Verification of Energy Efficiency Enhancement in Power Electronics at Partial Load

Mr. Klaus Muehlbauer, Universitaet der Bundeswehr Muenchen, Germany
Prof. Dieter Gerling, Universitaet der Bundeswehr Muenchen, Germany

P13 Hybrid PWM Strategy for Voltage Source Inverters Feeding Three-Phase Open-End-Winding Equipment

Mr. Gregory Carlos, Federal University of Campina Grande, Brazil
Prof. Euzeli dos Santos Jr., Federal University of Campina Grande, Brazil
Prof. Cursino Jacobina, Federal University of Campina Grande, Brazil

P14 An FPGA-based Digital Control Development Method for Power Electronics

Mr. Ezana Mekonnen, All Digital Power, LLC, United States
Mr. Jason Katcha, All Digital Power, LLC, United States
Mr. Michael Parker, Altera, United States

P15 A Novel Control Scheme for Series Hybrid Active Power Filter Using Generalised Instantaneous Power Theory

Prof. Mahmadasraf Mulla, S. V. National Institute of Technology, Surat., India
Dr. Chudamani R., S. V. National Institute of Technology, Surat., India
Dr. Anandita Chowdhury, S. V. National Institute of Technology, Surat., India

P16 Independent DC Capacitance Parallel Multiple Module SVG Based on CPS-SPWM

Mr. Wei Cai, Zhuzhou National Engineering Research Center of Converter Co.Ltd.,, China
Mr. Yanyan Huang, Zhuzhou National Engineering Research Center of Converter Co.Ltd.,, China
Dr. Fangyuan Zhou, Zhuzhou National Engineering Research Center of Converter Co.Ltd.,, China
Mr. Qiang Wu, Zhuzhou National Engineering Research Center of Converter Co.Ltd.,, China
Mr. Huadong Liu, Zhuzhou National Engineering Research Center of Converter Co.Ltd.,, China
Mr. Caixiao Wang, Zhuzhou National Engineering Research Center of Converter Co.Ltd.,, China

P17 Research and Designing of Boiler-Turbine Model Linearization Balance Operating Point Based on Energy-saving and Non-linear Measurement Analysis

Dr. Chen Yanqiao, GuoDian Science and Technology Research Institute, China
Dr. Liu Liheng, GuoDian Science and Technology Research Institute, China
Mr. Cheng Hainan, GuoDian Science and Technology Research Institute, China

P18 Load Forecasting in the User Side Using Wavelet-ANFIS

Mr. Francisco Giacometto, MCIA Group, Universitat Politècnica de Catalunya, Spain
Mr. Juan Cardenas, MCIA Group, Universitat Politècnica de Catalunya, Spain
Mr. Konstantinos Kampouropoulos, MCIA Group, Universitat Politècnica de Catalunya, Spain
Dr. Jose Romeral, MCIA Group, Universitat Politècnica de Catalunya, Spain

P19 Operation and Protection of Photovoltaic Systems in Hybrid AC/DC Smart Grids

Mr. Ahmed Mohamed, Florida International University, United States
Mr. Carlos Fernandez de Cossio, Florida International University, United States
Mr. Tan Ma, Florida International University, United States
Mr. Mustafa Farhadi, Florida International University, United States
Prof. Osama Mohammed, Florida International University, United States

P20 Experimental Validation of Direct Power Control of Variable Speed Micro-Hydropower Plant

Mr. Belhadji Lakhdar, G2elab, France
Prof. Bacha Seddik, G2elab, France

P21 Integration of Renewable Energy Sources and the Utility Grid with the Net Zero Energy Building in Republic of Chad

Mr. Fadoul Souleyman Tidjani, Ecole de Technologie Superieure, Canada
Prof. Ambrish Chandra, Ecole de Technologie Superieure, Canada

P22 Hybrid Method For Control Of Voltage Regulation Applied In Micro Hydro Power Station

Dr. Robinson Camargo, Ufsm, Brazil
Prof. Lucas Scherer, Ufsm, Brazil
Mr. Celso Tischer, Ufsm, Brazil
Mr. Fábio Posser, Ufsm, Brazil
Dr. Claiton Franchi, Ufsm, Brazil

P23 Comparison of current control for low harmonic distortion applied to a small wind generation system with permanent magnet synchronous generator

Dr. Oscar Carranza Castillo, Instituto Politecnico Nacional, Mexico
Dr. Emilio Figueres Amoros, Universidad Politecnica de Valencia, Spain
Dr. Gabriel Garcera Sanfeliu, Universidad Politecnica de Valencia, Spain
Prof. Ruben Ortega Gonzalez, Instituto Politecnico Nacional, Mexico

P24 Constant Power Loads in More Electric Vehicles - An Overview

Mr. Sean Smithson, Concordia University, Canada
Prof. Sheldon Williamson, Concordia University, Canada

P25 Circulating Current Control of Double-Star Chopper-Cell Modular Multilevel Converter for HVDC System

Mr. Xu She, North Carolina State University, United States
Prof. Alex Huang, North Carolina State University, United States

P26 Low THD voltage source involving two sliding mode controllers

Dr. Jean-Claude Le Claire, Ireena, France
Dr. Mohamed Fouad Benkhoris, Ireena, France

P27 A Novel Fast and Deterministic Substation Communication Network Architecture Based on AFDX

Mr. Peng-yu Zhang, Harbin, China
Prof. Yan Zhou, Harbin, China
Prof. Xiao-sheng Liu, Harbin, China
Mr. Ji-wei Pang, Harbin, China
Mr. Zhen-Feng Zhao, Harbin, China

P28 A Design Methodology of Lossy Transconductance Filters

Mr. Pradeep Dandamudi, Arizona State University, USA
Mr. Timothy A. Brown, Auburn University, USA
Mr. Xing Wu, Auburn University, USA
Mr. Marcin Jagiela, University of Information Technology and Management, Rzeszow, Poland
Mr. Bogdan Wilamoski, Auburn University, USA

TT07 r - Multilevel Converters I
A-1170, Saturday 27th of October, 10h30

Chair/s: K. Gopakumar, Alex Huang

Mitigating DC-Side Power Oscillations and Negative Sequence Load Currents in Modular Multilevel Converters under Unbalanced Faults - First Approach using Resonant PI

Mr. Gilbert Bergna, Supélec / NTNU / EDF R&D, France
Mr. Erik Berne, Edf R&D, France
Mr. Philippe Egrot, Edf R&D, France
Prof. Jean-Claude Vannier, Supélec, France
Prof. Pierre Lefranc, Supélec, France
Prof. Marta Molinas, Ntnu, Norway
Dr. Jon-Are Suul, Sintef, Norway

Multilevel Inverter Based Active Power Filter Using Space Vector Modulation

Mr. Madhukar Waware, WCE Sangli, India
Prof. Pramod Agarwal, IIT Roorkee, India

AC circulating currents suppression in modular multilevel converter

Mr. Xu She, North Carolina State University, United States
Prof. Alex Huang, North Carolina State University, United States
Dr. Xijun Ni, Norh Carolina State University, United States
Prof. Rolando Burgos, North Carolina State University, United States

Fault Tolerance in Active Power Filters, Based on Multilevel NPC Topology

Mr. Pedro Lopes, University of Coimbra, Portugal
Prof. André Mendes, University of Coimbra, Portugal

Space vector pulse width modulation of multilevel inverters: A new method for selecting the appropriate small hexagon

Mr. Mohamed Hamdi, Technical College of Jazan, Saudi Arabia
Dr. Mahmoud Hamouda, Ecole superieure des sciences et techniques de Tunis, Tunisia
Prof. Farhat Fnaiech, Ecole superieure des sciences et techniques de Tunis, Tunisia
Prof. Kamal Al-Haddad, ETS de Montreal, Canada

Evaluation of Different Carrier-Based PWM Methods for Modular Multilevel Converters for HVDC Application

Mr. Arman Hassanpoor Chaleshtari, Royal Institute of Technology (KTH), Sweden
Prof. Staffan Norrga, Royal Institute of Technology (KTH), Sweden
Prof. Hans-Peter Nee, Royal Institute of Technology (KTH), Sweden
Dr. Lennart ÄNgquist, Royal Institute of Technology (KTH), Sweden

ICELIE - Electrical Machines and Power Electronics
A-1242, Saturday 27th of October, 10h30

Chair/s: Rene Wamkeue, Jose I.Leon

Educational laboratory test benches for induction motor fault diagnosis training

Prof. Jose A. Antonino-Daviu, Universidad Politecnica De Valencia, Spain
Prof. Joan Pons-Llinares, Universidad Politecnica De Valencia, Spain
Prof. Vicente Climente-AlarcÓN, Universidad Politecnica De Valencia, Spain
Prof. Jose Roger-Folch, Universidad Politecnica De Valencia, Spain
Prof. Martín Riera-Guasp, Universidad Politecnica De Valencia, Spain

Real Time Systems for Teaching Induction Motor Drives

Dr. Pedro Ponce, Itesm, Mexico
Dr. Mario Pacas, Siegen, Germany
Dr. Arturo Molina, Itesm, Mexico

Web-based Learning of Electrical Machines Simulation Tool - iMotor

Mr. Emiliano Veiga, Udesc, Brazil
Mr. Jacson Oliveira, Udesc, Brazil
Dr. Ademir Nied, Udesc, Brazil
Dr. Jose Oliveira, Udesc, Brazil

Development of Interactive Tutorial Tool for Simulation and Identification of Electrical Machines and Transformers

Prof. René Wamkeue, Uqat, Canada
Dr. Abdelhalim Lalami, Uqat, Canada

Implementing Constructive Alignment Theory in a Power System Analysis Course using a Consensus Model

Prof. Luigi Vanfretti, KTH Royal Institute of Technology, Sweden
Mr. Mostafa Farrokhabadi, KTH Royal Institute of Technology, Sweden

Educational Hardware/Software Interface for Power Electronic Applications

Mr. Abraham Marquez, University of Sevilla, Spain
Dr. Jose I. Leon, University of Sevilla, Spain
Prof. Leopoldo G. Franquelo, University of Sevilla, Spain
Dr. Sergio Vazquez, University of Sevilla, Spain

TT07 s - Resonant Converters
A-1300, Saturday 27th of October, 10h30

Chair/s: Carlos Martin, Kamal Al-Haddad

HF Link LCTLC Resonant Converter with LF AC Output

Prof. Branislav Dobrucky, University of Zilina, Slovak Republic
Mr. Michal Prazenica, University of Zilina, Slovak Republic
Mr. Slavomir Kascak, University of Zilina, Slovak Republic
Mr. Jan Kassa, University of Zilina, Slovak Republic

The Novel Synchronous Rectifier Driving Method for LLC Series Resonant Converter

Mr. Bong-Chul Kim, Kaist, Korea (South)
Mr. Hong-Sun Park, Samsung Electro-Mechanics, Korea (South)
Mr. Sang-Cheol Moon, Kaist, Korea (South)
Mr. Young-Do Kim, Kaist, Korea (South)
Mr. Duk-You Kim, Kaist, Korea (South)
Prof. Gun-Woo Moon, Kaist, Korea (South)

Load-Resonant Converter with Changing Resonant Tank Topology for Welding Applications

Dr. Jevgeni Shklovski, Tallinn University of Technology, Estonia
Prof. Kuno Janson, Tallinn University of Technology, Estonia
Mr. Ants Kallaste, Tallinn University of Technology, Estonia

A Universal Two-Level Changeover Circuit of Super-Capacitor Bank for Energy Storage Systems

Prof. Xi Xiao, Department of Electrical Engineering, Tsinghua University, China
Mr. Jin-Feng Nie, Guangdong Electric Power Design Institute, China
Dr. Zanxiang Nie, Department of Electrical Engineering, Tsinghua University, China
Mr. Peigen Tian, Department of Automation, China
Ms. Ruoxing Ding, Department of Electrical Engineering, Tsinghua University, China

Design of a resonant power inverter for a piezoelectric actuator

Mr. Christophe Winter, Epfl-Lai, Switzerland
Mr. Christophe Auvigne, Epfl-Lai, Switzerland
Prof. Yves Perriard, Epfl-Lai, Switzerland

TT09 h - Hybrid Energy Systems
A-1302, Saturday 27th of October, 10h30

Chair/s: Sebastien Mariethoz, Haitham Abu-Rub

A distributed model predictive control scheme for reducing consumption of hybrid fuel cell systems

Dr. Sebastien Mariethoz, ETh Zurich, Automatic Control Lab., Switzerland
Dr. Olivier Bethoux, Lgep, Cnrs Supelec, France
Dr. Mickael Hilairet, Lgep, Cnrs Supelec, France

Simulation of a Hybrid Renewable Energy System in Rural Regions

Prof. Imad Mougharbel, Lebanese University, Lebanon
Mr. Hussein Saleh, Lebanese University, Lebanon
Dr. Semaan Georges, Notre Dame University, Lebanon

Passivity-Based Control of Photovoltaic-Wind Hybrid System with Euler-Lagrange Modeling

Ms. Lila Croci, Eigsi, France
Dr. André Martinez, Eigsi, France
Prof. Patrick Coirault, LIAS, University of Poitiers, France
Prof. Gérard Champenois, LIAS, University of Poitiers, France
Dr. Jean-Paul Gaubert, LIAS, University of Poitiers, France

Efficiency Improvement of Solar-Wind based Dual-Input Cuk-SEPIC Converter for Telecom Power Supply

Mr. B. Mangu, Indian Institute of Technology Bombay, India
Prof. B. G. Fernandes, Indian Institute of Technology Bombay, India

Maximum Power Point Tracking and Frequency Control for Hybrid Wind Diesel System Supplying an Isolated Load

Mr. Vigneshwaran Rajasekaran, Saint Mary's university, Canada
Dr. Adel Merabet, Saint Mary's university, Canada
Dr. Hussein Ibrahim, Wind energy techno-centre, Canada
Dr. Rachid Beguenane, Royal Military College, Canada
Dr. Jogendra Thongam, PowerEnerSys Inc., Canada

Analysis of Out-of-plane Micro-Power Generators

Dr. Mohamed A. E. Mahmoud, Ain Shams University, Egypt
Dr. Bashar K. Hammad, Hashemite University, Jordan
Dr. Eihab M. Abdel-Rahman, University of Waterloo, Canada
Prof. Ehab F. El-Saadany, University of Waterloo, Canada
Prof. Raafat R. Mansour, University of Waterloo, Canada

SS03 - Industrial Electronics Applied to Induction Heating
A-1340, Saturday 27th of October, 10h30

Chair/s: Oscar Lucia, Pascal Maussion

A New ZVS Phase-Shifted High-Frequency Resonant Inverter Incorporating Asymmetrical PWM-based Unit Control for Induction Heating

Prof. Tomokazu Mishima, Kobe University, Japan
Mr. Chikanori Takami, Kobe University, Japan
Prof. Mutsuo Nakaoka, Kyungnam University, Korea (South)

The Induction Heating Systems with Permanent Magnets and Cascade Equivalent Schemes for Studying Electromagnetic Fields

Prof. Aleksey Inkin, 630092 Novosibirsk, 20 Marx avenue, Russian Federation
Prof. Aleksandr Aliferov, 630092 Novosibirsk, 20 Marx avenue, Russian Federation
Dr. Aleksey Blank, 630092 Novosibirsk, 20 Marx avenue, Russian Federation
Mr. Vladislav Promzelev, 630092 Novosibirsk, 20 Marx avenue, Russian Federation

PCB Multi-Track Coils for Domestic Induction Heating Applications

Mr. Ignacio Lope, University of Zaragoza, Spain
Dr. Claudio Carretero, University of Zaragoza, Spain
Dr. Jesus Acero, University of Zaragoza, Spain
Dr. Rafael Alonso, University of Zaragoza, Spain
Prof. Jose Miguel Burdio, University of Zaragoza, Spain

IGBT for High Performance Induction Heating Applications

Dr. Ali Salih, ON Semiconductors, USA

The Practical Evaluations of Time-Sharing High-Frequency Resonant Soft-Switching Inverter for All Metal IH Cooking Appliances

Mr. Takayuki Hirokawa, Yamaguchi University, Japan
Prof. Eiji Hiraki, Yamaguchi University, Japan
Prof. Toshihiko Tanaka, Yamaguchi University, Japan
Dr. Masayuki Okamoto, Ube National College of Technology, Japan
Prof. Mutsuo Nakaoka, Kyungnam University, Korea (South)

Resonant control of multi-phase induction heating systems

Mr. Kien Long Nguyen, iversity of Toulouse, Laplace, France
Prof. Stéphane Caux, iversity of Toulouse, Laplace, France
Prof. Xavier Kestelyn, Arts et Métiers ParisTech, L2EP, France
Mr. Olivier Pateau, Edf Epi, France
Prof. Pascal Maussion, iversity of Toulouse, Laplace, France

SS54 a - Efficient Power Converters for Photovoltaic and Wind Power Conversion I
A-1350, Saturday 27th of October, 10h30

Chair/s: Chandan Chakraborty, Mariusz Malinowsky

Active Common-Mode Filter for Photovoltaic Transformerless Inverters

Mr. Giampaolo Buticchi, DII - University of Parma, Italy
Mr. Davide Barater, DII - University of Parma, Italy
Prof. Emilio Lorenzani, DISMI - University of Modena and Reggio Emilia, Italy
Mr. Andrea Salati, DISMI - University of Modena and Reggio Emilia, Italy

Switched-Coupled-Inductor Inverter

Ms. Qin Lei, Ph.D student, USA
Prof. Fang.Z. Peng, Professor, USA

Efficiency Analysis of DCM-232 Three-Phase PV Topology

Dr. Raúl Santiago Muñoz Aguilar, Universitat Politècnica de Catalunya, Spain
Dr. Pedro Rodríguez, Universitat Politècnica de Catalunya, Spain
Mr. Gerardo Vázquez, Universitat Politècnica de Catalunya, Spain
Dr. Ignacio Candela, Universitat Politècnica de Catalunya, Spain
Dr. Emiliano Aldabas, Universitat Politècnica de Catalunya, Spain

Transformerless Grid-Connected Converter for PV Plants with Constant Common Mode Voltage and Arbitrary Power Factor

Mr. Davide Barater, DII - University of Parma, Italy
Mr. Giampaolo Buticchi, DII - University of Parma, Italy
Prof. Emilio Lorenzani, DISMI - University of Modena and Reggio Emilia, Italy
Ms. Veronica Malori, DII - University of Parma, Italy

Maximum power point searching method for partial shaded PV strings

Dr. Gerardo Escobar, ABB Switzerland Ltd, Switzerland
Dr. Carl N.M. Ho, ABB Switzerland Ltd, Switzerland
Dr. Sami Pettersson, ABB Switzerland Ltd, Switzerland

Novel Hybrid Control for Voltage Stress, Harmonics and Loss Minimization in High Voltage Gain Z-source Matrix Converter

Ms. Qin Lei, Ph.D student, USA
Prof. Fang.Z. Peng, Professor, USA
Prof. Baoming Ge, Professor, USA

TT07 t - AC/AC Converters II
A-1752, Saturday 27th of October, 10h30

Chair/s: Marian Kazimierczuk, Bhim Singh

A Line-Interactive UPS System Operating with Sinusoidal Voltage and Current References Obtained from a Self-Tuning Filter

Dr. Sergio Silva, Federal Technological University of Parana - UTFPR, Brazil
Dr. Rodrigo Modesto, Federal Technological University of Parana - UTFPR, Brazil
Prof. Rodrigo Barriviera, Federal Institute of Parana - IFPR, Brazil
Dr. Mauricio Kaster, Federal Technological University of Parana - UTFPR, Brazil

Single Phase UPS with FACTS Capabilities by Using p-q Theory

Mr. Dante Victor Shimoda Pereira, Federal University of Ceara, Brazil
Prof. Francisco Kleber de Araujo Lima, Federal University of Ceara, Brazil
Prof. Carlos Gustavo Castelo Branco, Federal University of Ceara, Brazil
Prof. René Pastor Torrico Bascopé, Federal University of Ceara, Brazil
Mr. Luiz Juarez Castelo Branco Camurça Neto, Federal University of Ceara, Brazil

A Novel Technique of Low Frequency Input Current Ripple Reduction In Two-stage DC-AC Inverter

Dr. Zheng Wei, Nanjing University of Aeronautics & Astronautics, China
Mr. Xiang Deng, Nanjing University of Aeronautics & Astronautics, China
Prof. ChunYing Gong, Nanjing University of Aeronautics & Astronautics, China
Dr. Jiawei Chen, Nanjing University of Aeronautics & Astronautics, China
Prof. Fanghua Zhang, Nanjing University of Aeronautics & Astronautics, China

Research and Application of High Frequency Isolated Quasi-Z-Source Inverter

Mr. Ding Yonghuan, Nanjing University of Science and Technology, China
Dr. Li Lei, Nanjing University of Science and Technology, China

Tuning Function Control Design Applied to HF Class-EF Inverter

Dr. Zerouali Sakina, Batna University, Algeria
Dr. Hadri-Hamida Amel, Laboratoire d'Électrotechnique de Constantine LEC, Département d'électrotechnique, Université Mentouri, 25000, Constantine, Algeria
Dr. Bensalem Ahmed, Electrical Engineering Department, LGEB laboratory, Biskra University, Algeria
Prof. Mimoune Souri Mohammed, Laboratoire LMSE, Département de génie électrique, Université de Biskra, BP 145, 07000, Biskra, Algeria
Prof. Allag Abdelkrim, Laboratoire LMSE, Département de génie électrique, Université de Biskra, BP 145, 07000, Biskra, Algeria

A Novel Synchronous PWM Method for Three-phase AC/DC/AC Converter Without Dc-link Capacitor

Dr. Congwei Liu, institute of electrical engineering, IAS, China
Mr. Zhandong Sun, institute of electrical engineering, IAS, China
Ms. Ningzi Cheng, institute of electrical engineering, IAS, China
Prof. Yaohua Li, institute of electrical engineering, IAS, China

Panel on "Emerging Technologies in Industrial Electronics" and "How to write successful paper"
A-1600, Saturday 27th of October, 10h30

Moderator/s: Bogdan Wilamowski

Panelists:
Kamal Al-Haddad - Past VP for Pub and current VP for TA
Frede Blaabjerg - EIC of TPEL and one of the best cited authors
Mo-Yuen Chow - EIC of TIE
Carlo Cecati - CoEIC of TIE and incoming EIC of TIE
Joahim Holtz - Past EIC of TIE
David Irwin - Past EIC of TIE
Okyay Kaynak - CoEIC of TIE, past EIC of TII, and incoming EIC of TMECH
Emil Levi - Co EIC of TIE
Marco Liserre - founding EIC of IEM and past VP for Pub
Ren Luo - CoEIC of TIE, Past EIC of TMECH and incoming EIC of a new journal
Marisz Malinowski - EIC of IEM
Kim Man - Co EIC of TIE and incoming Co EIC of TII
Jose Rodriquez - Best cited author out of over 1,000,000 authors in engineering
Xing Yu - VP for Pub
Richard Zurawski - past EIC of TII
Bogdan Wilamowski (moderator) - Past EIC of TIE and current EIC of TII

The Panel will take an advantage of the very extensive editorial experiences of the panelists (listed below) and initially starts with a short PPT presentation on the subject "How to write a successful paper" which will be followed by comments from the panelists and discussion with the audience. In the second part of this SS there will be several presentations on trends and emerging technologies. Among the panelists there will be Jose Rodrigues and Frede Blaabjerg, who are currently #1 and #3 on the list of over 1 million engineers. We will also, have many current and past Editors-in-Chiefs of IEEE journals, who also have a broad perspective on different new directions.

TT03 k - PM Machine Drives
B-0904, Saturday 27th of October, 10h30

Chair/s: Federico Barrero, Peter Nussbaumer

A Novel Direct Torque Control Method with the Compensation of Rotating EMF to Reduce Torque Ripple for Permanent Magnet Synchronous Motor Drives

Dr. Kaiqi Zhao, Harbin Engineering University, China
Dr. Hongxing Wu, Harbin Institute of Technology, China

Standstill Position Estimation of SPMSM - Robustness to Manufacturing Tolerances

Mr. Yateendra Deshpande, Texas A&M University, USA
Prof. Hamid A. Toliyat, Texas A&M University, USA
Mrs. Xiaoyan Wang, Texas Instruments Inc., USA

Theory and implementation of a MTPA tracking controller for anisotropic PM motor drives

Dr. Riccardo Antonello, University of Padova, Italy
Mr. Matteo Carraro, University of Padova, Italy
Prof. Mauro Zigliotto, University of Padova, Italy

Online Tuning Method for Current Measurement Offsets and Gain Deviations for SPMSM

Mr. Naoki Miyamoto, Nagaoka University of Technology, Japan
Prof. Kiyoshi Ohishi, Nagaoka University of Technology, Japan

Research on Predictive Control for PMSM based on Online Parameter Identification

Mr. Weihua Wang, Tsinghua University, China
Prof. Xi Xiao, Tsinghua University, China

Finite Control Set Model Predictive Control of PMSM-2LVSI using Interpolated Switching States

Mr. Shan Chai, Rmit, Australia
Prof. Liuping Wang, Rmit, Australia

TT03 l - PM and IPM Machines
B-0906, Saturday 27th of October, 10h30

Chair/s: Leila Parsa, Francesco Cupertino

A Sensorless Control Using Extended Kalman Filter for an Interior Permanent Magnet Synchronous Motor Based on an Extended Rotor Flux

Mr. Jae-Hoon Kim, Hanyang University, Korea (South)
Mr. Sang-soo Lee, Hanyang University, Korea (South)
Prof. Rae-Young Kim, Hanyang University, Korea (South)
Prof. Dong-Seok Hyun, Hanyang University, Korea (South)

Detent Force Reduction of a Tubular Linear Drive by Using a Genetic Algorithm and FEM - Verification of Simulation Results

Mr. Sebastian Gruber, University of Wuppertal, Germany
Dr. Ralf Wegener, University of Wuppertal, Germany
Prof. Stefan Soter, University of Wuppertal, Germany

Thrust Optimization of a Five-Phase Fault-Tolerant Flux-Switching Linear Synchronous Motor

Mr. Arun Gandhi, Rensselaer Polytechnic Institute, USA
Dr. Leila Parsa, Rensselaer Polytechnic Institute, USA

Speed Control of PMSM Drives by Generalized Predictive Algorithms

Dr. Kvetoslav Belda, Institute of Information Theory and Automation of ASCR, Czech Republic
Mr. David Vosmik, University of West Bohemia, Czech Republic

A Flux-Weakening Control Method on Maximum Torque Control Frame for IPMSM Position Sensorless Control

Mr. Atsushi Matsumoto, Nagoya University, Japan
Dr. Masaru Hasegawa, Chubu University, Japan
Prof. Shinji Doki, Nagoya University, Japan

Position estimation method which is suitable for highly magnetic saturation of IPMSM

Mr. Kohei Fujii, Nagoya University, Japan
Mr. Yang Zhao, Nagoya University, Japan
Prof. Shinji Doki, Nagoya University, Japan

SS42 - Diagnostic of AC Machine Based Complex Electromechanical Systems
B-0908, Saturday 27th of October, 10h30

Chair/s: Gerard-Andre Capolino , Remus Pusca

Novel Methodology for Improving Performance of Sensorless Speed Observers in Induction Motors at Variable Load Conditions

Mr. Jesus A. Carino-Corrales, DICIS, Universidad de Guanajuato, Mexico
Mr. Omar J. Osuna-Paez, DICIS, Universidad de Guanajuato, Mexico
Mr. Jesus Villalpando-Osuna, DICIS, Universidad de Guanajuato, Mexico
Dr. Rene J. Romero-Troncoso, DICIS, Universidad de Guanajuato, Mexico
Dr. Eduardo Cabal-Yepez, DICIS, Universidad de Guanajuato, Mexico
Dr. Arturo Garcia-Perez, DICIS, Universidad de Guanajuato, Mexico
Dr. Roque A. Osornio-Rios, Universidad Autonoma de Queretaro, Mexico

Diagnosis of Eccentricity in Induction Machines Working Under Fluctuating Load Conditions, Through the Instantaneous Frequency

Mr. Francisco Vedreño-Santos, Universitat Politecnica de Valencia, Spain
Prof. Martin Riera-Guasp, Universitat Politecnica de Valencia, Spain
Prof. Humberto Henao, Universite Jules Verne, Picardie, France
Prof. Manuel Pineda-Sanchez, Universitat Politecnica de Valencia, Spain
Prof. José Alfonso Antonino-Daviu, Universitat Politecnica de Valencia, Spain

Detection of stator short circuits in inverter-fed induction motors

Dr. Lucia Frosini, Dipartimento di Ingegneria Industriale e dell'Informazione, Università di Pavia, Italy
Dr. Luca Girometta, Foster Wheeler Italiana S.r.l., Italy
Prof. Ezio Bassi, Dipartimento di Ingegneria Industriale e dell'Informazione, Università di Pavia, Italy

An improvement of a diagnosis procedure for AC machines using two external flux sensors based on a fusion process with belief functions

Dr. Remus Pusca, Lsee, France
Dr. Cristian Demian, Lsee, France
Dr. David Mercier, Lgi2a, France
Dr. Eric Lefevre, Lgi2a, France
Prof. Raphael Romary, Lsee, France

Non Intrusive Operational Health Identification of In-Service Electrical Machine

Dr. Syed Sajjad Zaidi, National University of Sciences and Technology (NUST), Islamabad, Pakistan
Dr. Elias G Strangas, Michigan State University, USA

Stator Current Bi-Spectrum Patterns for Induction Machines Multiple-Faults Detection

Dr. Lotfi Saidi, University of Tunis, Ecole Supérieure des Sciences et Techniques de Tunis, Tunisia
Prof. Farhat Fnaiech, University of Tunis, Ecole Supérieure des Sciences et Techniques de Tunis, Tunisia
Prof. Gérard Capolino, University of Picardie "Jules Verne", Department of Electrical Engineering, France
Prof. Humberto Henao, University of Picardie "Jules Verne", Department of Electrical Engineering, France

SS55 b - Technologies and Architectures for future Cloud-based Industrial Systems II
B-1502, Saturday 27th of October, 10h30

Chair/s: Thomas Bangemann, Armando W Colombo

Technologies for SOA-based Distributed Large Scale Process Monitoring and Control Systems

Mr. Francois Jammes, Schneider Electric, France
Mr. Bernard Bony, Schneider Electric, France
Mr. Philippe Nappey, Schneider Electric, France
Prof. Armando W. Colombo, University of Applied Sciences Emden and Schneider Electric, Germany
Prof. Jerker Delsing, Luleå University of Technology, Sweden
Prof. Jens Eliasson, Luleå University of Technology, Sweden
Dr. Stamatis Karnouskos, Sap, Germany
Dr. Petr Stluka, Honeywell, Czech Republic
Dr. Marcel Tilly, Microsoft, Germany

Integrating DPWS and OPC UA device-level SOA features into IEC 61850 applications

Mr. Stjepan Sučić, Končar-KET, Croatia (Hrvatska)
Mr. Bernard Bony, Schneider Electric, France
Mr. Laurent Guise, Schneider Electric, France
Mr. François Jammes, Schneider Electric, France
Mr. Ante Maru□ić, University of Zagreb, Croatia (Hrvatska)

OPC-UA Information Model for Large-Scale Process Control Applications

Dr. Pavel Trnka, Honeywell Prague Laboratory, Czech Republic
Mr. Petr Kodet, Honeywell Prague Laboratory, Czech Republic
Dr. Vladimir Havlena, Honeywell Prague Laboratory, Czech Republic

Leveraging TinyOS for Integration in Process Automation and Control Systems

Prof. Per Lindgren, Luleå University of Technology, Sweden
Mr. Henrik Ma kitaavola, Luleå University of Technology, Sweden
Mr. Johan Eriksson, Luleå University of Technology, Sweden
Dr. Jens Eliasson, Luleå University of Technology, Sweden

SeMo-TS: Testing OPC UA Server Models in Simulated Environments

Mr. Sebastian Rohjans, OFFIS - Institute for Information Technology, Germany
Prof. Sebastian Lehnhoff, OFFIS - Institute for Information Technology, Germany
Dr. Mathias Uslar, OFFIS - Institute for Information Technology, Germany
Mr. Plamen Rusinov, BTC Business Technology Consulting AG, Germany

SS50 - Current Status of Intelligent Spaces / Conversion of Robotics, Mechatronics, Control and Interfaces
B-1504, Saturday 27th of October, 10h30

Chair/s: Mihoko Niitsuma, Sousuke Nakamura

Development of Wireless Image Sensor Nodes Based on FPGA for Human Tracking in Intelligent Space

Mr. Hajime Kikuchi, Meiji University, Japan
Prof. Kazuyuki Morioka, Meiji University, Japan

New Hopfield Neural Network for joint Job Shop Scheduling of production and maintenance

Dr. Nader Fnaiech, ESSTT Univ. of Tunis, Tunisia
Ms. Hayfa Hammami, ESSTT Univ. of Tunis, Tunisia
Dr. Amel Yahyaoui, ESSTT Univ. of Tunis, Tunisia
Prof. Christophe Varnier, ENSMM Univ.of Besancon, France
Prof. Farhat Fnaiech, ESSTT Univ. of Tunis, Tunisia
Prof. Noureddine Zerhouni, ENSMM Univ.of Besancon, France

Aesthetic Marker Design for Home Robot Localization

Ms. Zita V. Farkas, Department of Machine and Product Design, Budapest University of Technology and Economics, Hungary
Mr. Daniel Illy, Department of Mechatronics - Optics and Engineering Informatics, , Budapest University of Technology and Economics, Hungary
Dr. Peter Korondi, Department of Mechatronics, Optics and Engineering Informatics, , Budapest University of Technology and Economics, Hungary
Dr. Lorant Fodor, Department of Machine and Product Design, Budapest University of Technology and Economics, Hungary

Design of Social Behavior of Physical Agent in Intelligent Space

Dr. Mihoko Niitsuma, Chuo University, Japan
Mr. Takuya Ichikawa, Chuo University, Japan
Mr. Ryuichi Numakunai, Chuo University, Japan
Mr. Akira Onodera, Chuo University, Japan
Prof. Peter Korondi, Budapest University of Technology and Economics, Hungary
Prof. Hideki Hashimoto, Chuo University, Japan

Building a Human-Dog Interaction Inspired Emotional Engine Model

Mr. Csanad Szabo, Vanderbilt University, USA
Prof. Peter Korondi, Budapest University of Technology and Economics, Hungary

Proposal of Sleep-promoting Robot using Vibratory Pressure and Sound Stimulation

Dr. Sousuke Nakamura, Faculty of Science and Engineering, Chuo University, Japan
Mr. Takuma Nakano, Faculty of Science and Engineering, Chuo University, Japan
Mr. Noriki Mochizuki, Faculty of Science and Engineering, Chuo University, Japan
Ms. Hitomi Araki, Faculty of Science and Engineering, Chuo University, Japan
Prof. Hideki Hashimoto, Faculty of Science and Engineering, Chuo University, Japan

SS65 - Integrated Circuit Designs for Wireless Communications
B-1506, Saturday 27th of October, 10h30

Chair/s: Deshang Ma, J. David Irwin

Operational Amplifier Design with Gain-Enhancement Differential Amplifier

Mr. Phuoc T. Tran, University of Idaho/Micron Technology Inc., USA
Prof. Herbert L. Hess, University of Idaho, USA
Prof. Kenneth V. Noren, University of Idaho, USA

A Fifth-Order Low-Pass OTA-C Filter Using Folded Stages

Mr. Xin Jin, Auburn University, USA
Dr. Fa Dai, Auburn University, USA

A Harmonic Rejection Mixer in Wideband Transmitter

Dr. Yuehai Jin, Qualcomm Incorporated, United States
Prof. Fa Foster Dai, Department of Electrical Engineering, Auburn University, United States

Effect of CMOS Device Sizing on Circuit Noise Performance

Mr. Hossein Noori, At&T, USA
Prof. Fa F. Dai, Auburn University, USA

3D CMOS sensor based acoustic object detection and navigation system for blind people

Dr. Dunai Larisa, Camino de Vera s/n, 8L 46022 Valencia, Spain
Dr. Defez Beatriz, Camino de Vera s/n, 8L 46022 Valencia, Spain
Dr. Lengua Ismael, Camino de Vera s/n, 8L 46022 Valencia, Spain
Dr. Peris-Fajarnes Guillermo, Camino de Vera s/n, 8L 46022 Valencia, Spain

TT01 k - Electromechanical Systems
B-1514, Saturday 27th of October, 10h30

Chair/s: Peter Korondi, Sudip Mazumder

Controllability Analysis of A Grid Connected Interior Permanent Magnet Generator

Prof. Olorunfemi Ojo, Tennessee Technological University, USA
Mr. Hossein Karimi-Davijani, Tennessee Technological University, USA

Torque Ripple Reduction in Permanent Magnet Synchronous Machines Using Angle-Based Iterative Learning Control

Mr. Yi Yuan, LUNAM Université, IREENA, France
Dr. Francois Auger, LUNAM Université, IREENA, France
Prof. Luc Loron, LUNAM Université, IREENA, France
Mr. Stephane Moisy, SKF France, Automotive Development Centre - Sensor Integration, France
Mr. Mathieu Hubert, SKF France, Automotive Development Centre - Sensor Integration, France

Direct Rotor Field-Oriented Control of a Dual Three-Phase Induction Machine Using a Novel Kalman Observer

Dr. Rijaniaina Njakasoa Andriamalala, Laboratoire L2EP - Ecole Centrale de Lille, France
Prof. Hubert Razik, Laboratoire AMPERE - UMR 5005 - Université Claude Bernard Lyon 1, France
Prof. Bruno Francois, Laboratoire L2EP - Ecole Centrale de Lille, France
Prof. Xavier Guillaud, Laboratoire L2EP - Ecole Centrale de Lille, France

New High Torque Density Permanent Magnet Machine Design for Electric Vehicles

Mr. Yasser Alamoudi, Newcastle University, United Kingdom
Mr. Min Zhang, Newcastle University, United Kingdom

Novel hysteresis controller based on a rotating coordinate system with direct d and q constraint

Mr. Philip Dost, Ruhr-Universität Bochum, Germany
Mr. Sebastian Rafael Jarzabek, Ruhr-Universität Bochum, Germany
Prof. Constantinos Sourkounis, Ruhr-Universität Bochum, Germany

Position Control of DC motors with Experience Mapping based Prediction Controller

Mr. Niranjan Saikumar, DESE, Indian Institute of Science, India
Prof. Dinesh N. S., DESE, Indian Institute of Science, India

SS31 - Design and real-Time implementation of Observers for Industrial Systems
B-1516, Saturday 27th of October, 10h30

Chair/s: François Auger, Mickaël Hilairet

An accurate extended Kalman filter scheme for the reduction of the flux angle tracking error in sensorless induction motor drives

Dr. Sebastien Mariethoz, Automatic Control Lab. ETH Zurich, Switzerland

Unscented Kalman Filter for sensorless PMSM drive with output filter fed by PWM converter

Dr. Dariusz Janiszewski, Poznan University of Technology, Poland

Sensorless nonlinear control of induction motors using Unscented Kalman Filtering

Dr. Gerasimos Rigatos, Department of Engineering, Harper Adams University College, United Kingdom
Dr. Pierluigi Siano, Department of Industrial Engineering, University of Salerno, Italy

Comparison of two black-box model identification methods applied on a VSC with LCL filter

Dr. Francisco Huerta, University of Alcalá, Spain
Dr. Santiago Cóbreces, University of Alcalá, Spain
Prof. F. Javier Rodríguez, University of Alcalá, Spain
Ms. Christina Clancey, University of Alcalá, Spain
Ms. Inés Sanz, University of Alcalá, Spain

A Fault Detection and Isolation Scheme for Lateral Vehicle Dynamics of EVs using a Quantitative Parity Space Approach

Dr. Alexander Viehweider, The University of Tokyo, Japan
Mr. Kanghyun Nam, The University of Tokyo, Japan
Prof. Hiroshi Fujimoto, The University of Tokyo, Japan
Prof. Yoichi Hori, The University of Tokyo, Japan

A Novel Approach to Torque Estimation in IPM Synchronous Motor Drives

Mr. Matteo Carraro, University of Padova, Italy
Mr. Fabio Tinazzi, University of Padova, Italy
Prof. Mauro Zigliotto, University of Padova, Italy

SS14 a - MEMS, Microsensors and Microactuators II
B-1518, Saturday 27th of October, 10h30

Chair/s: Carmen Aracil, Stefan Gassmann

ZnO crystalline nanowires array for application in gas ionization sensor

Ms. Svetlana Spitsina, Concordia University - Department of Electrical & Computer Engineering, Canada
Prof. Mojtaba Kahrizi, Concordia University - Department of Electrical & Computer Engineering, Canada

Working Equations of a Circular Multimorph Piezoelectric Micromachined Ultrasonic Transducer

Dr. Firas Sammoura, MIT & Masdar Institute, USA
Ms. Katherine Smyth, Mit, USA
Prof. Sang-Gook Kim, Mit, USA

Fabrication Of Silicon Micro-Rod Array With Controlled Density And Size Distribution Using Porous Silicon

Ms. Bahareh Yaghootkar, Concordia University, Canada
Mr. Mahmoud Amouzgar, Concordia University, Canada
Prof. Mojtaba Kahrizi, Concordia University, Canada

Light-Driven Hydrogel Microvalve Based on BR Proton Pumps

Dr. Khaled M. Al-Aribe, The University of Western Ontario, Canada
Prof. George K. Knopf, The University of Western Ontario, Canada
Prof. Amarjeet S. Bassi, The University of Western Ontario, Canada

PCB Based DNA Detection Chip

Dr. Stefan Gassmann, University of Rostock, Germany
Mr. Holger Götze, University of Rostock, Germany
Mr. Matthias Hinze, University of Rostock, Germany
Mrs. Maren Mix, University of Rostock, Germany
Prof. Gerd-Uwe Flechsig, University of Rostock, Germany
Prof. Lienhard Pagel, University of Rostock, Germany

Fabrication of electroosmotic micropump using PCB and SU-8

Dr. Stefan Gassmann, University of Rostock, Germany
Prof. Lienhard Pagel, University of Rostock, Germany
Prof. Antonio Luque, University of Seville, Spain
Dr. Francisco A. Perdigones, University of Seville, Spain
Dr. Carmen Aracil, University of Seville, Spain

SS01 b - Network-based Control Systems II
B-1708, Saturday 27th of October, 10h30

Chair/s: Josep M. Fuertes, Mo-Yuen Chow

H_inf Networked Control with Multiple Packet Dropouts

Dr. Fuwen Yang, Central Queensland University, Australia
Prof. Qing-Long Han, Central Queensland University, Australia

A novel stability criterion for networked control systems using a new bounding technique

Dr. Xian-Ming Zhang, Central Queensland University, Australia
Prof. Qing-Long Han, Central Queensland University, Australia

Network-based Output Tracking Control of Van der Pol's Oscillator

Mr. Dawei Zhang, Central Queensland University, Australia
Prof. Qing-Long Han, Central Queensland University, Australia
Prof. Xinchun Jia, Shanxi University, China

Stability and Passivity of Feedback Interconnected Systems in Network Environments

Ms. Jia Wang, Central Queensland University, Australia
Prof. Qing-Long Han, Central Queensland University, Australia
Prof. Fuwen Yang, Central Queensland University, Australia

Luncheon Plenary - Hydro-Québec SmartGrid Innovation Program
Pavilion A, Main Hall, Saturday 27th of October, 12h30

Luncheon Speaker: Jean Lessard, Institut de recherche d'Hydro-Québec (IREQ)
Presenter: Gerard A. Capolino, France; Terry Martin, USA and Kamal Al-Haddad, Canada

Abstract - The presentation will focus on the business needs and the strategic orientation of Hydro Québec supporting the modernisation and the evolution of the electrical network to become a more intelligent one. Technology vision as well as main targets of Hydro Québec technological innovation program will be presented. Concrete examples of innovation projects that are carried out jointly with the business divisions of Hydro-Québec and it's research partners will also be presented and discussed.

TU 10 - Towards industrial implementation of cyber-physical systems merging service-oriented and multi-agent system infrastructures
A-1150, Saturday 27th of October, 14h00

Lecturer/s: Dr. Armando Colombo, Dr. Paulo Leitao

TU 9 - Recent Trends in wind energy conversion systems
A-1160, Saturday 27th of October, 14h00

Lecturer/s: Dr. Bhim Singh

TT07 u - Renewable Energy Applications II
A-1170, Saturday 27th of October, 14h00

Chair/s: Praveen Jain, Luis Lopes

A Bidirectional Dc-Ac Converter

Dr. Euzeli Santos Jr., Iupui, Brazil

Implementation of an EMI Active Filter in Grid-tied PV Micro-inverter Controller and Stability Verification

Dr. Djilali Hamza, Queen's University, Canada
Dr. Mei Qiu, Queen's University, Canada
Prof. Praveen Jain, Queen's University, Canada

Selective harmonics compensation using a WECS equipped by a DFIG

Mr. Mohamed Boutoubat, Laghouat University, Algeria
Dr. Lakhdar Mokrani, Laghouat University, Algeria
Prof. Mohamed Machmoum, IREENA, Saint-Nazaire, Nantes, France, France
Prof. François Auger, REENA, Saint-Nazaire, Nantes, France, France

A Non-Standard Control Strategy for Grid-Tied Single Phase Systems with Power Quality Compensation.

Dr. Ricardo Ribeiro, Dee-Ufrn, Brazil
Mr. Franklin Nascimento, Dee-Ufrn, Brazil
Dr. Christian Azevedo, Datinf-Ifrn, Brazil
Ms. Thiago Rocha, Dee-Ufrn, Brazil
Ms. Rodrigo Barreto, Dee-Ufrn, Brazil

Implementation of a Multiple Input Converter using Fuzzy Logic Control for a Stand-Alone Photovoltaic System

Ms. Nadia Smith, The University of Arkansas, United States
Dr. Roy McCann, The University of Arkansas, United States

ICELIE - Tools and methodologies
A-1242, Saturday 27th of October, 14h00

Chair/s: Luis Gomes, Andreja Rojko

Automatic Creation of Semantic Schema for Accurate Retrieving of Education-Supportive Documents

Mrs. Maryam Tayefeh Mahmoudi, School of ECE, College of Engineering, University of Tehran; IT Research Faculty, Research Institute for ICT, Iran
Ms. Mahnaz Parsanasab, School of ECE, College of Engineering, University of Tehran, Iran
Mr. Maziar Aboualizadeh Behbahani, School of ECE, College of Engineering, University of Tehran, Iran
Ms. Morvarid Khadem Haghighat, School of ECE, College of Engineering, University of Tehran, Iran
Prof. Fattaneh Taghiyareh, School of ECE, College of Engineering, University of Tehran, Iran

An Evolutionary-Based Educational Expert System to Maximize Student-Supervisor Compatibility

Ms. Maedeh Mosharraf, University of Tehran, Electrical and Computer Engineering department, Iran
Dr. Fattaneh Taghiyareh, University of Tehran, Electrical and Computer Engineering department, Iran

Bayesian Based Student Knowledge Modeling in Intelligent Tutoring Systems

Dr. Nabila Khodeir, Informatics Dep., Electronics Research Institute, Egypt
Dr. Nayer Wanas, Informatics Dep., Electronics Research Institute, Egypt
Prof. Nevin Darwish, Computer Engineering Dep., Faculty of Engineering, Cairo University, Egypt
Prof. Nadia Hegazy, Informatics Dep., Electronics Research Institute, Egypt

Engineering Educational Cockpit: visualization by integration of heterogeneous environments.

Mr. Leandro Rosniak Tibola, Department of Electrical Engineering, Federal University of Rio Grande do Sul, Brazil
Dr. Frederico Menine Schaf, Educational Technology Center, Federal University of Santa Maria, Brazil
Dr. Carlos Eduardo Pereira, Department of Electrical Engineering, Federal University of Rio Grande do Sul, Brazil

Petri Nets based Study Plan Construction supporting Student's Evolution Monitoring

Mr. Rogério Campos-Rebelo, Fct-Unl, Portugal
Prof. Anikó Costa, Fct-Unl, Portugal
Prof. Luís Gomes, Fct-Unl, Portugal

TT07 v - Three-Phase Power Converters
A-1300, Saturday 27th of October, 14h00

Chair/s: Hadi Kanaan, Luis Monteiro

Comparison of CSI/R and VSI/R based Modular Rectifiers with Magnetic AC Coupling for Large Current and Low Voltage Applications

Dr. Johan Guzman, Utalca, Chile
Dr. Carlos Baier, Utalca, Chile
Mr. Pedro Melin, UdeC, Chile
Dr. Jose Espinoza, UdeC, Chile
Dr. Javier Munoz, Utalca, Chile

Robust Active Damping Technique for Three-Phase PWM Converter Connected to Power Grid with Unknown Inductance

Mr. Takahiro Saeki, Yaskawa Electric Corporation, Japan
Dr. Kozo Ide, Yaskawa Electric Corporation, Japan
Mr. Shinya Morimoto, Yaskawa Electric Corporation, Japan
Dr. Hideaki Iura, Yaskawa Electric Corporation, Japan
Mr. Yoshiyasu Takase, Yaskawa Electric Corporation, Japan
Mr. Syuji Matsuda, Yaskawa Electric Corporation, Japan

Fault tolerant digital control of 2 MVA parallelable frequency converters for harbor applications

Dr. Andrea Toscani, University of Parma, Italy
Prof. Paolo Cova, University of Parma, Italy
Dr. Fulvio Bertoluzza, University of Parma, Italy
Mr. Nicola Pini, University of Parma, Italy
Prof. Giovanni Franceschini, University of Parma, Italy

Active Filter Solutions with High Reliability for More Electric Aircraft

Dr. Zhong Chen, Aero-Power Sci-tech center, Nanjing University of Aero. & Astro., China
Mr. Miao Chen, Aero-Power Sci-tech center, Nanjing University of Aero. & Astro., China

A Three-Phase Four-Wire Unified Power Quality Conditioner Without Series Transformers

Prof. Luis Monteiro, State University of Rio de Janeiro, Brazil
Mr. Jose Pinto, University of Minho, Portugal
Prof. Joao Afonso, University of Minho, Portugal
Prof. Maria Bellar, State University of Rio de Janeiro, Brazil

SS53 b - Microgrids II
A-1302, Saturday 27th of October, 14h00

Chair/s: Josep M. Guerrero, Baylon G. Fernandes

Minimum loss control of Low-Voltage Residential Microgrids

Prof. Paolo Tenti, University of Padova, Italy
Dr. Alessandro Costabeber, University of Padova, Italy
Prof. Paolo Mattavelli, Center for Power Electronics Systems, Virginia Tech, USA
Mr. Francesco Sichirollo, University of Padova, Italy

Power Management using Model Predictive Control in a hydrogen-based microgrid

Mr. Luis Valverde, School of Engineering. University of Seville, Spain
Dr. Carlos Bordons, School of Engineering. University of Seville, Spain
Dr. Felipe Rosa, School of Engineering. University of Seville, Spain

SoC-Based Dynamic Power Sharing Method with AC-Bus Voltage Restoration for Microgrid Applications

Mr. Xiaonan Lu, Tsinghua University, China
Dr. Kai Sun, Tsinghua University, China
Prof. Josep M. Guerrero, Aalborg University, Denmark
Prof. Lipei Huang, Tsinghua University, China

Energy Storage design for Primary Frequency Control for Islanding Micro grid

Ms. Jiravan Mongkoltanatas, Student, France
Mrs. Delphine Riu, Supervisor, France
Mr. Xavier LePivert, Supervisor, France

Battery Management Fuzzy Control for a Grid- Tied Microgrid with Renewable Generation

Mr. Diego Arcos-Aviles, Univeristat Politecnica de Catalunya, Spain
Prof. Francesc Guinjoan, Univeristat Politecnica de Catalunya, Spain
Dr. Javier Barricarte, Universidad Publica de Navarra, Spain
Prof. Luis Marroyo, Universidad Publica de Navarra, Spain
Prof. Pablo Sanchis-Gurpide, Universidad Publica de Navarra, Spain
Prof. Hugo Valderrama-Blavi, Universitat Rovira i Virgili, Spain

SS06 a - Advanced Topologies of Wind Energy Conversion Systems
A-1340, Saturday 27th of October, 14h00

Chair/s: Emil Levi, Mario Duran

A New Topology and Control Strategy for Centralized Ride-Through Capability of Wind Farm

Mr. Lucheng Hong, Tsinghua University, China
Prof. Qirong Jiang, Tsinghua University, China
Mr. Liang Wang, Tsinghua University, China
Mr. Wei Du, Tsinghua University, China

Dc-link Voltage Balancing of Six-phase Wind Energy Systems with Series-connected Machine-side Converters and NPC Grid-side Converter

Mr. Hang S. Che, Liverpool John Moores University, United Kingdom
Dr. Mario J. Duran, University of Malaga, Spain
Dr. W.P. Hew, University of Malaya, Malaysia
Prof. Nasrudin A. Rahim, University of Malaya, Malaysia
Prof. Emil Levi, Liverpool John Moores University, United Kingdom
Dr. Martin Jones, Liverpool John Moores University, United Kingdom

A New High Frequency Grid Interface System for PMSG-Based Wind Turbine Generators in Low Power Applications

Mr. AmirHossein Rajaei, Tarbiat Modares University, Iran
Dr. Mustafa Mohamadian, Tarbiat Modares University, Iran
Dr. Ali Yazdian, Tarbiat Modares University, Iran

Low Voltage Ride Through Control of a Cascaded High Power Converter for Direct-drive Permanent Magnet Wind Generators

Dr. Xibo Yuan, The University of Bristol, United Kingdom

Power flow control with losess minimization and fault tolerance for PMSG

Mr. Guillermo Catuogno, Gea, Argentina
Dr. Daniel Forchetti, Gea, Argentina
Dr. Guillermo Garcia, Gea, Argentina
Dr. Roberto Leidhold, Esy, Germany

SS05 e - Power Converters and Control for Distributed Generation II
A-1350, Saturday 27th of October, 14h00

Chair/s: Ashoka Bhat, Hussein Athab

Analysis and Design of Interleaved Current-Fed Phase-Modulated Single-Phase Unfolding Inverter

Dr. Prasanna U. Rajagopal, National University of Singapore, Singapore
Dr. Akshay K. Rathore, National University of Singapore, Singapore

A Linear-Prediction Maximum Power Point Tracking Algorithm for Photovoltaic Power Generation

Mr. Lei Tang, Sichuan University, China
Dr. Wei Xu, Sichuan University, China
Dr. Chengbi Zeng, Sichuan University, China
Prof. David Dorrell, University of Technology Sydney, Australia
Prof. Xinghuo Yu, RMIT University, Australia

An Integrated Boost-Dual Half-Bridge LCL SRC with Capacitive Output Filter for Electrolyser Application

Mr. Deepak Gautam, Delta-Q Technologies Corp., Canada
Dr. Ashoka K.S. Bhat, University of Victoria, Canada

A Non-isolated Three-port Converter for Stand-Alone Renewable Power System

Mr. Zihu Zhou, Nanjing University of Aeronautics and Astronautics, China
Mr. Hongfei Wu, Nanjing University of Aeronautics and Astronautics, China
Mr. Xudong Ma, Southeast University, China
Prof. Yan Xing, Nanjing University of Aeronautics and Astronautics, China

A Multi-input Bi-directional Converter with Decoupled Power Distribution Control

Ms. Lingling Cao, Department of Electronic and Information Engineering, Hong Kong Polytechnic University, Hong Kong
Dr. K.H. Loo, Faculty of Engineering, Hong Kong Polytechnic University, Hong Kong
Dr. Y.M. Lai, Department of Electronic and Information Engineering, Hong Kong Polytechnic University, Hong Kong
Prof. Chi K Tse, Department of Electronic and Information Engineering, Hong Kong Polytechnic University, Hong Kong
Prof. Yugang Yang, Liaoning Technical University, China

SS39 c - Multilevel Converters Applications, Topologies, Control and Modulation Techniques III
A-1752, Saturday 27th of October, 14h00

Chair/s: Leopoldo G. Franquelo, Marcelo Perez

Asymmetric Multilevel STATCOM to compensate Reactive Power and Current Harmonics

Dr. Javier Munoz, University of Talca, Chile
Prof. Jose Espinoza, University of Concepcion, Chile
Dr. Carlos Baier, University of Talca, Chile
Prof. Luis Moran, University of Concepcion, Chile
Dr. Johan Guzman, University of Talca, Chile
Mr. Jaime Rohten, University of Concepcion, Chile

Reducing Harmonics and DC-Link Capacitors in Cascaded Multilevel Converters using Inter-Cell Magnetic Couplings

Dr. Carlos R. Baier, Universidad de Talca, Chile
Prof. Jose Espinoza, Universidad de Concepción, Chile
Dr. Javier Muñoz, Universidad de Talca, Chile
Mr. Pedro Melin, Universidad de Concepción, Chile
Dr. Johan Guzman, Universidad de Talca, Chile

Frequency-Domain Modeling of Modular Multilevel Converters - With Application to Maximizing the Operating Region

Dr. Staffan Norrga, KTH Royal Inst. of Technology, Sweden
Mr. Kalle Ilves, KTH Royal Inst. of Technology, Sweden
Prof. Lennart ÄNgquist, KTH Royal Inst. of Technology, Sweden
Prof. Lennart Harnefors, KTH Royal Inst. of Technology, Sweden
Prof. Hans-Peter Nee, KTH Royal Inst. of Technology, Sweden

Capacitor voltage balance of MMC converters in bidirectional power flow operation

Mr. Ricardo Lizana, Universidad Tecnica Federico Santa Maria, Chile
Mr. Cristian Castillo, Universidad Tecnica Federico Santa Maria, Chile
Dr. Marcelo A. Perez, Universidad Tecnica Federico Santa Maria, Chile
Prof. Jose Rodriguez, Universidad Tecnica Federico Santa Maria, Chile

Single DC-link Cascaded H-bridge Multilevel Multistring Photovoltaic Energy Conversion System with Inherent Balanced Operation

Dr. Samir Kouro, Universidad Tecnica Federico Santa Maria, Chile
Mr. Carlos Fuentes, Universidad Tecnica Federico Santa Maria, Chile
Dr. Marcelo Perez, Universidad Tecnica Federico Santa Maria, Chile
Prof. Jose Rodriguez, Universidad Tecnica Federico Santa Maria, Chile

TT03 m - Electrical Drives and Control II
B-0904, Saturday 27th of October, 14h00

Chair/s: Marco Liserre, Mickael Hilairet

Direct control strategy of synchronous generators using DC/DC converter

Dr. Barakat Abdallah, University of Poitiers, France
Dr. Tnani Slim, University of Poitiers, France
Prof. Champenois Gérard, University of Poitiers, France
Dr. Mouni Emile, Leroy Somer Motors, France

Analytical Study of Torque vs. Speed Characteristics of PM Brushless DC Drives

Prof. Giuseppe Buja, University of Padova, Italy
Dr. Manuele Bertoluzzo, University of Padova, Italy
Dr. Ritesh Keshri, University of Padova, Italy
Prof. Roberto Menis, University of Trieste, Italy

Initial Rotor Position Identification in Medium Voltage Synchronous Machines

Mr. Simon Feuersänger, Universität Siegen, Germany
Prof. Mario Pacas, Universität Siegen, Germany

Mechanical drive train emulation by means of electrical drives - a generalised approach

Dr. Luca Peretti, ABB Corporate Resarch, Sweden
Dr. Ville Särkimäki, ABB Corporate Research, Sweden

SS18 a - Assistive Technology on Human Factor I
B-0906, Saturday 27th of October, 14h00

Chair/s: Hiroshi Hashimoto, Sho Yokota

Study on Motion Design for Service Robot based on Standard Human Motion

Dr. Sho Yokota, Setsunan University, Japan
Prof. Hiroshi Hashimoto, Advanced Institute of Industrial Technology, Japan
Prof. Daisuke Chugo, Kwansei Gakuin University, Japan
Dr. Kuniaki Kawabata, Riken, Japan

Effect of Usage of Visualized Eye Fixation Points of Skilled Operators on Education of Plant Operation

Prof. Akio Gofuku, Okayama University, Japan
Mr. Shinya Ishibashi, Okayama University, Japan

Human assistive control on tele-operated human-robot cooperative carrying task

Mr. Shiro Matsunaga, Tokyo Denki University, Japan
Prof. Satoshi Suzuki, Tokyo Denki University, Japan

An Implementation of a Distributed Service Framework for Cloud-based Robot Services

Ms. Sachiko Nakagawa, Advanced Institute of Industrial Technology, Japan
Mr. Noboru Igarashi, Advanced Institute of Industrial Technology, Japan
Dr. Yosuke Tsuchiya, Advanced Institute of Industrial Technology, Japan
Prof. Masahiko Narita, Advanced Institute of Industrial Technology, Japan
Prof. Yuka Kato, Advanced Institute of Industrial Technology, Japan

Robotic Wheelchair with Omni-directional Vision for Moving alongside a Caregiver

Mr. Yoshinori Kobayashi, Saitama University, Japan
Mr. Ryota Suzuki, Saitama University, Japan
Prof. Yoshinori Kuno, Saitama University, Japan

SS15 b - Advances on Energy Storage Devices and Systems: Batteries
B-0908, Saturday 27th of October, 14h00

Chair/s: Roberto Saletti, Mo-Yuen Chow

Comparing Particle Filter and Extended Kalman Filter for Battery State-Of-Charge Estimation

Dr. Walter Zamboni, DIEII-Univ. degli Studi di Salerno, Italy
Dr. Rocco Restaino, DIEII-Univ. degli Studi di Salerno, Italy

Adaptive Parameter Identification and State-of-Charge Estimation of Lithium-Ion Batteries

Mr. Habiballah Rahimi Eichi, North Carolina State University, USA
Prof. Mo-Yuen Chow, North Carolina State University, USA

Hardware Building Blocks of a Hierarchical Battery Management System for a Fuel Cell HEV

Dr. Federico Baronti, University of Pisa, Italy
Dr. Gabriele Fantechi, University of Pisa, Italy
Prof. Roberto Roncella, University of Pisa, Italy
Prof. Roberto Saletti, University of Pisa, Italy
Prof. Pierangelo Terreni, University of Pisa, Italy

Factors for an LRV voltage booster simulation

Mr. Francois Ruelland, École de technologie supérieure, Canada
Prof. Kamal Al-Haddad, École de technologie supérieure, Canada

Using Transient Electrical Measurements for Real-Time Monitoring of Battery State-of-Charge and State-of-Health

Dr. Lalit Mandal, East Penn Manufacturing, USA
Prof. Robert Cox, UNC Charlotte, USA
Mr. Jukkrit Noppakunkajorn, UNC Charlotte, USA
Mr. Omar Baroudi, UNC Charlotte, USA

TT06 e - Mechatronics and Robotics V
B-1502, Saturday 27th of October, 14h00

Chair/s: Takayuki Koizumi, Hicham Chaoui

Design and experimental validation of a hierarchical control strategy for 7 DOF manipulators

Mr. Raouf Fareh, École de technologie supérieure, Canada
Prof. Mohamad Saad, UQAT, Canada
Prof. Maarouf Saad, École de technologie supérieure, Canada

Gripping Strategy of Pneumatic Robot Arm for Industrial Fields

Mr. Sho Maeda, Doshisha univ., Japan
Prof. Nobutaka Tsujiuchi, Doshisha univ., Japan
Prof. Takayuki Koizumi, Doshisha univ., Japan
Mr. Isao Nakai, Squse, Japan
Mr. Mitsumasa Sugiura, Squse, Japan

Adaptive Neural Network Control of Flexible-Joint Robotic Manipulators with Friction and Disturbance

Dr. Hicham Chaoui, Université du Québec à Trois-Rivières, Canada
Prof. Pierre Sicard, Université du Québec à Trois-Rivières, Canada

On passivity--based control of a class of electrically driven robots

Dr. Javier Moreno-Valenzuela, Instituto Politecnico Nacional-CITEDI, Mexico
Dr. Ricardo Campa, Instituto Tecnologico de La Laguna, Mexico
Dr. Victor Santibanez, Instituto Tecnologico de La Laguna, Mexico

An Extended Jacobian Matrix and Multirate Control for Bilateral Control between Different Time Resolution Systems

Dr. Sho Sakaino, Saitama University, Japan
Dr. Toshiaki Tsuji, Saitama University, Japan

SS26 a - Real-World Haptics
B-1504, Saturday 27th of October, 14h00

Chair/s: Seiichiro Katsura, Kiyoshi Ohishi

A Design Method of Bilateral Control System Based on Interactive Parameters

Mr. Takahiro Mizoguchi, Keio University, Japan
Mr. Takahiro Nozaki, Keio University, Japan
Dr. Kouhei Ohnishi, Keio University, Japan

Force Sensation Improvement in Bilateral Control of Different Master-Slave Mechanism Based on High-order Disturbance Observer

Ms. Thao Tran Phuong, Nagaoka University of Technology, Japan
Mr. Manuel Nandayapa, Nagaoka University of Technology, Japan
Dr. Chowarit Mitsantisuk, Nagaoka University of Technology, Japan
Dr. Yuki Yokokura, Nagaoka University of Technology, Japan
Prof. Kiyoshi Ohishi, Nagaoka University of Technology, Japan

Bilateral Control Considering Transition of Subsystems based on Ability to Oppose the Thumb

Mr. Yuki Nagatsu, School of Integrated Design Engineering, Keio Univ., Japan
Prof. Seiichiro Katsura, Department of System Design Engineering, Keio Univ., Japan

Bilateral Control with 2-DOF Haptic Spherical Interface

Mr. Kento Watanabe, Keio University, Department of System Design Engineering, Japan
Mr. Keita Shimamoto, Keio University, Department of System Design Engineering, Japan
Prof. Kouhei Ohnishi, Keio University, Department of System Design Engineering, Japan

Error Correction for Wireless Haptic Communication

Ms. Nozomi Suzuki, Keio University, Japan
Prof. Seiichiro Katsura, Keio University, Japan

SS37 a - System Technologies for Building and Home Automation and Control
B-1506, Saturday 27th of October, 14h00

Chair/s: Jan Haase, Joern Ploennigs

Resource-based middleware in the context of heterogeneous building automation systems

Mr. Laurent-Frederic Ducreux, CEA-LETI Minatec Campus, France
Dr. Claire Guyon-Gardeux, CEA-LETI Minatec Campus, France
Prof. Suzanne Lesecq, CEA-LETI Minatec Campus, France
Dr. Francois Pacull, CEA-LETI Minatec Campus, France
Mrs. Safietou R. Thior, CEA-LETI Minatec Campus, France

BASont - A modular, adaptive Building Automation System Ontology

Dr. Joern Ploennigs, IBM Research, Smarter Cities Technology Centre, Ireland
Mr. Burkhard Hensel, Dresden University of Technology, Germany
Mr. Henrik Dibowski, Dresden University of Technology, Germany
Prof. Klaus Kabitzsch, Dresden University of Technology, Germany

Limiting Constraints for ZigBee Networks

Mr. Dominik Bunyai, Vienna University of Technology, Austria
Mr. Lukas Krammer, Vienna University of Technology, Austria
Prof. Wolfgang Kastner, Vienna University of Technology, Austria

Sensors, models and platform for ambient control

Mr. Denis Stein, Technische Universität Dresden, Germany
Mr. Matthias Lehmann, Technische Universität Dresden, Germany
Dr. Joern Ploennigs, Technische Universität Dresden, Germany
Prof. Klaus Kabitzsch, Technische Universität Dresden, Germany

Software component architecture for co-simulation applied to the coupling between a building's thermal envelope and its inhabitant behaviour

Ms. Sana Gaaloul, G2elab, France
Mr. Xuan Hoa Binh Le, Gscop, France
Mr. Benoit Delinchant, G2elab, France
Mr. Frederic Wurtz, G2elab, France
Mr. Stephane Ploix, Gscop, France

TT01 I - Control Applications I
B-1514, Saturday 27th of October, 14h00

Chair/s: Hideki Hashimoto , Jorge Duarte

A MIMO Intelligent Control for Ball Mill Systems

Prof. Limin Liu, Huzhou University, China

Control of a Hysteretic Electromagnetic Electron Lens System

Mr. Bas Vermulst, Eindhoven University of Technology, Netherlands
Dr. Jorge Duarte, Eindhoven University of Technology, Netherlands
Dr. Nelis van Lierop, Eindhoven University of Technology, Netherlands

Precise Position Control of Two-axes Pan/Tilt System in Extreme Environment

Dr. Michal Malek, EVPU a.s., Slovak Republic
Dr. Rastislav Kastier, EVPU a.s., Slovak Republic
Dr. Martin Hrasko, EVPU a.s., Slovak Republic

Underdetermined Multivariable Dead-Beat Controller

Mr. Philip Dost, Ruhr-Universität Bochum, Germany
Prof. Andreas Steimel, Ruhr-Universität Bochum, Germany
Dr. Carsten Heising, Avasition GmbH, Germany

Design of Artificial Neural Network controller for continually stirred tank heater

Mr. Kumar Gaurav, IITRoorkee, India
Prof. Shaktidev Mukherjee, IITRoorkee, India

Color Control in RGB Driver System Applicable to LED of All Ageing Conditions

Mr. Sau Kin Ng, +852-65093993, Hong Kong
Dr. Ka Hong Loo, +852-34003811, Hong Kong
Dr. Yuk Ming Lai, +852-2766 6254, Hong Kong
Prof. Chi Kong Tse, +852-2766 6262, Hong Kong

SS60 a - RFID Technology And Wireless Sensors - I
B-1516, Saturday 27th of October, 14h00

Chair/s: Antonio Torralba, Teresa Riesgo

Simulation Tool and Case Study for Planning Wireless Sensor Network

Ms. Danping He, Universidad Politecnica de Madrid, Spain
Mr. Gabriel Mujica, Universidad Politecnica de Madrid, Spain
Dr. Jorge Portilla, Universidad Politecnica de Madrid, Spain
Prof. Teresa Riesgo, Universidad Politecnica de Madrid, Spain

On the Design of Wireless Sensor Networks for Autonomous Heliostats in Solar Tower Power Plants

Mr. Joaquin Cabezas, University of Sevilla, Spain
Mrs. Elena Aguilar, University of Sevilla, Spain
Mr. Alejandro Pastor, University of Sevilla, Spain
Mr. Alejandro Méndez, University of Sevilla, Spain
Prof. Antonio Torralba, University of Sevilla, Spain
Prof. Ramon G. Carvajal, University of Sevilla, Spain
Mr. Evaristo Aranda, Adevice Solutions, S.L., Spain
Mr. Jesus Viguera, Adevice Solutions, S.L., Spain

Game theoretic channel assignment for wireless sensor networks with geographic routing

Mr. Carlos Henrique Barriquello, Ufsm, Brazil
Mr. Gustavo Weber Denardin, Ufsm, Brazil
Prof. Alexandre Campos, Ufsm, Brazil
Prof. Ricardo Nederson do Prado, Ufsm, Brazil

A Monitoring System for Identification and Validation of the Energetic Model of a Building using Wireless Sensor Networks

Ms. Elena Aguilar, University of Seville, Spain
Dr. Antonio Torralba, University of Seville, Spain
Dr. Ramon Gonzalez, University of Seville, Spain
Mr. Joaquin Cabezas, University of Seville, Spain
Mr. Jose Sanchez, University of Seville, Spain
Dr. Jose Manuel Salmeron, University of Seville, Spain

Hardware-Software Integration Platform for a WSN Testbed Based on Cookies Nodes

Mr. Gabriel Mujica, Universidad Politecnica de Madrid, Spain
Mr. Victor Rosello, Universidad Politecnica de Madrid, Spain
Dr. Jorge Portilla, Universidad Politecnica de Madrid, Spain
Dr. Teresa Riesgo, Universidad Politecnica de Madrid, Spain

SS14 b - MEMS, Microsensors and Microactuators I
B-1518, Saturday 27th of October, 14h00

Chair/s: Ridha Ben Mrad, Stoyan N. Nihtianov

Performance of an Electrostatic Actuated Micromirror in a vacuum and non-vacuum Packaging

Mr. Imran Khan, University of Toronto, Canada
Mr. James Chong, University of Toronto, Canada
Prof. Ridha Ben Mrad, University of Toronto, Canada
Prof. Siyuan He, Ryerson University, Canada
Dr. Michael Schertzer, University of Toronto, Canada

Impact on the electrostatic field of electrostatic force microscope due to tip-sample distance and non-flat sample surface

Mr. Jie Mei, Swansea University, United Kingdom
Dr. Lijie Li, Swansea University, United Kingdom
Prof. Steve Wilks, Swansea University, United Kingdom

Electrical Performance Stability Characterization of High-Sensitivity Si-Based EUV Photodiodes in a Harsh Industrial Application

Mr. Lei Shi, Delft University of Technology, Netherlands
Dr. Stoyan N. Nihtianov, Delft University of Technology, Netherlands
Dr. Frank Scholze, Physikalisch-Technische Bundesanstalt (PTB), Germany
Prof. Lis K. Nanver, Delft University of Technology, Netherlands

A MEMS Demodulator Based on an Electrostatic Actuator

Ms. So-Ra Chung, University of Waterloo, Canada
Prof. Eihab Abdel-Rahman, University of Waterloo, Canada
Prof. John Yeow, University of Waterloo, Canada

Low Voltage Electrostatic Actuation and Angular Displacement Measurement of Micromirror Coupled with Resonant Drive Circuit

Dr. Sangtak Park, University of Waterloo, Canada
Mr. Manu Pallapa, University of Waterloo, Canada
Prof. John T.W. Yeow, University of Waterloo, Canada
Prof. Eihab Abdel-Rahman, University of Waterloo, Canada

TT04 a - FPGA-based Power Application
B-1708, Saturday 27th of October, 14h00

Chair/s: Marc Perron, Eric Monmasson

An FPGA Prototype of Current and Voltage Predictive Controller for High Switching Frequency Buck Converter

Dr. Bo Li, INSA Lyon, France
Prof. Xuefang Lin-Shi, INSA Lyon, France
Prof. Bruno Allard, INSA Lyon, France
Prof. Jean-Marie Retif, INSA Lyon, France

FPGA-based 2nd-Order Sigma-Delta A/D Converter for Current Measurement for Resonant Power Converters

Mr. Oscar Jimenez, University of Zaragoza, Spain
Dr. Oscar Lucia, University of Zaragoza, Spain
Dr. Isidro Urriza, University of Zaragoza, Spain
Dr. Luis A. Barragan, University of Zaragoza, Spain
Dr. Jose I. Artigas, University of Zaragoza, Spain
Dr. Denis Navarro, University of Zaragoza, Spain

FPGA based predictive deadbeat control for high switching frequency SEPIC

Dr. Nan Li, INSA Lyon, France
Prof. Xuefang Lin-Shi, INSA Lyon, France
Prof. Bruno Allard, INSA Lyon, France
Prof. Pierre Lefranc, Energy Systems Department, France
Prof. Emmanuel Godoy, Automatic Control Department, SUPELEC, France
Dr. ALi Jaafar, Automatic Control Department, SUPELEC, France

Full System on Programmable Chip Solution for DPC control of three phase PWM boost rectifier

Mrs. Marwa Ben Said, University of Tunis El Manar, Tunisia
Dr. Wissem Naouar, University of Tunis El Manar, Tunisia
Mrs. Imen Bahri, Ucp, France
Prof. Eric Monmasson, Ucp, France
Ms. Meriem Merai, University of Tunis El Manar, Tunisia
Ms. Meriam Douma, University of Tunis El Manar, Tunisia
Prof. Ilhem Slama-Belkhodja, University of Tunis El Manar, Tunisia

Control of Voltage Source Inverter using FPGA Implementation of ADALINE-FLL

Mrs. Cristina Guzman, Université du Québec à Trois-Rivières, Canada
Mr. Alben Cardenas, Université du Québec à Trois-Rivières, Canada
Prof. Kodjo Agbossou, Université du Québec à Trois-Rivières, Canada

TT07 w - Renewable Energy Applications III
A-1170, Saturday 27th of October, 16h00

Chair/s: Alireza Bakhshai, Vinod Khadkikar

Open-Circuit Fault Detection Analysis for Indirect Matrix Converter in Microturbine Generation Systems

Mr. J. Alexis Andrade-Romero, Universidade Federal do ABC, Brazil
Mrs. Victoria Herrera, Universidade Federal do ABC, Brazil
Dr. J. Franklin A. Romero, Universidade Federal do ABC, Brazil

An Efficiency Investigation and Experimental Verification of EGS with VSCF

Dr. Jan Leuchter, University of Defence, Czech Republic
Prof. Pavol Bauer, Delft University of Technology, Netherlands
Dr. Ahmed Zobaa, Brunel University, United Kingdom

Research on a Combined Input-Series Output-Parallel DC/DC Converter

Mr. Peng Zhao, 1. Nanjing University of Aeronautics and Astronautics 2. Hohhot Power Supply Bureau, China
Prof. Lan Xiao, Nanjing University of Aeronautics and Astronautics, China
Mr. Zilong Wang, Nanjing University of Aeronautics and Astronautics, China

Efficiency of Capacitively Loaded Converters

Mr. Thomas Andersen, Technical University of Denmark, Denmark
Ms. Lina Huang, Technical University of Denmark, Denmark
Prof. Michael A.E. Andersen, Technical University of Denmark, Denmark
Prof. Ole C. Thomsen, Technical University of Denmark, Denmark

Energy Harvesting Cycles of Dielectric ElectroActive Polymer Generators

Mr. Emmanouil Dimopoulos, Aalborg University, Denmark
Dr. Ionut Trintis, Aalborg University, Denmark
Prof. Stig Munk-Nielsen, Aalborg University, Denmark

ICELIE - ICT & Laboratory Work
A-1242, Saturday 27th of October, 16h00

Chair/s: Vahe Nerguizian, Radhi Mhiri

Automation & Control Remote Laboratory: Evaluating a Cooperative Methodology

Prof. Filomena Soares, University of Minho, Portugal
Prof. Celina Leao, University of Minho, Portugal
Prof. Vitor Carvalho, University of Minho, Portugal
Prof. Rosa Vasconcelos, University of Minho, Portugal
Ms. Sandra Costa, University of Minho, Portugal

Configuration and Management Tool for Laboratory Training

Mr. Saher Arnous, LIRIS - INSA Lyon - Universite de Lyon, France
Dr. Arnaud Leleve, Ampere - INSA Lyon - Universite de Lyon, France
Dr. Khalid Kouiss, Limos - Ifma, France
Prof. Patrick Prevot, LIRIS - INSA Lyon - Universite de Lyon, France

Lab@home for analog electronic circuit laboratory

Dr. Vahé Nerguizian, ÉCole De Technologie SupéRieure, Canada
Dr. Radhi Mhiri, ÉCole De Technologie SupéRieure, Canada
Dr. Hamdjatou Kane, Université du Québec en Outaouais, Canada
Dr. Jean-Sébastien Deschênes, Université du Québec à Rimouski, Canada
Dr. Hamadou Saliah-Hassane, Télé-université du Québec, Canada
Dr. Maarouf Saad, ÉCole De Technologie SupéRieure, Canada

The experience of a collaborative project on remote laboratory: From development to operation

Prof. Radhi Mhiri, ÉTs, Canada
Prof. Maarouf Saad, ÉTs, Canada
Dr. Moustapha Dodo Amadou, ÉTs, Canada
Mr. Gérald Brady, CÉGEP Granby, Canada
Mr. Saber Ouertani, CÉGEP Sorel Tracy, Canada
Mrs. Sandra Sahli, CÉGEP Valleyfield, Canada
Prof. Hamadou Saliah-Hassane, TÉLuq, Canada
Prof. Vahé Nerguizian, ÉTs, Canada

The Impacts of Project-based Teaching Approach on Students' Motivation

Mr. Mammar Belagra, Université de Béchar, Algeria

TT07 x - Magnetic Component Design and Applications
A-1300, Saturday 27th of October, 16h00

Chair/s: Alexander Prodic, M. A. E. Andersen

New Method of EMI Analysis in Power Electronics based on Semiconductors Transient Models: Application to SiC MOSFET/Schottky Diode

Mr. Slim Hrigua, SATIE, ENS Cachan, France
Prof. François Costa, SATIE, ENS Cachan, France
Mr. Cyrille Gautier, SATIE, ENS Cachan, France
Mr. Bertrand Revol, SATIE, ENS Cachan, France

Printed Circuit Board integrated toroidal Radio Frequency Inductors

Mr. Peter Kamby, Technical University of Denmark, Denmark
Dr. Arnold Knott, Technical University of Denmark, Denmark
Prof. Michael A.E. Andersen, Technical University of Denmark, Denmark

Effective Method of Using Electromagnetic Coupling of Air-core Reactor

Mr. Takayuki Nakamura, Railway Technical Research Institute, Japan
Mr. Yoshiaki Taguchi, Railway Technical Research Institute, Japan
Mr. Masamichi Ogasa, Railway Technical Research Institute, Japan

Implementation of different layouts of a coreless planar transformer for a flyback converter

Mr. Abdoulkarim Bouabana, Ruhr University Bochum, Germany
Prof. Constantinos Sourkounis, Ruhr University Bochum, Germany

First Harmonic Equivalent Impedance of Coupled Inductive Loads for Induction Heating Applications

Dr. C. Carretero, Universidad de Zaragoza, Spain
Dr. O. Lucia, Universidad de Zaragoza, Spain
Dr. J. Acero, Universidad de Zaragoza, Spain
Prof. J.M. Burdio, Universidad de Zaragoza, Spain

SS53 c - Microgrids III
A-1302, Saturday 27th of October, 16h00

Chair/s: Josep M. Guerrero, Baylon G. Fernandes

DC Network Stability and Dynamic Analysis Using Virtual Impedance Method

Dr. Dong Chen, Queen's University of Belfast, United Kingdom
Dr. Lie Xu, Queen's University of Belfast, United Kingdom
Dr. Liangzhong Yao, China Electric Power Research Institute, Beijing, China

Module Integrated DC-DC Converter for Integration of Photovoltaic Source with DC Micro-grid

Mr. Vishal Vekhande, Indian Institute of Technology Bombay, India
Prof. B. G. Fernandes, Indian Institute of Technology Bombay, India

Organically Grown Micro-grids: Development of a Solar Neighbourhood Micro-grid Concept for Off-Grid Communities

Mr. Kurtis Unger, University of Waterloo, Canada
Dr. Mehrdad Kazerani, University of Waterloo, Canada

Analysis of Protection System for a Microgrid Supplying Irrigation Load in Toshka Area

Prof. Mazen Abdel-Salam, Assiut University, Egypt
Prof. Adel Ahmed, Assiut University, Egypt
Dr. Hamdy Zidan, Assiut University, Egypt
Mr. Mahmoud Amery, Assiut University, Egypt
Mr. Mohamed Swify, Assiut University, Egypt
Dr. Rashad Kamel, Assiut University, Egypt

Steady-state Modeling and Control of a Microgrid Supplying Irrigation Load in Toshka Area

Prof. Mazen Abdel-Salam, Assiut University, Egypt
Dr. Hamdy Zidan, Assiut University, Egypt
Dr. Rashad Kamel, Assiut University, Egypt
Dr. Khairy Sayed, Sohag University, Egypt
Mr. Mahmoud Amery, Assiut University, Egypt
Mr. Mohamed Swify, Assiut University, Egypt
Prof. Adel Ahmed, Assiut University, Egypt

SS06 b - Advanced Control of Wind Energy Conversion Systems
A-1340, Saturday 27th of October, 16h00

Chair/s: Samir Kouro, Mario Duran

Hierarchical Coordinated Control of DC Microgrid with Wind Turbines

Dr. Lirong Zhang, North China Electric Power University, China
Prof. Yi Wang, North China Electric Power University, China
Prof. Heming Li, North China Electric Power University, China
Mr. Pin Sun, North China Electric Power University, China

Optimal Control of a Grid Connected Variable Speed Wind Energy Conversion System based on Squirrel Cage Induction Generator

Dr. Bachir Kedjar, Ecole de technologie superieure, Canada
Prof. Kamal Al-Haddad, Ecole de technologie superieure, Canada

Capability of Asymmetrical Grid Faults Ride-through for DFIG-based Wind Turbines

Mr. Zhong Zheng, Department of Automation, Tsinghua University, China
Prof. Geng Yang, Department of Automation, Tsinghua University, China
Dr. Hua Geng, Department of Automation, Tsinghua University, China

An Effective Harmonic Elimination for DFIG Feeding Non-Linear Loads in Stand-Alone Operation

Mr. Ngoc-Tung Nguyen, University of Ulsan, Korea (South)
Prof. Hong-Hee Lee, University of Ulsan, Korea (South)

SS54 b - Efficient Power Converters for Photovoltaic and Wind Power Conversion II
A-1350, Saturday 27th of October, 16h00

Chair/s: Mariusz Malinowsky, Kamal Al-Haddad

Adaptive Distributed MPPT Algorithm for Photovoltaic Systems

Mr. Fabrizio Scarpetta, Politecnico di Bari, Italy
Prof. Marco Liserre, Politecnico di Bari, Italy
Dr. Rosa A. Mastromauro, Politecnico di Bari, Italy

Multilevel Open-ended Transformer Based Grid Feeding Inverter for Solar Photovoltaic Application

Mr. Sandeep Anand, Indian Institute of Technology Bombay, India
Prof. B.G. Fernandes, Indian Institute of Technology Bombay, India

Maximum Power Point Tracker for Small Number of Solar Cells Connected in Series

Mr. Sebastian Strache, Chair of Integrated Analog Circuits & RF Systems, Germany
Mr. Jan Henning Mueller, Chair of Integrated Analog Circuits & RF Systems, Germany
Mr. Dominik Platz, RWTH Aachen University, Germany
Mr. Ralf Wunderlich, Chair of Integrated Analog Circuits & RF Systems, Germany
Mr. Stefan Heinen, Chair of Integrated Analog Circuits & RF Systems, Germany

High Efficiency Control Method for Interleaved Flyback Inverter with Synchronous Rectifier Based on Photovoltaic AC Modules

Mr. Jin-Woo Jang, Sungkyunkwan UNIV., Korea (South)
Mr. Young-Ho Kim, Sungkyunkwan UNIV., Korea (South)
Mr. Dong-Kyun Ryu, Samsung Electro-Mechanics, Korea (South)
Prof. Chung-Yuen Won, Sungkyunkwan UNIV., Korea (South)
Prof. Yong-Che Jung, Namseoul UNIV., Korea (South)

One Novel Variable Step-Size MPPT Algorithm for Photovoltaic Power Generation

Mr. Lei Tang, Sichuan University, China
Dr. Wei Xu, Sichuan University, China
Prof. Cengbi Zeng, Sichuan University, China
Prof. Jinhu Lu, Rmit, Australia
Mr. Jinwei He, University of Alberta, Canada

SS41 - Design and Control of High Power Converters for Renewable Energy Systems
A-1752, Saturday 27th of October, 16h00

Chair/s: Maurice Fadel, Imad Mougharbel

Performance and Loss Evaluation of a Hard and Soft Switched 2.4 MW, 4 kV to 6 kV Isolated DC-DC Converter for a Wind Energy Application.

Mr. Maziar Mobarrez, Chalmers University of Technology, Sweden
Mr. Majid Fazlali, Chalmers University of Technology, Sweden
Mr. M. Amin Bahmani, Chalmers University of Technology, Sweden
Prof. Torbjörn Thiringer, Chalmers University of Technology, Sweden

Modified MPPT with Using Model Predictive Control for Multilevel Boost Converter

Mr. Mostafa Mosa, Researcher Associate, Qatar
Prof. Haitham Abu Rub, Professor, Qatar
Dr. Mahrous Ahmed, Assistant Professor, Egypt
Prof. José Rodríguez, Professor, Chile

A zero-sequence component injected PWM method with reduced switching losses and suppressed common-mode voltage for a three-phase four-leg voltage source inverter

Mr. Min Zhang, School of EEE, Newcastle University, United Kingdom
Dr. David Atkinson, School of EEE, Newcastle University, United Kingdom
Dr. Matthew Armstrong, School of EEE, Newcastle University, United Kingdom

Cascaded H-Bridge & Neutral Point Clamped Hybrid Asymmetric Multilevel Inverter Topology for Grid Interactive Transformerless Photovoltaic Power Plant

Mr. Sumit K Chattopadhyay, IIT Kharagpur, India
Prof. Chandan Chakraborty, IIT Kharagpur, India
Prof. Bikash C Pal, Imperial College London, United Kingdom

Dynamics and Stability of Matrix-Converter Based Permanent Magnet Wind Turbine Generator

Prof. Bingsen Wang, Michigan State University, USA
Prof. Giri Venkataramanan, University of Wisconsin, USA

TT03 n - Special Machines and Drives
B-0904, Saturday 27th of October, 16h00

Chair/s: Marco Trapanese, Francesco Cupertino

Five-Phase Flux Switching Machine: Optimal current waveforms in order to improve open phase operation

Ms. Emna Ben Sedrine, The Satie Laboratory,ENS Cachan, France
Mr. Javier Ojeda, The Satie Laboratory,ENS Cachan, France
Mrs. Ilhem Slama-Belkhodja, Laboratory of Electrical Systems,ENIT, Tunisia
Mr. Mohamed Gabsi, The Satie Laboratory,ENS Cachan, France

Torque Production Capabilities of Electrical Machines with Planar Windings

Dr. Francesco Cupertino, Politecnico di Bari, Italy
Mr. Stefano Ettorre, Politecnico di Bari, Italy

Study of stator core-end packets under the action of two incident fluxes - Real scale model

Mr. Gilles Vogt, EDF R&D and LSEE, Univ. Artois, France
Prof. Raphaël Romary, LSEE, Univ. Artois, France
Dr. Guillaume Parent, LSEE, Univ. Artois, France
Dr. Valentin Costan, Edf R&D, France

The use of programmable automation controller in synchronous generator excitation system

Prof. Igor Erceg, Faculty, Croatia (Hrvatska)
Mr. Stjepan Tusun, Faculty, Croatia (Hrvatska)
Prof. Gorislav Erceg, Faculty, Croatia (Hrvatska)

Steady State Analysis of Brushless Doubly Fed Induction Machine Taking Core Loss into Account

Mr. Mohammad Naser Hashemnia, Sharif University of Technology, Iran
Dr. Farzad Tahami, Sharif University of Technology, Iran

SS18 b - Assistive Technology on Human Factor II
B-0906, Saturday 27th of October, 16h00

Chair/s: Satoshi Suzuki, Daisuke Chugo

Camera-Based Navigation for Service Robots using Pictographs on the Crossing Point

Dr. Daisuke Chugo, Kwansei Gakuin University, Japan
Mr. Kei Hirose, Kwansei Gakuin University, Japan
Mr. Katsuki Nakashima, Kwansei Gakuin University, Japan
Dr. Sho Yokota, Setsunan University, Japan
Dr. Hiroyuki Kobayashi, Osaka Institute of Technology, Japan
Prof. Hiroshi Hashimoto, Advanced Institute of Industrial Technology, Japan

Simultaneous Design of Robot Motion and Utterance Timing by Using Self-Organizing Maps

Mr. Jun Goto, Tokyo Denki University, Japan
Prof. Satoshi Suzuki, Tokyo Denki University, Japan

Moving Object Detection and Camera Motion Analysis from Moving Camera

Dr. Andrey Vavilin, University of Ulsan, Korea (South)
Prof. Kang-Hyun Jo, University of Ulsan, Korea (South)

A Feedforward Neural Network Wheelchair Driving Joystick

Mr. Yassine Rabhi, ESSTT Univ. Tunis, Tunisia
Dr. Makram Mrabet, ESSTT Univ. Tunis, Tunisia
Prof. Farhat Fnaiech, ESSTT Univ. Tunis, Tunisia

A kinematic model to analyze and simulate wheelchair propulsion

Dr. Nicolas Louis, HandiBio EA4322, France
Prof. Philippe Gorce, HandiBio EA4322, France

SS33 - Industrial Applications of Holonic and Multi-Agent Systems
B-0908, Saturday 27th of October, 16h00

Chair/s: Petr Kadera, Thomas Strasser

Instantiation of the Open-Control Concept in FMS based on Potential Fields

Mr. Pach Cyrille, Tempo-Psi, France
Mr. Berger Thierry, Tempo-Psi, France
Mr. Sallez Yves, Tempo-Psi, France
Mr. Trentesaux Damien, Tempo-Psi, France

A Multi-Agent System for data collection from power generators and weather stations in heterogeneous environments

Mr. Shahid Mahmood Awan, Al-Khawarizmi Institute of Computer Sciences, University of Engineering and Technology, Lahore,, Pakistan
Dr. Zubair Khan, Faculty of Electrical Engineering, University of Engineering and Technology, Lahore,, Pakistan
Mr. Abdur Rehman, Al-Khawarizmi Institute of Computer Sciences, University of Engineering and Technology, Lahore,, Pakistan
Dr. Waqar Mahmood, Al-Khawarizmi Institute of Computer Sciences, University of Engineering and Technology, Lahore,, Pakistan

Deviation Detection in Distributed Control Systems by Means of Statistical Methods

Mr. Petr Kadera, Czech Technical University in Prague, Czech Republic
Dr. Pavel Vrba, Czech Technical University in Prague, Czech Republic
Mr. Václav Jirkovský, Czech Technical University in Prague, Czech Republic

The distribution of computing services for buildings design and optimal management: cloud computing based on software component standard

Mr. Benoit Delinchant, G2elab, France
Ms. Sana Gaaloul, G2elab, France
Mr. Pierres Yves Gibello, EBM Websourcing, France
Mr. Franck Verdière, G2elab, France
Mr. Frederic Wurtz, G2elab, France

An approach to use PERA in Enterprise Modeling for industrial systems

Mr. Dazhuang He, Tampere University of Technology, Finland
Dr. Andrei Lobov, Tampere University of Technology, Finland
Mr. Luis E. Gonzalez Moctezumas, Tampere University of Technology, Finland
Prof. Jose Luis Martinez Lastra, Tampere University of Technology, Finland

SS52 - Aerospace Control
B-1502, Saturday 27th of October, 16h00

Chair/s: David Saussié, Ouassima Akhrif

A switched control for UAVs

Mr. Ricardo Sandoval, Cenidet, Mexico
Prof. Ilse Cervantes, IPICyT, Mexico
Prof. Manuel Adam, Cenidet, Mexico
Mr. Irwin Diaz, IPICyT, Mexico

Robust pitch autopilot design for agile missiles at high angle of attack

Dr. Yoonsoo Kim, Gyeongsang National University, Korea (South)
Prof. Byoung Soo Kim, Gyeongsang National University, Korea (South)

Purely aerodynamic pitch control for high-angle-of-attack missiles

Dr. Yoonsoo Kim, Gyeongsang National University, Korea (South)
Prof. Byoung Soo Kim, Gyeongsang National University, Korea (South)

Optimal Flight Control on the Hawker 800 XP Business Aircraft

Ms. Yamina Boughari, Ets, Canada
Prof. Ruxandra Botez, Ets, Canada

Matlab/Simulink software implementation and interfacing of a strap-down inertial attitude method

Prof. Teodor Lucian Grigorie, University of Craiova, Romania
Dr. Radu Obreja, University of Craiova, Romania
Prof. Jenica Ileana Corcau, University of Craiova, Romania
Prof. Liviu Dinca, University of Craiova, Romania

SS26 b - Human Support
B-1504, Saturday 27th of October, 16h00

Chair/s: Seiichiro Katsura, Kiyoshi Ohishi

Parameter Estimation of Flexible Robot Using Multi-Encoder Based on Disturbance Observer

Dr. Chowarit Mitsantisuk, Nagaoka University of Technology, Japan
Mr. Manuel Nandayapa, Nagaoka University of Technology, Japan
Prof. Kiyoshi Ohishi, Nagaoka University of Technology, Japan
Prof. Seiichiro Katsura, Keio University, Japan

Modeling Method Based on Wave Equation for Reproduction Control of Haptic Sensation

Mr. Yosuke Mizutani, School of Integrated Design Engineering, Keio University, Japan
Prof. Seiichiro Katsura, Department of System Design Engineering, Keio University, Japan

Two-dimensional Assist Control of Power-assisted Wheelchair considering Straight and Rotation Motion Decomposition

Ms. Kayoung Kim, The University Of Tokyo, Japan
Mr. Kanghyun Nam, The University Of Tokyo, Japan
Dr. Sehoon Oh, The University Of Tokyo, Japan
Prof. Hiroshi Fujimoto, The University Of Tokyo, Japan
Prof. Yoichi Hori, The University Of Tokyo, Japan

Reproducibility Analysis and Experimental Validation of Motion-Copying System

Prof. Yuki Yokokura, Nagaoka University of Technology, Japan
Prof. Kiyoshi Ohishi, Nagaoka University of Technology, Japan

Function Estimation of Grasping/Manipulating Motion in Scaled Bilateral Control Using Principal Component Analysis

Mr. Hiroki Nagashima, School of Integrated Design Engineering, Japan
Prof. Seiichiro Katsura, Department of System Design Engineering, Keio University, Japan

SS37 b - Sensor Models for Building and Home Automation and Control
B-1506, Saturday 27th of October, 16h00

Chair/s: Joern Ploennigs, Jan Haase

Support Vector Machine Based Methods For Non-Intrusive Identification of Miscellaneous Electric Loads

Mr. Liang Du, Georgia Institute of Techonoly, United States
Dr. Yi Yang, Eaton Corp. Innovation Center, United States
Mr. Dawei He, Georgia Institute of Techonoly, United States
Prof. Ronald G. Harley, Georgia Institute of Techonoly, United States
Prof. Thomas G. Habetler, Georgia Institute of Techonoly, United States
Dr. Bin Lu, Eaton Corp. Innovation Center, China

Estimation of the number of people under controlled ventilation using a CO2 concentration sensor

Mr. Ito Seiya, Keio University, Japan
Prof. Nishi Hiroaki, Keio University, Japan

A Survey on Consumer Electronic Products in Residential Home for Demand Response

Mr. Dawei He, Georgia Institute of Technology, USA
Mr. Rui Xia, Tsinghua University, China
Mr. Weixuan Lin, Tsinghua University, China
Prof. Thomas Habetler, Georgia Institute of Technology, USA

Actuators and Sensors Allocation for Adjacent Buildings Vibration Control

Prof. Huijun Gao, Harbin Institute of Technology, China

Using Smart Meters for Load Monitoring and Active Power-Factor Correction

Mr. Jason Anderson, UNC Charlotte, USA
Ms. Archana Sadhanala, UNC Charlotte, USA
Prof. Robert Cox, UNC Charlotte, USA

TT01 m - Control Systems
B-1514, Saturday 27th of October, 16h00

Chair/s: Sheldon Williamson, Lyne Woodward

On Bi-Proper Mapping Discretization of a Regular Descriptor System

Mr. Shin Kawai, University of Tsukuba, Japan
Prof. Noriyuki Hori, University of Tsukuba, Japan

Regularization for Polynomial Matrices and its Application to Descriptor Systems

Prof. Wataru Kase, Osaka Institute of Technology, Japan

A Skill Proficiency Evaluation Method of Individual Based on Accuracy and Repeatability

Mr. Daiki Suzuki, Keio University, Japan
Prof. Kouhei Ohnishi, Keio University, Japan

Robust Stability Anaylsis of the System with Disturbance Observer: The Real Parametric Uncertainity Approach II

Mr. Emre Sariyildiz, Keio University, Japan
Prof. Kouhei Ohnishi, Keio University, Japan

A New Variable Gain Controller for a Class of Uncertain Linear Systems via Piecewise Lyapunov Functions --- Less Conservative LMI Conditions ---

Dr. Hidetoshi Oya, The University of Tokushima, Japan
Mr. Yuji Morishima, The University of Tokushima, Japan
Prof. Kojiro Hagino, The University of Electro-Communications, Japan

SS60 b - RFID Technology And Wireless Sensors - II
B-1516, Saturday 27th of October, 16h00

Chair/s: Jorge Portilla, Jin-Shyan Lee

Automated Meter Reading based on IEEE 802.15.4

Mr. José Peral, University of Sevilla, Spain
Mr. Emilio Merlo, University of Sevilla, Spain
Mr. Ricardo Labrador, University of Sevilla, Spain
Prof. Antonio Torralba, University of Sevilla, Spain
Prof. Ramón G. Cavajal, University of Sevilla, Spain
Ms. María Gil, Adevice Solutions, Spain
Mr. Daniel Villalba, Adevice Solutions, Spain
Mr. Alfonso Grande, Adevice Solutions, Spain
Mr. Manuel Moreno, Adevice Solutions, Spain
Mr. Jesús Viguera, Adevice Solutions, Spain

A Neural Network Approach for Radio Frequency Based Indoors Localization

Prof. Abilio Azenha, Institute for Systems and Robotics, Faculty of Engineering, University of Porto, Portugal
Mr. Luis Peneda, Institute for Systems and Robotics, Faculty of Engineering, University of Porto, Portugal
Prof. Adriano Carvalho, Institute for Systems and Robotics, Faculty of Engineering, University of Porto, Portugal

Development of a cascade topology based on IEEE 802.15.4 for a Vertical Transportation System

Mr. David Daza, Universidad de Sevilla, Spain
Mrs. Elena Aguilar, Universidad de Sevilla, Spain
Mr. Ramón G. Carvajal, Universidad de Sevilla, Spain
Mr. Carlos Rubia-Marcos, Universidad de Huelva, Spain

Smart Parking Services based on Wireless Sensor Networks

Dr. Jihoon Yang, Universidad Politecnica de Madrid, Spain
Prof. Jorge Portilla, Universidad Politecnica de Madrid, Spain
Prof. Teresa Riesgo, Universidad Politecnica de Madrid, Spain

Wireless Structural Health Monitoring System based on AutoRegressive Models

Mr. Eduardo Hidalgo, University of Seville, Spain
Mr. Fernando Muñoz, University of Seville, Spain
Mr. Alfonso Guerrero de Mier, University of Seville, Spain
Mr. Ramón Gonzalez, University of Seville, Spain
Mr. Antonio Torralba, University of Seville, Spain
Mr. Rafael Castro, University of Cordoba, Spain
Mr. Rafael Gallego, University of Granada, Spain

SS47 - Compliant Robotics
B-1518, Saturday 27th of October, 16h00

Chair/s: Yasutaka Fujimoto, Naoki Oda

Control of Robotic Joint by using Antagonistic Pair of Twist Drive Actuators

Dr. Takashi Sonoda, Kyushu Institute of Technology, Japan
Prof. Kazuo Ishii, Kyushu Institute of Technology, Japan
Dr. Amir A.F. Nassiraei, Kyushu Institute of Technology, Japan
Prof. Ivan Godler, University of Kitakyushu, Japan

Motion Controller Design of Biped Robot for Human-like Walking with Stretched Knee

Prof. Naoki Oda, Chitose Institute of Science and Technology, Japan
Mr. Osamu Yanada, Chitose Institute of Science and Technology, Japan

High bandwidth attitude control based on musculoskeletal system with biarticular muscles

Prof. Toshiaki Tsuji, Saitama University, Japan
Mr. Tomonori Yokoo, Saitama University, Japan
Prof. Sho Sakaino, Saitama University, Japan

Design of a High-thrust Density Spiral Motor using Finite Element Analysis

Mr. Takahiro Mikami, Department of Electrical and Computer Engineering Yokohama National University, Japan
Prof. Yasutaka Fujimoto, Department of Electrical and Computer Engineering Yokohama National University, Japan

Development of Snake-like Robot Climbing Up Slope in Consideration of Constraint Force

Mr. Ken Tashiro, Tokyo Denki University, Japan
Mr. Syunsuke Nansai, Tokyo Denki University, Japan
Prof. Masami Iwase, Tokyo Denki University, Japan
Prof. Shosiro Hatakeyama, Tokyo Denki University, Japan

TT04 b - RT Simulations and Embedded Applications
B-1708, Saturday 27th of October, 16h00

Chair/s: Marcian Cirstea, Ray Cheung

General-Purpose Reconfigurable Low-Latency Electric Circuit and Drive Solver on FPGA

Dr. Christian Dufour, Opal-RT Technologies, Canada
Mr. Sébastien Cense, Opal-RT Technologies, Canada
Mr. Tarek Ould-Bachir, Ecole Polytechnique de Montréal, Canada
Mr. Luc-André Grégoire, Opal-RT Technologies, Canada
Mr. Jean Bélanger, Opal-RT Technologies, Canada

Controlling Traffic Jams on Urban Roads Modeled in Coloured Petri Net using Genetic Algorithm

Mr. Henrique Dezani, Universidade Estadual de Campinas, Brazil
Prof. Luis Gomes, Universidade Nova de Lisboa, Portugal
Prof. Furio Damiani, Universidade Estadual de Campinas, Brazil
Prof. Norian Marranghello, Universidade Estadual Paulista, Brazil

A Case for I/O Response Benchmarking of Microprocessors

Mr. Goncalo Martins, University of Denver, USA
Mr. Dave Lacey, Xmos, United Kingdom
Mr. Allistair Moses, University of Denver, USA
Mr. Matthew Rutherford, University of Denver, USA
Mr. Kimon Valavanis, University of Denver, USA

Control Area Network Based Quotient Remainder Compression-Algorithm for Automotive Applications

Mrs. Supriya Kelkar, Cummins College of Engineering for Women, India
Dr. Rajkamal , Devi Ahilya Vishwa Vidyalaya, India

Efficient Implementation of EKF-SLAM on a Multi-Core Embedded System

Mr. Bastien Vincke, Univ Paris-Sud, Institut d'Electronique Fondamentale, France
Prof. Abdelhafid Elouardi, Univ Paris-Sud, Institut d'Electronique Fondamentale, France
Prof. Alain Lambert, Ifsttar Im, Livic, France
Prof. Alain Mérigot, Univ Paris-Sud, Institut d'Electronique Fondamentale, France

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Announcement

INDUSTRIAL ELECTRONICS SOCIETY TECHNICAL COMMITTEES MEETINGS DURING IECON 2012

Dear IECON 2012 authors and participants,

This is an invitation from Industrial Electronics Society's Vice President for Technical Activities, professor Kamal Al-Haddad, to all industrial and university researchers who are interested in becoming an active member of one of its 19 Technical Committees (TC). IES Technical Committees, that are chaired and run by IES members and volunteers, are opening the door to enroll new IES members into its various technical activities. These TC participate actively in organising IES conferences, organize special sessions, manage technical tracks, edit Transactions special sections, and also participate in promoting various publications in IES highly reputed Transactions (TIE, TII) and magazine IEM.

If your field of interest is covered by one of the below announced TC, you are welcome to join and participate in the appropriate TC meeting that is more suitable for your career. You are invited to take part of the discussion, and become an active member of the TC of your choice. The IES 19 announced Technical Committees are:

1-Automotive Technology, 2-Building Automation, Control, and Management, 3-Control, Robotics & Mechatronics, 4-Education in Engineering and Industrial Technologies, 5-Electrical Machines, 6-Electronic Systems on Chip, 7-Factory Automation, 8-Human Factor, 9-Industrial Agents, I10-ndustrial Informatics, 11-Motion Control, 12-Nanotechnologies &MEMS, 13-Network-based Control Systems and Applications, 14-Power Electronics, 15-Renewable Energy, 16-Sensors and Actuators, 17-Smart Grid, 18-Standards, 19-Resilience and Security for Industrial Applications (ReSia).

Technical committee's scheduled meetings

26 October 2012, Pavilion A (First Floor) Rooms A-1238 and A-1240

15:40-17:40, TC- Education in Engineering and Industrial Technologies (EEIT), Room A-1238

17:40- 19:40, TC-Smart Grid, Room A-1238,

17:40- 19:40, TC-Power Electronics, Room A-1240,

27 October 2012, Pavilion A (First Floor) Rooms A-1238 and A-1240

8:00-10:00, TC-Electronic Systems on Chip (ESoC), room A-1240

10:00-12:00, TC-Building Automation, Control, and Management (BACM), room A-1238

10:00-12:00, TC-Automotive Technology (AT), room A-1240

17:40-18:40, TC- Nanotechnologies &MEMS, Room A-1238

18:40- 19:40, TC-Industrial Agents, Room A-1240

18:40- 19:40, TC-Electrical Machines, Room A-1238

28 October 2012, Pavilion A (First Floor) Rooms A-1238 and A-1240

08:00-10:00, TC-WIC, Room A-1238

12:30-14:00, TC-Motion Control (MC), Room A-1238

12:30-14:00, TC-Standards (Std), Room A-1240

Le génie pour l'industrie

IECON 2012

38th Annual Conference of the IEEE Industrial Electronics Society

ICELIE 2012

6th International Conference on E-learning in Industrial Electronics

October 25th to 28th, 2012



Welcome Reception
Thursday, October 25th
18:00 — 20:00
ÉTS Main Hall, Pavilion A

Banquet
Friday, October 26th
19:00 — 22:00
Fairmount The Queen Elizabeth,
Grand Salon

Student Banquet
Friday, October 26th
18:00 — 22:00
ÉTS, Bar 100 Génies, Pavilion B

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