



# 2016 IEEE INDUSTRY APPLICATIONS SOCIETY



51<sup>ST</sup>

## ANNUAL MEETING



  
**PORTLAND, OREGON**  
Portland Marriott Downtown Waterfront

**OCTOBER 2-6, 2016**





## Welcome to the 51<sup>ST</sup> IEEE Industry Applications Society Annual Meeting

Over the last half century, IAS Annual meeting has established a long tradition of providing an international forum for practicing engineers, researchers, students and technical experts to present and discuss the latest developments in the application of electrical technology covering fields such as automation, control, electrostatics, mining, metals, and standards for electrical installations. The conference emphasizes professional development, learning, sharing of experiences, and networking with peers. This year's conference promises to be very rewarding with a full complement of tutorials, as well as more than 180 technical paper presentations and a poster session from Student award winners. Please join us for the Welcome Breakfast on Monday morning when we will share some important announcements and include an update on ways you can maximize your valuable time at the conference this week. We will also have a plenary presentation by Dr. Kamiar J. Karimi, Senior Technical Fellow, Boeing. Is presentation will be on "787 Electric Power Systems and Future Trends in More Electric Airplanes"

Again this year IAS Annual meeting will be utilizing a mobile conference application in addition to our traditional printed media. The app will offer you conference information at your fingertips, the ability to download papers, and the opportunity to interact with your peers via social media.

Be sure to check the schedule carefully to ensure that you don't miss a technical learning opportunity or favorite event. Beyond the technical sessions and tutorials, some of the traditional activities during this week's conference include our Sunday Chapters & Membership Department Workshop and a technical tour on Tuesday, this year featuring a visit to Bonneville Dam and generating station in Portland. On Sunday evening, there will be holding a session to guide first time attendees with an overview of our Society and the week's conference events, followed by an opening Reception coupled with our traditional student poster session. The technical program begins on Monday with five new tutorials scheduled throughout the week. Monday also includes the Myron Zucker Student luncheon where you will have the opportunity to meet many of the students attending the conference. Finally, be sure to join us on Wednesday evening at the President's banquet when you can share a final evening with the group while we celebrate and recognize the recipients of this year's IAS awards. As with every annual meeting, the IAS Executive Board and IAS Council will also meet on Wednesday & Thursday to conduct the administrative business of the Society.

The organizing committee of the 51st IAS Annual meeting has worked hard to put this conference together and hope your stay is both pleasant and productive. Again, welcome to beautiful Portland, Oregon!

A handwritten signature in black ink that reads "Tomy Sebastian". The signature is written in a cursive, flowing style.

**Tomy Sebastian**  
General Chair





# Contents

<b>Conference Chair Welcome Letter</b> . . . . .	inside cover
<b>General Information</b> . . . . .	2
<b>Meeting Sponsors &amp; Special Events</b> . . . . .	3
<b>Hotel Floor Plans</b> . . . . .	4
<b>Schedule at a Glance</b> . . . . .	5
<b>Mobile Application</b> . . . . .	13
<b>Committee Meetings</b> . . . . .	14
<b>Keynote</b> . . . . .	15
<b>Technical Sessions</b> . . . . .	16
MONDAY, OCTOBER 3rd . . . . .	16
TUESDAY, OCTOBER 4th . . . . .	21
WEDNESDAY, OCTOBER 5th . . . . .	26
<b>Tutorials</b> . . . . .	31
<b>IEEE-IAS Leadership</b> . . . . .	34
<b>2017 Call for Papers</b> . . . . .	47





## General Meeting Information

All conference events will be held at the Portland Marriott Downtown Waterfront:

▶ 1401 SW Naito Pkwy  
Portland, OR 97201  
Phone: 503-226-7600

### HOUSING

The host hotels for 2016 IAS housing are as follows:

#### **Portland Marriot Downtown Waterfront**

1401 SW Naito Pkwy  
Portland, OR 97201  
Phone: 503-226-7600

#### **Residence Inn by Marriott Portland Downtown RiverPlace**

2115 SW River Pkwy  
Portland, OR 97201  
Phone: 503-552-9500

### INTERNET ACCESS

More information will be available at registration

### REGISTRATION INFORMATION

Registration will be located in Lower Level 1 and will be open the following hours:

■ Sunday	1:00 PM – 7:00 PM
■ Monday	6:30 AM – 7:00 PM
■ Tuesday	7:00 AM – 6:00 PM
■ Wednesday	7:00 AM – 6:00 PM
■ Thursday	7:30 AM – 12:00 PM

### BADGES

Badges should be worn at all official functions of the meeting. If you forget or lose your badge, you may obtain a second badge at Registration.

### POSTERS

Student poster displays will be presented during the Welcome Reception which will be hosted in Salon EF on Sunday evening from 6:30 PM – 9:30 PM. The posters will be then available for viewing starting Monday morning in the Lower Lobby Level Foyer Space until Wednesday afternoon.

### SESSION CHAIRS & PRESENTING AUTHORS

The Authors Breakfast on Monday morning will be in Mt. Hood from 7:00 AM – 8:00 AM, immediately before the Welcome Breakfast. The Authors Breakfasts on Tuesday, Wednesday and Thursday will also be held from 7:00 AM – 8:00 AM in Mt. Hood. These breakfasts are open only for the session chairs and authors who will be presenting that day, to provide authors the opportunity to meet their session moderator and peers.

### CONFERENCE RECORD

The Conference Record for the 2016 IAS Annual Meeting has been made available in the form of a flash drive. To access the content of the Conference Record, plug the flash drive into a USB port on your computer to open the information. Use the index pages to access hyperlinks to all other pages, including indices that list the technical papers scheduled for presentation at the Annual Meeting by title and authors' family name. Clicking on the title of a paper in the indices will open the actual manuscript file.

### NAVIGATING PORTLAND

The hotel is located in downtown Portland which is convenient for dining, shopping and entertaining. For full information about all that Portland has to offer, please visit Travel Portland's website at [www.travelportland.com](http://www.travelportland.com). The hotel's concierge staff will be happy to assist with recommendations and can assist in making dinner reservations.

### COMPANION'S ROOM

The Companion's Room is located in the Hospitality Suite room and is open only to guests of conference attendees. It will be available from 8:00 AM – 5:00 PM Monday through Wednesday.



## Sponsors

The IAS Annual Meeting sincerely thanks the following sponsors for their support:



### Special Events

#### SUNDAY, OCTOBER 2ND

**CMD Chapter's Workshop**  
*(by invitation only)*  
8:00 AM – 5:00 PM  
SALON I

**Guide to the IAS Annual Meeting  
for First-Time Attendees**  
5:30 PM – 6:30 PM  
SALON A

**Welcome Reception &  
Student Poster Session**  
6:30 PM – 9:30 PM  
SALONS E-F

#### MONDAY, OCTOBER 3RD

**Welcome Breakfast**  
7:30 AM – 8:15 AM  
SALON E

**Plenary Session:**  
**Title? TBD**  
8:15 AM – 8:50 AM  
SALON E

**Myron Zucker Student Luncheon –**  
*Open to all students*  
12:30 PM – 2:00 PM  
MT. HOOD

#### TUESDAY, OCTOBER 4TH

**Tour of Bonneville Lock and Dam**  
*\*Separate Fee (pre-registration required)*  
9:00 AM – 4:30 PM  
OFF-SITE

#### WEDNESDAY, OCTOBER 5TH

**IAS Executive Board Meeting**  
8:00 AM – 6:00 PM  
COLUMBIA

**Council Meeting/Workshop Luncheon**  
12:00 PM – 1:30 PM  
MT. HOOD

**President's Reception**  
*(by invitation only)*  
5:30 PM – 7:00 PM  
HAWTHORNE, BELMONT & LAURELHURST

**IEEE IAS Awards & President's Banquet**  
7:00 PM – 9:30 PM  
SALON EF

#### THURSDAY, OCTOBER 6TH

**IAS Executive Board Meeting**  
8:00 AM – 6:00 PM  
COLUMBIA

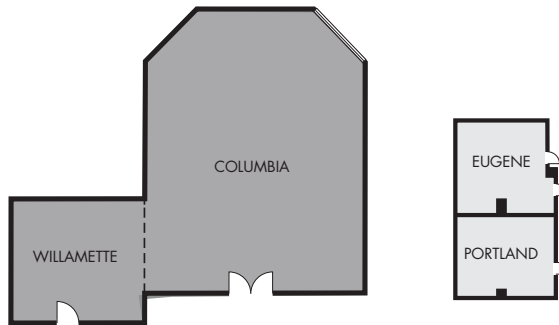


# IAS

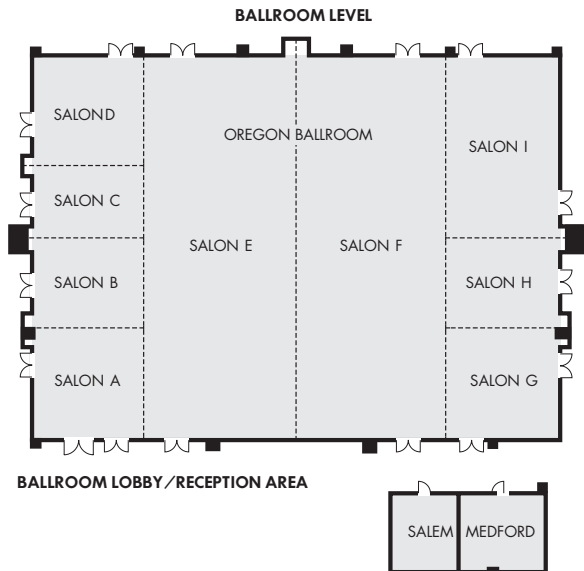
ANNUAL MEETING 2016

## Hotel Floor Plan

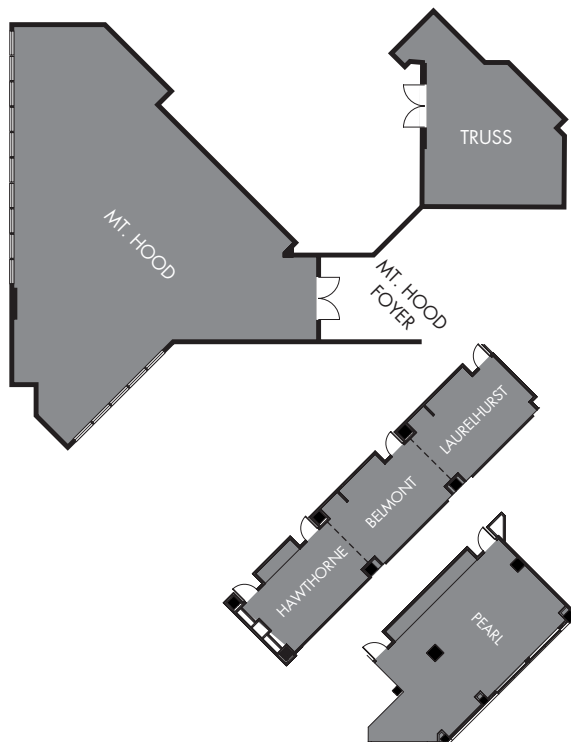
### Main Lobby



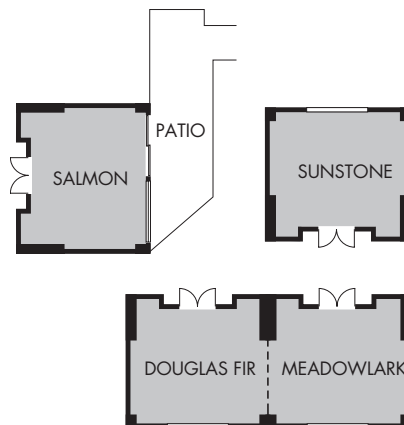
### Lower Level







### 2nd Floor



### 3rd Floor



-  Main Lobby
-  Lower Level
-  2nd Floor
-  3rd Floor



ANNUAL MEETING 2016

# Schedule at a Glance

## SUNDAY, OCTOBER 2nd

	Registration	Columbia	Salon D	Salon A	Salons G-H	Salon I	Salons E-F
7:00 AM	Registration						
7:30 AM							
8:00 AM						Chapter Workshop	
8:30 AM							
9:00 AM							
9:30 AM							
10:00 AM							
10:30 AM							
11:00 AM							
11:30 AM							
12:00 PM							
12:30 PM							
1:00 PM				*Tech Standards Coordinating Committee			
1:30 PM							
2:00 PM			PSP Generator Grounding Working Group Meeting	*TBCC First Principles (Base Book)	*PSP Commun. 1	TUTORIAL: Selection, Application of EMTP to Industrial and Distribution Systems	
2:30 PM				TBCC Reliability Working Group			
3:00 PM			TBCC Protection & Coordination WG	TBCC MOS Working Group	TBCC Emergency Standby Power Systems WG		
3:30 PM							
4:00 PM							
4:30 PM							
5:00 PM			TBCC Power Systems Analysis WB				
5:30 PM				*Guide to the IAS Annual Meeting			
6:00 PM							
6:30 PM							
7:00 PM						Opening Reception/ Student Poster Session	
7:30 PM							
8:00 PM							
8:30 PM							
9:00 PM							
9:30 PM							
10:00 PM							
10:30 PM							
11:00 PM							
11:30 PM							

SCHEDULE AT A GLANCE

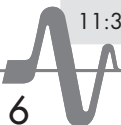


# Schedule at a Glance

## MONDAY, OCTOBER 3rd

SCHEDULE AT A GLANCE

	Registration	Hospitality Suite	Mt. Hood	Salon E	Columbia	Eugene	Belmont & Laurelhurst		
7:00AM	Registration	Spouse's Room	Author's Breakfast	Welcome Breakfast					
7:30AM									
8:00AM						PLENARY SESSION			
8:30 AM									
9:00AM							PSE Program Planning Subcommittee Meeting	Tech Standards Coordinating Comm Mtg. Part I	
9:30 AM							Healthcare and Education Subcommittee		
10:00AM							Ports and Harbors Subcommittee	TBCC 1st Principles WB, Part II	
10:30AM					COFFEE BREAK		PSE Reliability		
11:00AM							PSE Power Systems Analysis	TBCC Grounding Working Group	
11:30 AM									
12:00PM									
12:30 PM					Zucker Awards Luncheon				
1:00PM									
1:30 PM									
2:00PM							PSE Emergency Standby	PSP Low Voltage Subcommittee	
2:30PM							PSE Safety Operations Subcommittee		
3:00PM							PSE Power Systems Design	PSP Surge Protector	
3:30 PM					COFFEE BREAK		PSE Grounding		
4:00PM							PSE Power Quality Subcommittee	PSP Medium Voltage	
4:30 PM							PSE Forensics Working Group	PSP Main Committee Meeting	
5:00PM					PSE Main Committee Meeting				
5:30PM									
6:00PM					Energy Systems Committee Meeting	IACC Department Meeting	Metals Committee Meeting		
6:30 PM									
7:00PM									
7:30 PM									
8:00PM			CMD Dinner						
8:30PM									
9:00PM									
9:30 PM									
10:00PM									
10:30PM									
11:00PM									
11:30PM									





# Schedule at a Glance

## MONDAY, OCTOBER 3rd

Pearl	Salon A	Salon B	Salon C	Salon D	Salon G	Salon H	Salon I
<b>PSP Communications Working Group #2</b>	<b>STUDEN TECHNICAL SESSION #1 (6 papers)</b>	<b>STUDENT TECHNICAL SESSION #2</b>	<b>TECHNICAL SESSION #3 IACC – Session #1</b>		<b>TECHNICAL SESSION #4 ILDC Session 1 – Special Session</b>	<b>TECHNICAL SESSION #5 Metals #1</b>	
<b>TBCC Power Systems Design Working Group</b>							
<b>(Mohla) I&amp;CPS Meetings Comm. Meeting</b>							
	<b>STUDENT TECHNICAL SESSION #6</b>	<b>STUDENT TECHNICAL SESSION #7</b>	<b>TECHNICAL SESSION #8 IACC Session #2</b>	<b>TECHNICAL SESSION #9 IACC Session #8</b>	<b>TECHNICAL SESSION #10 ILDC Session #1</b>	<b>TECHNICAL SESSION #11 Metals 2</b>	
<b>ILD Committee Meeting</b>							

SCHEDULE AT A GLANCE



# Schedule at a Glance

## TUESDAY, OCTOBER 4th

SCHEDULE AT A GLANCE

	Registration	Hospitality Suite	Mt. Hood	Eugene	Pearl	
7:00AM	Registration	Hospitality Suite	Author's Breakfast			
7:30AM						
8:00AM					Pubs/Transactions	
8:30 AM						
9:00AM						
9:30 AM					Pubs/Magazine	
10:00AM					COFFEE BREAK	Codes and Standards Meeting
10:30AM						
11:00AM					Scholar One User Group	
11:30 AM						I&CPS Technical Program Committee
12:00PM						
12:30 PM			2017 Annual Meeting Committee Chairs			
1:00PM						
1:30 PM						
2:00PM						
2:30PM						
3:00PM	Registration	Spouse's Room				
3:30 PM			COFFEE BREAK			
4:00PM						
4:30 PM						
5:00PM						
5:30PM						
6:00PM						
6:30 PM						I&CPS Department Committee Meeting
7:00PM						
7:30 PM						
8:00PM						
8:30PM						
9:00PM						
9:30 PM						
10:00PM						
10:30PM						
11:00PM						
11:30PM						

# Schedule at a Glance

TUESDAY, OCTOBER 4th

Salon A	Salon B	Salon C	Salon D	Salon G	Salon H	Salon I
TECHNICAL SESSION #12 (7 papers) IACC Session #3	TECHNICAL SESSION #13 PSEC Session #1	TECHNICAL SESSION #14 PSPC Session	TECHNICAL SESSION #15 ESC Session #1	TECHNICAL SESSION #16 Mining 1	TECHNICAL SESSION #17 ILDC Session Session #2	TECHNICAL SESSION #18 ADD Orphaned Metals session here
TECHNICAL SESSION #19 (7 papers) IACC Session #4	TECHNICAL SESSION #20 PSEC Session #2		TECHNICAL SESSION #21 ESC Session #2	TECHNICAL SESSION #22 Mining 2		
Mining Committee Meeting	MSDAD Department Meeting					

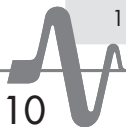
SCHEDULE AT A GLANCE

# Schedule at a Glance

## WEDNESDAY, OCTOBER 5th

SCHEDULE AT A GLANCE

	Registration	Hospitality Suite	Mt. Hood	Pearl	Salon A	Salon B	
7:00AM	Registration	Hospitality Suite	Author's Breakfast				
7:30AM							
8:00AM					TUTORIAL IEEE STANDARD 81 "Guide for Measuring Earth Resistivity, Ground Impedance, and Earth Surface Potentials of a Grounding System"	TECHNICAL SESSION #23 (7 papers) IACC Session #5	TECHNICAL SESSION #24 PSEC Session #3
8:30 AM							
9:00AM							
9:30 AM							
10:00AM			COFFEE BREAK				
10:30AM							
11:00AM							
11:30 AM							
12:00PM							
12:30 PM		Council Lunch					
1:00PM	Registration	Spouse's Room					
1:30 PM							
2:00PM					TECHNICAL SESSION #28 (7 papers) IACC Session #6	TECHNICAL SESSION #29 PSEC Session #4	
2:30PM							
3:00PM			COFFEE BREAK				
3:30 PM							
4:00PM							
4:30 PM							
5:00PM							
5:30PM							
6:00PM							
6:30 PM							
7:00PM							
7:30 PM							
8:00PM							
8:30PM							
9:00PM							
9:30 PM							
10:00PM							
10:30PM							
11:00PM							
11:30PM							



# Schedule at a Glance

## WEDNESDAY, OCTOBER 5th

Salon C	Salon D	Salon G	Eastside Rooms (Hawthorne, Belmont & Laurelhurst)	Salons E-F	Columbia
TECHNICAL SESSION #25 <b>PSEC Session #6</b>	TECHNICAL SESSION #26 <b>ESC Session #3</b>	TECHNICAL SESSION #27 <b>Mining 3</b>			<b>Executive Board Meeting</b>
TECHNICAL SESSION #30 <b>PSEC #5</b>	TECHNICAL SESSION #31 <b>ESC Session #4</b>	POSSIBLE SESSION #32			
			<b>President's Reception</b>		
				<b>President's Banquet</b>	

SCHEDULE AT A GLANCE



# Schedule at a Glance

## THURSDAY, OCTOBER 6th

SCHEDULE AT A GLANCE

	Registration	Mt. Hood	Columbia	Salon A	Salon B	Salon C	Salon D
7:00AM	Registration	Author's Breakfast	Executive Board Meeting	TUTORIAL (T3)	TECHNICAL SESSION #32 IACC Session #7 - if not moved to Wednesday	TECHNICAL SESSION #44	TUTORIAL (T4)
7:30AM							
8:00AM							
8:30 AM							
9:00AM							
9:30 AM							
10:00AM							
10:30AM							
11:00AM							
11:30 AM							
12:00PM							
12:30 PM							
1:00PM							TUTORIAL (T5)
1:30 PM							
2:00PM							
2:30PM							
3:00PM							
3:30 PM							
4:00PM							
4:30 PM							
5:00PM							
5:30PM							



# IAS ANNUAL MEETING 2016

## Mobile Application (iOS and Android)



MOBILE APPLICATION

The **IAS Agenda Mobile Application** was developed for the IEEE Industry Applications Society (IEEE IAS). Initial purpose: the 2016 IAS Agenda Meeting. Get "**IAS Agenda**" on Apple "**App Store**" & Google "**Play Store**". Sign in using only your conference registration e-mail.

The user, signed in under his conference registered e-mail can:

- **Search** or simply navigate through an extended **side-menu** to access all necessary Conference Information through their mobile device.
- **Reach the Conference administration**, effortlessly.
- Access the **full Conference program** (Technical, Tutorials & Workshops, Meetings, Special Evens and Schedule at a Glance).
- View other **registered participants shared details**.
- Access **hotel floor plans**.
- Create, edit and delete **personal notes**.  
Disclaimer: Notes are stored locally, in user's device, for secured privacy.
- User can access an exclusive **mobile City Guide** with information on Downtown, Restaurants, Sights and Shopping places around the Conference Venue, even with Google Street View enabled.
- Navigate to key **Ground Transportation** locations intended to reach the Conference Venue.
- Receive **real-time Notifications** on their device.
- Visit all relative **Social Media pages**.
- Help us improve using **feedback** feature!



## ANNUAL MEETING 2016

# Committee Meetings

Department/Committee	Start Time	End Time	Location
<b>SATURDAY, OCTOBER 1, 2016</b>			
CMD Department Meeting	8:00 AM	5:00 PM	TBA
<b>SUNDAY, OCTOBER 2, 2016</b>			
CMD Chapter Workshop	8:00 AM	5:00 PM	Salon I
Technical Standards Coord Main Meeting	1:00 PM	2:00 PM	Salon D
PSP Generator Grounding WG	2:00 PM	4:00 PM	Columbia
PSP Communications WG 1	2:00 PM	3:30 PM	Salon A
TBCC First Principles (Base Book)	2:00 PM	3:00 PM	Salon D
TBCC Reliability WG	3:00 PM	4:00 PM	Salon D
TBCC Protection and Coordination	4:00 PM	5:00 PM	Columbia
TBCC MOS Working Group	4:00 PM	5:00 PM	Salon D
TBCC Emergency Standby	4:00 PM	5:00 PM	Salon A
TBCC Power System Analysis	5:00 PM	6:00 PM	Salon D
Guide for 1st time attendees	5:00 PM	6:00 PM	Salon A
Welcome Reception/Poster Session	6:30 PM	9:00 PM	Salons E-F
<b>MONDAY, OCTOBER 3, 2016</b>			
Tech Standards Coordinating	9:00 AM	10:00 AM	Eugene
PSE Program Planning Subcommittee Meeting	9:00 AM	9:30 AM	Columbia
PSP Communications WG #2	9:00 AM	11:00 AM	Pearl
Healthcare and Education Subcommittee	9:30 AM	10:00 AM	Columbia
Ports and Harbors Subcommittee	10:00 AM	10:30 AM	Columbia
TBCC 1st Principles WG Part II	10:00 AM	11:00 AM	Eugene
PSE Reliability	10:30 AM	11:00 AM	Columbia
TBCC Power Systems Design WG	11:00 AM	12:00 PM	Pearl
TBCC Grounding WG	11:00 AM	12:00 PM	Eugene
PSE Power Systems Analysis	11:00 AM	12:00 PM	Columbia
I&CPS Meetings Committee	12:00 PM	2:00 PM	Pearl
PSE Emergency Standby	2:00 PM	2:30 PM	Columbia
PSP Low Voltage Subcommittee	2:00 PM	3:00 PM	Eugene
PSE Safety, Operations Subcommittee	2:30 PM	3:00 PM	Columbia
PSP Surge Protection Subcommittee	3:00 PM	3:30 PM	Eugene
PSE Power Systems Design	3:00 PM	3:30 PM	Columbia
PSE Grounding Subcommittee	3:30 PM	4:00 PM	Columbia
PSP Medium Voltage	4:00 PM	4:30 PM	Eugene
PSE Power Quality SCM	4:00 PM	4:30 PM	Columbia
PSE Forensics Working Group	4:30 PM	5:00 PM	Columbia
PSP Main Committee Meeting	4:30 PM	5:30 PM	Eugene
PSE Main Committee Meeting	5:00 PM	6:00 PM	Columbia
Energy Systems Committee Meeting	6:00 PM	7:00 PM	Columbia
IACC Department Meeting	6:00 PM	8:00 PM	Eugene
ILDC Committee Meeting	6:00 PM	7:00 PM	Pearl
Metals Committee Meeting	6:00 PM	7:30 PM	Belmont & Laurelhurst
<b>TUESDAY, OCTOBER 4, 2016</b>			
Pubs/Transactions	8:00 AM	9:00 AM	Eugene
Pubs/Magazine	9:00 AM	10:00 AM	Eugene
Scholar One User Group	10:30 AM	12:00 PM	Eugene
I&CPS Technical Program Committee	11:30 AM	2:00 PM	Pearl
2017 Annual Meeting Committee Chairs	12:30 PM	1:30 PM	Eugene
Codes and Standards Committee	9:30 PM	10:30 PM	Pearl
Mining Committee Meeting	6:00 PM	7:00 PM	Salon A
I&CPS Department Committee Meeting	6:00 PM	8:00 PM	Pearl
MSDAD Department Meeting	6:00 PM	7:00 PM	Salon B



## Keynote

### 787 Electric Power Systems and Future Trends in More Electric Airplanes

DR. KAMIAR J. KARIMI  
*Senior Technical Fellow, Boeing*

This keynote focuses on More Electric Aircraft (MEA). First, aircraft energy systems are reviewed. All power sources in traditional aircraft are introduced and corresponding power consumers are presented. Then, the MEA concept is detailed and its advantages are discussed. A road to get more electrified is emphasized for Boeing 787 Dreamliner. Advanced technology contributions to fuel efficiency and the role of power electronics in MEA are exposed. Finally, a thorough discussion on future trends in MEA will be held. It goes from load electrification to propulsion system through microgrids and interdisciplinary technologies.



Kamiar Karimi received his B.S., Master of Engineering, and Ph.D. degrees in Electrical Engineering from Cornell University in 1981, 1982, and 1986 respectively. From 1986-89 he worked for Landis and Gyr Systems in San Jose, CA where he was in charge of performing research in the area of Energy Management Systems.

Since 1989 he has been with The Boeing Company. He has led system analysis and modeling for the Space Station Power System, and has been involved in design, analysis, and validation of various airplane electric power systems including 747/767/777, and 787. He is one of the architects of the 787 More-Electric systems and is responsible for developing many of the new technologies for 787 electrical power system. Currently he is leading multiple research projects related to aircraft architecture optimization, power conversion technology, and simulation of large complex dynamical systems. He is a Senior Technical Fellow at Boeing.



**IAS**  
ANNUAL MEETING 2016  
**Technical Program**

Monday, October 3, 2016 9:00 AM – 10:30 AM

**SESSION #1-a**  
**Student Technical Session**

**CMD DEPARTMENT**

**Session Chairs:** J. Marcos Alonso, Lesley Ann Arakkal  
**Session Organizers:** Peter Magyar, Aristotelis Farmakis  
**Room:** Salon A

9:00 AM  
**Control Management of a Propulsion System with Supercapacitors for Electric and Hybrid Vehicles**  
Waled Mohamed, *Sapienza University of Rome, Italy*

9:30 AM  
**Heterogeneous Platform for IEDs Connection on a Fault Location Engine of Distribution Systems with DG Using DSSim-PC**  
David Celeita, *Universidad de los Andes, Colombia*

10:00 AM  
**Use of Infrared Thermography (IRT), as a Non-destructive Testing Method for Fault Diagnosis and Prognosis on Sailing Boats and Safety Protocols at Sea**  
Emmanouil Bafounis-Kottas, *Democritus University of Thrace, Xanthi, Greece*

Monday, October 3, 2016 11:30 AM – 12:30 PM

**SESSION #1-b**  
**Student Technical Session**

**CMD DEPARTMENT**

**Session Chairs:** David Durocher, Megha Tak  
**Session Organizers:** Peter Magyar, Aristotelis Farmakis  
**Room:** Salon A

11:00 AM  
**Energy Storage System for Wind Turbines**  
Ryan Meng, Mathieu Malone, Ryan McSheffery, Sarah Buck, *University of New Brunswick, Canada*

11:30 AM  
**Novel MPPT Based on Board Solar Charging System for an Electric Scooter**  
Jyothis Joseph, Mehanath KV, Sachin Ranjith, Shejin George, Akash Manoj, Anirudh Jithendran, *Vimal Jyothis Engineering College, India*

12:00 PM  
**A Non-Intrusive Air-Gap Torque Method for Efficiency Estimation of Induction Machines**  
Anil Kumar Mathur, Sandeep Kumar, Sudheer Kumar, *Indian Institute of Technology Mandi, India*

Monday, October 3, 2016 9:00 AM – 10:30 PM

**SESSION #2-a**  
**Student Technical Session**

**CMD DEPARTMENT**

**Session Chairs:** Chiara Boccaletti, Aristotelis Farmakis  
**Session Organizer:** Peter Magyar, Aristotelis Farmakis  
**Room:** Salon B

9:00 AM  
**PMU Based Fault Location Method for Distribution Systems**  
Aneesh Rajeev, *Amrita School of Engineering, Amritapuri Campus, Kollam, Kerala, India*

9:30 AM  
**Theoretical Study and Experimental Analysis of a Thermal-Photovoltaic Panel**  
Cristina Moscatiello, *Sapienza University of Rome, Italy*

10:00 AM  
**Theoretical Study and Experimental Analysis of the Maximum Power Point Tracking for Wind Turbine**  
Michelle G Gomez De Franco, *Sapienza University of Rome, Italy*

*The list of contributors on the papers submitted for this Conference was provided by the authors. IEEE is not responsible for missing or misspelled names, disambiguation of authors with similar names, or the sequence in which the names are listed.*

Monday, October 3, 2016

11:00 AM – 12:30 PM

## Session #2-b Student Technical Session

### CMD DEPARTMENT

**Session Chairs:** Olive Ray, Usman Munawar

**Session Organizers:** Peter Magyar, Aristotelis Farmakis

**Room:** Salon B

11:00 AM

#### Implementation of Structured Light Algorithm for Detecting Fissures and Cracks Through Image Processing in the ODDROID Platform

Lizeth Stephany Roldan Jimenez, Pontificia Universidad Javeriana, Colombia

11:30 AM

#### Co-simulation Strategy of PV Hosting Capacity Applying a Stochastic Analysis

Yessica Andrea Africano Rodriguez, Universidad de los Andes, Colombia

12:00 PM

#### Bionic Arm Controlled EMG Signal

Priyadarshan CV, Abhilash A, Akash T John, Nikhil K George, Pranav Thomas, Vimal Jyothis Engineering College, India

Monday, October 3, 2016

9:00 AM – 12:30 PM

## Session #3 IACC Session #1

### INDUSTRIAL AUTOMATION AND CONTROL COMMITTEE

**Session Chair:** Suryanarayana Doolla

**Session Organizer:** Suryanarayana Doolla

**Room:** Salon C

9:00 AM | 2016-IACC-0802

#### Nonlinear Adaptive Backstepping Controller Design for Controlling Bidirectional Power Flow of BESSs in DC Microgrids

Roy, Tushar Kanti; Mahmud, Md Apel; Oo, Amanullah M. T.; Haque, Enamul; Mendis, Nishad; Muttaqi, Kashem

9:30 AM | 2016-IACC-0809

#### Analysis of Frequency Transients in Isolated Microgrids

Soni, Nimish; Doolla, Suryanarayana; Chandorkar, Mukul C

10:00 AM | 2016-IACC-0807

#### Designing an Intelligent Low Power Residential PV-Based Microgrid

Babakmehr, Mohammad; Harirchi, Farnaz; Alsaleem, Abdulhakeem; Bubshait, Abdullah; Simoes, Marcelo

11:00 AM | 2016-IACC-0797

#### Design and Implementation of CCNY DC Microgrid Testbed

Salal, Mahmoud; Esa, Yusef; Mhandi, Yassine; Brandauer, Werner; Mohamed, Ahmed

11:30 AM | 2016-IACC-0798

#### Decentralized Voltage Stability Monitoring and Control in the Smart Grid using Distributed Computing Architecture

Lee, Hyojong; Niddodi, Shwetha; Srivastava, Anurag; Bakken, David

12:00 PM | 2016-IACC-0803

#### Decentralized State Estimation and Remedial Control Action for Minimum Wind Curtailment Using Distributed Computing Platform

Srivastava, Anurag; Liu, Ren; Askerman, Alexander; Bakken, David; Panciatici, Patrick

Monday, October 3, 2016

9:00 AM – 11:30 PM

## Session #4 ILDC – Special Session on Networking

### INDUSTRIAL LIGHTING AND DISPLAYS

**Session Chair:** Marcos Alonso, University of Oviedo, Spain

**Session Organizer:** Georges Zissis, Toulouse 3 University, France

**Room:** Salon G

9:00 AM

#### Light and Matter Research Group, LAPLACE Laboratory at Toulouse 3 University, France

**Speaker:** Georges Zissis

9:30 AM

#### Research on Solid-State Lighting Driver Systems at NCKU, Taiwan

**Speaker:** Ray-Lee Lin

10:00 AM

#### GEDRE – Intelligence for Lighting, Federal University of Santa Maria, Brazil

**Speaker:** Marco A. Dalla Costa

11:00 AM

#### Efficient Energy Conversion and Lighting Group, University of Oviedo, Spain

**Speaker:** Marcos Alonso

Monday, October 3, 2016

9:00 AM – 12:30 PM

## Session #5 Metals Industry Processes, Power Quality, Power Distribution

### METALS

**Session Chair:** Juan M. Lopera, *University of Oviedo*  
**Session Organizer:** Braz Cardoso Filho, *Universidade Federal de Minas Gerais*  
**Room:** Salon H

9:00 AM | 2016-METC-0636

**Validation and Reception of Electric Arc Furnace Transformers**  
Cano-Plata, Eduardo; Soto, Oscar; Ustariz-Farfan, A.J.

9:30 AM | 2016-METC-0637

**Experimental Results of a Thyristor Switched Series Reactor for Electric Arc Furnaces**  
Pires, Igor; Machado, Alysson; Murta, Marcelo; Cardoso, Braz

10:00 AM | 2016-METC-0638

**Harmonics and Interharmonics Analysis of Electrical Arc Furnaces Based on Spectral Model Optimization with High Resolution Windowing**  
Vatankulu, Yunus; Senturk, Zekeriya; Salor, Ozgul

11:00 AM | 2016-METC-0639

**Illumination Based Flickermeter Designed for Flicker Analysis of Electric Arc Furnace Plants**  
Turkuzan, Mehmet; Salor, Ozgul

11:30 AM | 2016-METC-0640

**Sizing Reactive Compensation for a Steel Plant to Support a New Descaler with Large Motors**  
Dionise, Thomas; Morello, Sam

12:00 PM | 2016-METC-0641

**Overcurrent Protection Response of a Hot Rolling Mill Filtering System: Analysis of the Process Conditions**  
Alonso Orcajo, Gonzalo Arturo; Ardura G., Pablo; Rodríguez D., Josué; Cano, Jose M.; G. Nornliella, Joaquín; Llera T., Rocío; Cifrián R., Diego



Monday, October 3, 2016

2:00 PM – 3:30 PM

## Session #6-a Student Technical Session

### CMD DEPARTMENT

**Session Chairs:** Tomy Sebastian and Galini Kondyli  
**Session Organizers:** Peter Magyar, Aristotelis Farmakis  
**Room:** Salon A

2:00 PM

**Research on Novel Primary Wound-Field Flux-Switching Linear Motors**

Jin Yi, *Nanjing University of Aeronautics and Astronautics, China*

02:30 PM

**Anti-lock and Regenerative Braking Control of SRM for Electric Vehicle**

Grace Firsta Lukman, *Kyungsu University, Republic of Korea*

03:00 PM

**Sensorless Speed Comparison for Vector Controlled Induction Motor Current Regulation Strategies**

Peter William Knight, *Royal Melbourne Institute of Technology, Australia*

Monday, October 3, 2016

4:00 PM – 6:00 PM

## Session #6-b Student Technical Session

### CMD DEPARTMENT

**Session Chairs:** Georges Zissis and Athanasios Karlis  
**Session Organizers:** Peter Magyar, Aristotelis Farmakis  
**Room:** Salon A

4:00 PM

**Fault Diagnosis Technology of Direct-Driven Wind Turbine with Permanent Magnet Machine**

Jun Hang, *Southeast University, China*

4:30 PM

**Integrated Converters: Synthesis, Characterization, and Application to DC Nano Grid**

Olive Ray, *Indian Institute of Technology Kanpur, India*

5:00 PM

**Soft-Switching Current-Fed Power Converters for Low Voltage High Current Applications**

Pan Xuewei, *National University of Singapore, Singapore*

5:30 PM

**Design and Analysis of Novel Segmental Rotor Type Switched Reluctance Motors**

Zhenyao Xu, *Kyungsu University, Korea*

Monday, October 3, 2016

2:00 PM – 3:30 PM

## Session #7-a Student Technical Session

### CMD DEPARTMENT

**Session Chairs:** Akshay Kumar Rathore and Sumit Chhabria

**Session Organizers:** Peter Magyar, Aristotelis Farmakis

**Room:** Salon B

2:00 PM

#### Gas Trolley With Gas Leakage Detection & Automatically Booking System

Robin Thomas, Jintu Vincent, Jithin Vidya Ajith, *Vimal Jyothis Engineering College, India*

2:30 PM

#### Automated Parking System using Programmable Logic Controller

Pranav Vora, Minal Kothari, Heli Bhatt, *Pandit Deendayal Petroleum University, India*

3:00 PM

#### Student Robotics Demonstration

Manel Rebhi, *Tunisia*; Syed Muhammad Rizwan, *Pakistan*; Abhijeetsinh Sodha, *India*

Monday, October 3, 2016

4:00 PM – 6:00 PM

## Session #7-b Student Technical Session

### CMD DEPARTMENT

**Session Chairs:** Ines Abdennaji and Christina-Panagiota Malliou

**Session Organizers:** Peter Magyar, Aristotelis Farmakis

**Room:** Salon B

4:00 PM

#### Humanitarian Project Contest Session

4:30 PM

#### Implementation of Pondok Terang Renewable Energy & IoT Technology Applications to Provide Sustainability of Electricity Power

Amand Julia Isa, Dewi Mariam, Masriza Kurniawan, M. Ibnu Muharrom, *Indonesia*

5:00 PM

#### Electrical Installations in Extreme Poverty Areas: Pachacutec-Ventanilla

Paulo Steven Hanco Chuco, Julio Flavio Yataco Vivas, Richard Hipolito Herrera Estrada, *Peru*

5:30 PM

#### Solar Safe Water Project for Schools

Shahid Zulfiqar Muhamamd, Usman Munawar, *Pakistan*

Monday, October 3, 2016

2:00 PM – 6:00 PM

## Session #8 IACC #2

### INDUSTRIAL AUTOMATION AND CONTROL

**Session Chair:** Fei Gao

**Session Organizer:** Fei Gao

**Room:** Salon C

2:00 PM | 2016-IACC-0814

#### Differential Flatness Based Speed/Torque Control with State-Observers of Permanent Magnet Synchronous Motor Drives

Thounthong, Phatiphat; Sikkabut, Suwat; Poonnoy, Nitchamon; Mungporn, Pongsiri; Yodwong, Burin; Kumam, Poom; Bizon, Nicu; Nahidmobarakeh, Babak; Pierfederici, Serge

2:30 PM | 2016-IACC-0813

#### Evaluation and Fault Tolerant Control of a Floating Interleaved Boost Converter for Fuel Cell Systems

Huangfu, yigeng; Zhuo, Shengrong; Chen, Fuxi; Pang, Shengzhao

3:00 PM | 2016-IACC-0790

#### Degradation Prediction of PEM Fuel Cell Stack Based on Multi-Physical Aging Model with Particle Filter Approach

Zhou, Daming; Wu, Yiming; Gao, Fei; Breaz, Elena; Ravey, Alexandre; Miraoui, Abdellatif

3:30 PM | 2016-IACC-0769

#### Bidirectional Wireless Power Transfer Topology Using Current-Fed Half Bridge CLC Transmitter LC Receiver Configuration for Medium Power Applications

Rathore, Akshay; Samanta, Suvendu

4:30 PM | 2016-IACC-0783

#### Add-on Module of Active Disturbance Rejection for Set-Point Tracking of Motion Control Systems

Xue, Wenchao; Madonski, rafal; Gao, Zhiqiang; Yi, Huang; Lakomy, Krzysztof

5:00 PM | 2016-IACC-0779

#### Steady-State Performance Assessment of Different Compensation Topologies in Two-way IWPT System for EV Ancillary Services

Mohamed, Ahmed; Berzoy, Alberto; Nogueira de Almeida, Felipe Giannini; Mohammed, Osama

5:30 PM | 2016-IACC-0780

#### Pareto Optimization of Circular Power Pads for Contactless Electric Vehicle Battery Charger

Moghaddami, Masood; Anzalchi, Arash; Moghadasi, Amirhasan; Sarwat, Arif

Monday, October 3, 2016

2:00 PM – 6:00 PM

## Session #9 IACC #8

### INDUSTRIAL AUTOMATION AND CONTROL COMMITTEE

**Session Chair:** Saleh Saleh  
**Session Organizer:** Saleh Saleh  
**Room:** Salon D

2:00 PM | 2016-IACC-0850

#### Reduced Order State Observer Based Feedback Control Methodologies for Doubly Fed Induction Machine

Bhattarai, Rojan; Gurung, Niroj; Kamalasadana, Sukumar

2:30 PM | 2016-IACC-0784

#### Characteristics Analysis and Comparison of Conventional and Segmental Rotor Type 12/8 Switched Reluctance Motors

Xu, Zhenyao; Kim, Myeong-Ji; Lee, Dong Hee; Ahn, Jin-Woo

3:00 PM | 2016-IACC-0766

#### A Novel Technique for Detection and Analysis of Hunting in Line-Start IPM Motors Using Stator Current Signature.

Rabbi, S. F.; Little, M.; Rahman, Aziz

4:00 PM | 2016-IACC-0793

#### Inter-Turn Short-Circuit Fault Model for Magnetically Coupled Circuits: A General Study

Berzoy, Alberto; Mohamed, Ahmed; Mohammed, Osama

4:30 PM | 2016-IACC-0788

#### Demodulation Approach for Slowly Sampled Sensorless Field Oriented Control Systems Enabling Multiple Frequency Injections

roetzer, marco; Vollmer, Ulrich; Kennel, Ralph

5:00 PM | 2016-IACC-0806

#### Analysis and Performance Evaluation of Axial Flux Permanent Magnet Motors

Dwivedi, Ankita; Singh, Santosh; Srivastava, Rakesh

5:30 PM | 2016-IACC-0811

#### Multiple-Vector-Based Predictive Direct Current Control for a Wound Rotor Synchronous Machine Drive

Yang, Nanfang; Nahid-Mobarakeh, Babak; Martin, Jean Philippe; Corne, Adrien

Monday, October 3, 2016

2:00 PM – 6:00 PM

## Session #10 Lighting Applications and Displays

### INDUSTRIAL LIGHTING AND DISPLAYS

**Session Chairs:** Hiroshi Unno, *Kanagawa Institute of Technology, Japan*; Mitsuru Nakata, *NHK Science & Technology, Japan*  
**Session Organizer:** Kazutake Uehira, *Kanagawa Institute of Technology, Japan*  
**Room:** Salon G

2:00 PM | 2016-ILDC-0626

#### High Performance Oxide Thin-film Transistor for Large-screen, High-resolution Organic Light-emitting Diode Display

Nakata, Mitsuru; Tsuji, Hiroshi; Fujisaki, Yoshihide; Nakajima, Yoshiki; Takei, Tatsuya; Yamamoto, Toshihiro

2:30 PM | 2016-ILDC-0627

#### Display Technique for Embedding Information in Real Object Images Using Temporally and Spatially Luminance-Modulated Light

Unno, Hiroshi; Uehira, Kazutake

3:00 PM | 2016-ILDC-0607

#### Acoustic Resonance Detection Using Statistical Methods of Voltage Envelope Characterization in Metal Halide Lamps

Lei, Fang; DUPUIS, Pascal; Durrieu, Olivier; Zissis, Georges; Maussion, Pascal

4:00 PM | 2016-ILDC-0613

#### Design Space for LED Systems Considering Photoelectrothermal Aspects

Chies, Leandro; Melo, Maicol; Vizzotto, William; Spannemberg, Rudimar; Bender, Vitor; Dalla Costa, Marco

4:30 PM | 2016-ILDC-0615

#### Ageing Characterization of Colorimetric And Photometric Properties of Commercial LED Lamps

Silalahi, Zivion; DUPUIS, Pascal; Sinisuka, Ngapuli; Massol, Laurent; Zissis, Georges

5:00 PM | 2016-ILDC-0614

#### Experimental Evaluation of Current Waveform on OLED Photometric Performance

Bender, Vitor; Mendes, Fernanda; Barth, Nórton; Pinto, Rafael; Tiago Bandeira, Marchesan; Alonso, J Marcos

5:30 PM | 2016-ILDC-0610

#### Performance Changes of Energy Saving Lamps Under Lumen Maintenance and Switching Stress Test

Dupuis, Pascal; Silalahi, Zivion; Svensson, Ingemar; Brundin, Johannes; Sinisuka, Ngapuli; Zissis, Georges

Monday, October 3, 2016

2:00 PM – 6:00 PM

## Session #11

### Metals Properties and Applications, Thermal Issues, Measurements & Gauging

#### METALS

**Session Chair:** Braz Cardoso Filho, *Universidade Federal de Minas Gerais*

**Session Organizer:** Braz Cardoso Filho, *Universidade Federal de Minas Gerais*

**Room:** Salon H

2:00 PM | 2016-METC-0642

#### Automatic Gauge Control Under Laterally Asymmetric Rolling Conditions Combined with Feedforward

Ms. Katharina Prinz

2:30 PM | 2016-METC-0643

#### Use of Advanced Control with Virtual Rolling to Improve the Control of the Threading of the Tandem Hot Metal Strip Mill

Pittner, John; Simaan, Marwan

3:00 PM | 2016-METC-0644

#### On the Electromagnetic Steel Selections and Performance Impact Assessments of Synchronous Reluctance Motors

Liu, Cheng-Tsung; Chung, He-Yu; Lin, Sheng-Yang

4:00 PM | 2016-METC-0646

#### Rail Flatness Measurement Method Based on Virtual Rules

Manso, Pedro; Daniel, García; Usamentiaga, Ruben

4:30 PM | 2016-METC-0648

#### Enhanced Temperature Monitoring System for Sinter in a Rotatory Cooler

Usamentiaga, Ruben; Daniel, García

5:00 PM | 2016-METC-0649

#### Wireless Sensors Supplied by Energy Harvesting Thermoelectric Generators

Lopera, Juan; del Arco Rodríguez, Héctor; Pérez, Jesus; Rodríguez de Castro, Alejandro; Rendueles, Jose

5:30 PM | 2016-METC-0650

#### Several Configurations and Resonant Control for Multiphase Induction Heating Systems

Dzung, Phan Quoc; VO, Anh Tuan; NGOC, Thang Pham; Maussion, Pascal

Tuesday, October 4, 2016

8:00 AM – 12:00 PM

## Session #12

### IACC

#### INDUSTRIAL AUTOMATION AND CONTROL COMMITTEE

**Session Chair:** Anurag Srivastava

**Session Organizer:** Anurag Srivastava

**Room:** Salon A

8:00 AM | 2016-IACC-0776

#### Risk Assessment of Coordinated Cyber-Physical Attacks Against Power Grids: A Stochastic Game Approach

Wei, Longfei; Sarwat, Arif; Saad, Walid

8:30 AM | 2016-IACC-0794

#### An Improved Delayed Signal Cancellation PLL for Fast Grid Synchronization under Distorted and Unbalanced Grid Condition

Huang, Qicheng; Kaushik, Rajashekara

9:00 AM | 2016-IACC-0829

#### A Quadratic Programming Based Optimal Power and Battery Dispatch for Grid Connected Micro Gri

George, Tim; Ghosh, Sudipta; Kamalasadana, Sukumar; Mandal, Paras

9:30 AM | 2016-IACC-0791

#### Wavelet Packet Decomposition for Power Quality Monitoring in Smart Grid

Bhuiyan, Sharif; Khan, Jesmin; Murphy, Gregory

10:30 AM | 2016-IACC-0792

#### Damping of Low-Frequency Oscillations Using Takagi-Sugeno Fuzzy Stabilizer in Real-time

Hadi, Lokman; Moghavvemi, Mahmoud; Almurib, Haider; Muttaqi, Kashem

11:00 AM | 2016-IACC-0778

#### Pareto Based Optimal Sizing and Energy Storage Mix in Ship Power Systems

Elsayed, Ahmed; Elsayad, Nourelddeen; Mohammed, Osama

11:30 AM | 2016-IACC-0777

#### Adaptive Notch Filter Based Multipurpose Control Scheme for Grid-Interfaced Three-Phase Four-Wire DG Inverter

Chilipi, Rajasekhareddy; Al sayari, Najji; Al Hosani, Khalifa; Beig, Abdul

Tuesday, October 4, 2016

8:00 AM – 12:00 PM

## Session #13 PSEC – Session #1

### POWER SYSTEMS ENGINEERING

**Session Chair:** Fabio Freschi  
**Session Organizer:** Kent Saylor  
**Room:** Salon B

8:00 AM | 2016-PSEC-0662

#### Short-Circuit Current Calculations of a Harbor Electrical Distribution System with Shore Power Connection

Su, Chun-Lien; Chen, Jih-Liang; Chin, Hai-Ming; Liao, Chi-Hsiang; Parise, Giuseppe; Chavdarian, Peniamin (Ben)

8:30 AM | 2016-PSEC-0663

#### Evaluation of Voltage Drop in Harbor Electrical Distribution Systems with High Voltage Shore Connection

Su, Chun-Lien; Lee, Yung-Chi; Chou, Min-Hung; Chin, Hai-Ming; Parise, Giuseppe; Chavdarian, Peniamin (Ben)

9:00 AM | 2016-PSEC-0664

#### Comprehensive Peak-Shaving for Port Cranes

Parise, Giuseppe; L. Parise; A. Malerba; F. M. Pepe; A. Honorati; B. Chavdarian

9:30 AM | 2016-PSEC-0665

#### How to Include Soil Thermal Instability in Underground Cable Ampacity Calculations

Bates, Carson; Malmedal, Keith; Cain, David

10:30 AM | 2016-PSEC-0666

#### Tests and Monitoring of Grounding Systems in HV/MV Substations

Parise, Giuseppe; L. Parise; L. Martirano; F. Tummlillo; G. Vagnati; A. Barresi

11:00 AM | 2016-PSEC-0667

#### Segmentation and Characterization of Voltage Sags in the Analysis of Industrial Circuits

Arias-Guzman, S.; Ustariz-Farfan, A.J.; Cano-Plata, Eduardo

11:30 AM | 2016-PSEC-0404

#### High Voltage Shore Connections (HVSC), an IEC/ISO/IEEE 80005-1 Compliant Solution: The Neutral Grounding System

Parise, Giuseppe; L. Parise; A. Malerba; S. Sabatini; P.(B.) Chavdarian; Chun-Lien Su

Tuesday, October 4, 2016

8:00 AM – 12:00 PM

## Session #14 PSPC #1

### POWER SYSTEMS PROTECTION

**Session Chair:** Gary Fox  
**Session Organizer:** Rob Hoerauf  
**Room:** Salon C

8:00 AM | 2016-PSPC-0710

#### Virtual Relay Design for Feeder Protection Testing with Online Simulation

Celeita Rodriguez, David; Perez Osorio, Juan; Ramos, Gustavo

8:30 AM | 2016-PSPC-0703

#### A Novel Location Method and Algorithm for DC Distribution Protection

Feng, Xianyong; Qi, Li; Pan, Jiuping

9:00 AM | 2016-PSPC-0702

#### A Multi-Agent Based Technique for Fault Location, Isolation, and Service Restoration

Habib, Hany; Yossef, Tarek; Cintuglu, Mehmet; Mohammed, Osama

9:30 AM | 2016-PSPC-0709

#### Insulator Infrared Image Denoising method based on Wavelet Generic Gaussian Distribution and Map Estimation

He, Hongying; Lee, Wei-Jen; Luo, Diansheng; Cao, Yijia

10:30 AM | 2016-PSPC-0704

#### A New Interconnection Protection for Co-Generation Systems

Saleh, Saleh; Meng, Ryan; McSheffery, Ryan; Buck, Sarah; Ozkop, Emre

11:00 AM | 2016-PSPC-0705

#### Design and Deployment of Special Protection System for Kinmen Power System

Yang, Jin-Shyr; Liao, Ching-Jung; Wang, Yung-Fu; Chu, Chia-Chi; Lee, Sheng-Huei; Lin, Yu-Jen

11:30 AM | 2016-PSPC-0707

#### Voltage Sag Profiles Based Fault Location in High Speed Railway Distribution System

Zhang, Shu; He, Zhengyou; Lee, Wei-Jen; Mai, Ruikun



Tuesday, October 4, 2016

8:00 AM – 12:00 PM

## Session #15 ESC #1

### ENERGY SYSTEMS

**Session Chair:** Wei-Jen Lee, *University of Texas at Arlington*

**Session Organizer:** Joe Weber, *Emerson Network Power*

**Room:** Salon D

---

8:00 AM | 2016-ESC-0725

#### Improved Power Quality of Three-Phase Grid Connected Solar Energy Conversion System under Grid Voltages Distortion and Imbalances

Agarwal, Rahul; Hussain, Ikhtlaq; Singh, Bhim; Chandra, Ambrish; Al Haddad, Kamal

8:30 AM | 2016-ESC-0730

#### Accurate Wind Turbine Annual Energy Computation by Advanced Modeling

Al-Masri, Hussein; Ehsani, Mehرداد

9:00 AM | 2016-ESC-0731

#### Impact of Wind Turbine Modeling on a Hybrid Renewable Energy System

Al-Masri, Hussein; Ehsani, Mehرداد

9:30 AM | 2016-ESC-0718

#### Optimized Control of the Solar Field in Parabolic Trough Solar Power Plants

Barcia, Lourdes A.; Martínez, Juan; Nevado Reviriego, Antonio; García, Fernando; Díaz, Juan; Peón, Rogelio

10:30 AM | 2016-ESC-0712

#### Simplified Frequency Estimation for Unit Scheduling Criteria with High Wind Penetration

Chang, Chia-An; Lo, Ting-Chun; Wu, Yuan-Kang; Chen, Bin-Kwie

11:00 AM | 2016-ESC-0713

#### Advancement in Battery Technology: A State-of-the-Art Review

Chen, Aoxia

11:30 AM | 2016-ESC-0735

#### Distributed Pinning Droop Control in Isolated AC Microgrids

Chu, Chia-Chi; Avila, Nelson

Tuesday, October 4, 2016

8:00 AM – 12:00 PM

## Session #16 Mining #1

### MINING

**Session Chair:** Miguel Angel Reyes, *NIOSH Pittsburgh Mining Research Division*

**Session Organizer:** Miguel Angel Reyes, *NIOSH Pittsburgh Mining Research Division*

**Room:** Salon G

---

8:00 AM | 2016-MIC-0740

#### Advanced Fault-Tolerant Current Control Of Five-Phase PMSM for Mining Applications

Semenov, Dmitry; Tian, Bing; Sun, Li; Mirzaeva, Galina

8:30 AM | 2016-MIC-0741

#### Medium Voltage IGBT Based Converters in Mine Hoist Systems.

Ferreira, Victor; Mendonça, Gabriel; Rocha, Anderson; Resende, Robson; Cardoso, Braz

9:00 AM | 2016-MIC-0742

#### Locked Charge Protection Algorithms Robust to Coordination with Overcurrent Protection in Ball and Sag Mill Drives

Valenzuela, M. Anibal; Castro, Pablo

9:30 AM | 2016-MIC-0743

#### Design of a High Power Low Losses DC-DC Converter for Mining Applications

Jahromi, Mohsen; Mirzaeva, Galina; Mitchell, Steven

10:30 AM | 2016-MIC-0755

#### An Overview of Remote Isolation Systems Applied in Process Industries

Durocher, David, Mike Lane

11:00 AM | 2016-MIC-0745

#### Autonomous Control and Navigation of a Lab-Scale Underground Mining Haul Truck Using LiDAR Sensor and Triangulation – Feasibility Study

Azizi, Seyyedmohsen; Tarshizi, Ebrahim

11:30 AM | 2016-MIC-0746

#### Temperature and Flow Monitoring of Electrolytic Cells Using Wireless Battery-free Harsh Environment Sensors

Aqueveque, Pablo; Morales, Anibal; Saavedra, Francisco; Pino, Esteban; Wiechmann, Eduardo

Tuesday, October 4, 2016

8:00 AM – 12:00 PM

## Session #17 LED Drivers

### INDUSTRIAL LIGHTING AND DISPLAYS

**Session Chair:** Marco A. Dalla Costa, *UFSM, Brazil*  
**Session Organizer:** Marcos Alonso, *University of Oviedo, Spain*  
**Room:** Salon H

8:00 AM | 2016-ILDC-0608

#### Design and Implementation of Ferroresonant Transformer for LED Driver Systems

Lin, Ray-Lee; Tsai, Chia-Hao; Chen, Nian-Ci

8:30 AM | 2016-ILDC-0609

#### Performance Comparison of Si and GaN Transistors in a Family of Synchronous Buck Converters for LED Lighting Applications

Duarte, Renan; Ferreira, Guilherme; Dalla Costa, Marco; Alonso, José

9:00 AM | 2016-ILDC-0611

#### Zeta Converter for Power Quality Improvement for Multi-String LED Driver

Jha, Aman; SINGH, BHIM

9:30 AM | 2016-ILDC-0605

#### Analysis and Design of a Novel Variable-Inductor-Based LED Driver for DC Lighting Grids

Alonso, J Marcos; Perdigão, Marina; Dalla Costa, Marco; Martinez, Gilberto; Osorio, Rene

10:30 AM | 2016-ILDC-0612

#### SPICE-Aided Design of a Variable Inductor in LED Driver Applications

Alonso, J Marcos; Perdigão, Marina; Abdelmessih, Guirguis Z.; Dalla Costa, Marco; Wang, Yijie

11:00 AM | 2016-ILDC-0624

#### Multi-objective Methodology to Find the Optimal Forward Current to Supply Light Emitting Diode (LED) Lightings

Dulout, Jérémy; Barroso, Angel; Séguier, Lionel; Jammes, Bruno; Dupuis, Pascal; Zisis, Georges; Alonso, Corinne

11:30 AM | 2016-ILDC-0625

#### A New Active Hybrid-Series-Parallel PWM Dimming Scheme for Off-Line Integrated LED Drivers with High Efficiency and Fast Dynamics

Abdelmessih, Guirguis Z.; Alonso, J Marcos

Tuesday, October 4, 2016

8:00 AM – 9:00 AM

## Session #18 Metals III Session

### METALS

**Session Chair:** Tom Dionise  
**Session Organizer:** Tom Dionise  
**Room:** Salon I

8:00 AM | 2016-METC-0645

#### Piecewise Variable Parameter Piecewise Variable Loss Model of Laminated Steel and its Application in Fine Analysis of Analysis of Iron loss of Inverter-Fed Induction Motors

Zhao, Haisen; Zhang, Dongdong; Wu, Yilong; Zhang, Dongdong; Xu, Guorui

8:30 AM | 2016-METC-0647

#### Nonlinear Observer for Temperatures and Emissivities in a Strip Annealing Furnace

Strommer, Stephan; Niederer, Martin; Steinboeck, Andreas; Jadachowski, Lukas; Kugi, Andreas

Tuesday, October 4, 2016

2:00 PM – 6:00 PM

## Session #19 IACC #4

### INDUSTRY AUTOMATION AND CONTROL

**Session Chair:** Akshay Rathore  
**Session Organizer:** Akshay Rathore  
**Room:** Salon A

2:00 PM | 2016-IACC-0800

#### Analysis, Design, and Implementation of Closed Loop Control of Electrolytic Capacitor-less Six-Pulse DC Link Inverter

Rathore, Akshay; Ghoshal, Anirban; Xuewei, Pan

2:30 PM | 2016-IACC-0786

#### Power Quality Improved SMPS Using BL-CSC Converter for Welding Applications

Narula, Swati; Singh, Bhim; Bhuvaneshwari, G.; Chandra, Ambrish; Al Haddad, Kamal

3:00 PM | 2016-IACC-0789

#### Efficiency Improvement on LLC Resonant Converter Using Integrated LCLC Resonant Transformer

Lin, Ray-Lee; Huang, Lung-Hua

4:00 PM | 2016-IACC-0782

#### A Symmetrical Cascaded H-Bridge Multilevel Inverter Used as Shunt Active Power Filter for Ideal and Deteriorated Voltage Conditions

Mortezaei, Ali; Simoes, Marcelo; Busarello, Tiago; Al Durra, Ahmed; Marafão, Fernando

**4:30 PM | 2016-IACC-0849**  
**Current-fed Multilevel Converters: An Overview of Circuit Topologies and Modulation Techniques**  
Rathore, Akshay; Kulothungan, Gnana Sambandam; Srinivasan, Dipti; Edpuganti, Amarendra

**5:00 PM | 2016-IACC-0767**  
**Unity Power Factor Operation and Load Leveling of Diesel Generator Set using Battery Energy Storage System**  
Niwas, Ram; Singh, Bhim

**5:30 PM | 2016-IACC-0799**  
**Decoupled Power Flow Using Phase Shift Control for a Three Limb High Frequency Transformer Based Three- Port DAB Integrating PV and Energy Storage**  
Chattopadhyay, Ritwik; Bhattacharya, Subhashish

**Tuesday, October 4, 2016 2:00 PM – 6:00 PM**

## **Session #20** **PSEC #2**

### **POWER SYSTEMS ENGINEERING**

**Session Chair:** Massimo Mitolo  
**Session Organizer:** Kent Saylor  
**Room:** Salon B

**2:00 PM | 2016-PSEC-0691**  
**Inductive Power Transfer for Automotive Applications State-of-the-Art and Future Trends**  
Mitolo, Massimo; Freschi, Fabio; Cirimele, Vincenzo

**2:30 PM | 2016-PSEC-0678**  
**Electrical Safety in Arc Welding Processes**  
Mitolo, Massimo; Freschi, Fabio; Giaccone, Luca

**3:00 PM | 2016-PSEC-0677**  
**Identification of Critical Components in Power Systems: A Game Theory Application**  
Pourahmadi, Farzaneh; Fotuhi-Firuzabad, Mahmud; Dehghanian, Payman

**4:00 PM | 2016-PSEC-0676**  
**Reliability Assessment of Automated Substation and Functional Integration**  
Salehi, Farshid; Brahman, Azade; Keypour, Reza; Lee, Wei-jen

**4:30 PM | 2016-PSEC-0679**  
**Electrical Safety Inspections in Industrial Facilities**  
Neitzel, Dennis

**5:00 PM | 2016-PSEC-0699**  
**Currents Flowing Through The Human Body: The Numerical Viewpoint**  
Freschi, Fabio; Mitolo, Massimo

**5:30 PM | 2016-PSEC-0680**  
**Assessment of the Occupational Exposure to the Magnetic Field Produced by Spot Welding Guns in Controlled Environment and Actual Working Conditions**  
Canova, Aldo; Freschi, Fabio; Giaccone, Luca

**Tuesday, October 4, 2016**

**2:00 PM – 6:00 PM**

## **Session #21** **ESC #2**

### **ENERGY SYSTEMS**

**Session Chair:** Wei-Jen Lee, *University of Texas at Arlington*  
**Session Organizer:** Joe Weber, *Emerson Network Power*  
**Room:** Salon D

**2:00 PM | 2016-ESC-0724**  
**A Sinusoidal Charging Strategy for Battery Energy Storage Systems Use in Light Electric Vehicles**  
Chuang, Ying-Chun

**2:30 PM | 2016-ESC-0726**  
**A Study on the Dynamic Behavior of a DFIG with Sensorless-based Control in Cooperation with a Fuzzy Controlled Energy Storage System**  
Giannakis, Andreas; Bampoulas, Adamantios; Karlis, Athanasios

**3:00 PM | 2016-ESC-0737**  
**Multi-Functional Double Mode Inverter for Power Quality Enhancement in Smart-Grid Applications**  
Harirchi, Farnaz; Simoes, Marcelo; Babakmehr, Mohammad; Al Durra, Ahmed; Mueen, S. M; Bubshait, Abdullah

**4:00 PM | 2016-ESC-0723**  
**Mid-Term Electric Load Forecasting – Application in Oil Facilities**  
Hernández, Eddison; Vasquez, Paul; Vera, Enrique

**4:30 PM | 2016-ESC-0732**  
**Optimizing the Control Strategy of Molten-Salt Heat Storage Systems in Thermal Solar Power Plants**  
Jose-Prieto, Miguel; Martínez, Juan; Peón, Rogelio; Barcia, Lourdes A.; Villegas Saiz, Pedro

**5:00 PM | 2016-ESC-0727**  
**Comparison of Flywheels and Supercapacitors for Energy Saving in Elevators**  
Kafalis, Konstantinos; Karlis, Athanasios

**5:30 PM | 2016-ESC-0714**  
**Interactive Model for Energy Management of Clustered Microgrids**  
Lu, Tianguang; Wang, Zhaoyu; Ai, Qian; Lee, Wei-Jen

Tuesday, October 4, 2016

2:00 PM – 6:00 PM

## Session #22 Mining 2

### MINING

**Session Chair:** Nicholas Damiano, *NIOSH Pittsburgh Mining Research Division*

**Session Organizer:** Miguel Angel Reyes, *NIOSH Pittsburgh Mining Research Division*

**Room:** Salon G

2:00 PM | 2016-MIC-0754

#### Advanced Diagnosis of Stator Faults in Large Induction Motors for Mining Applications

Mirzaeva, Galina

2:30 PM | 2016-MIC-0744

#### Process Modernization Upgrade: Selecting and Installing a New Medium-Voltage Motor Control Center

Durocher, David; Collins, Chuck; Farr, Lawrence

3:00 PM | 2016-MIC-0756

#### Empirical Determination of the Effect of Lifter Wear in Mill Power for Dry Grinding

Valenzuela, M. Anibal; Cartes Varas, Richard

4:00 PM | 2016-MIC-0757

#### Monitoring Physiological Variables of Mining Workers at High Altitude

Aqueveque, Pablo

4:30 PM | 2016-MIC-0758

#### Advanced Diagnosis of Rotor Faults in Large Induction Motors Based on Internal Flux Measurement

Mirzaeva, Galina

5:00 PM | 2016-MIC-0759

#### E-Fields of Electrode-Based Through-The-Earth (TTE) Communication

Yan, Lincan

Wednesday, October 5, 2016

8:00 AM – 12:00 PM

## Session #23 IACC #5

### INDUSTRIAL AUTOMATION AND CONTROL

**Session Chair:** Kashem Muttaqi

**Session Organizer:** Kashem Muttaqi  
Salon A

8:00 AM | 2016-IACC-0763

#### Resolution-Level MPPT Controller for PMG-Based Wind Energy Conversion Systems

Saleh, Saleh

8:30 AM | 2016-IACC-0828

#### Real-Time Reduced Order Model Based Adaptive Pitch Controller for Grid Connected Wind Turbines

Thakallapelli, Abilash; Ghosh, Sudipta; Kamalasadana, Sukumar

9:00 AM | 2016-IACC-0771

#### Torsional Oscillation Damping Control for DFIG-based Wind Farm Participating in Power System Frequency Regulation

Xi, Xinze; Geng, Hua; Yang, Geng

9:30 AM | 2016-IACC-0770

#### Two-Level Damping Control for DFIG-based Wind Farm Providing Synthetic Inertial Service

Xi, Xinze; Geng, Hua; Yang, Geng

10:30 AM | 2016-IACC-0768

#### A Novel DTFC Based IPMSM Drive with Improved Dynamic Performance and Efficiency

Rahman, Md.; Uddin, Mohammad

11:00 AM | 2016-IACC-0772

#### Lithium-Ion Battery Charge Equalization Algorithm for Electric Vehicle Applications

Hannan, M; Hoque, M; Peng, S; Uddin, Mohammad

Wednesday, October 5, 2016

8:00 AM – 12:00 PM

## Session #24 PSEC #3

### POWER SYSTEMS ENERGY

**Session Chair:** Sergio Panetta

**Session Organizer:** Kent Saylor

**Room:** Salon B

8:00 AM | 2016-PSEC-0668

#### A Dynamic Equivalent Method of Wind Farm Considering Wind farm Dispersion and Wind Turbine Difference

Wang, Chengfu; Li, Zhe; Liang, Jun; Wang, Jinyu; Yang, Ming; Dong, Xiaoming

8:30 AM | 2016-PSEC-0669

#### Design and Commissioning of 2.5 MW DC Supply for Evaluating Megawatt Scale Smart Inverters

Leonard, Jesse

9:00 AM | 2016-PSEC-0670

#### The Development of a Power Flow-Based Controller for Micro-Grid Systems

Saleh, Saleh

9:30 AM | 2016-PSEC-0671

#### An Optimization Approach to Design Decentralized Load Frequency Controllers in Islanded Microgrids

Azizi, Seyyedmohsen; Khajehoddin, Ali

10:30 AM | 2016-PSEC-0672

**Analytical Methods for Characterizing Frequency Dynamics in Islanded Microgrids with Gensets and Energy Storage**  
Renjit, Ajit

11:00 AM | 2016-PSEC-0673

**Control Strategy for Islanded Microgrid Integrating Renewable Energy with Storage and Diesel Generator**  
Maharjan, Rabindra; Guo, Feng; Sharma, Ratnesh

11:30 AM | 2016-PSEC-0674

**Mitigation of Voltage Variation by REMS for Distribution Feeders**  
Yeh, Chih-Chieh; Chen, Chao-Shun; Ku, Te-Tien; Lin, C. H.; Hsu, C.T.; Chuang, Hui-Jen

Wednesday, October 5, 2016

8:00 AM – 12:00 PM

## Session #25 PSEC #6

### POWER SYSTEMS ENGINEERING

**Session Chair:** Kent Saylor  
**Session Organizer:** Kent Saylor  
**Room:** Salon C

8:00 AM | 2016-PSEC-0693

**Circulating Current Suppression for MMC-HVDC under Unbalanced Grid Conditions**  
Wang, Jinyu; Liang, Jun; Wang, Chengfu; Dong, Xiaoming

8:30 AM | 2016-PSEC-0694

**Dynamic Simulator for Multi-Terminal Direct Current Transmission System**  
Liu, Zhijie; Li, Ke-Jun; Meng, Xinhan; Lee, Wei-Jen; Wang, Zhuo-di; Sun, Kaiqi

9:00 AM | 2016-PSEC-0698

**Emerging Power Quality Challenges Due to Integration of Renewable Energy Sources**  
Liang, Xiaodong

9:30 AM | 2016-PSEC-0696

**Power Flow Calculation Considering Power Exchange Control for Multi-Area Interconnection Power Networks**  
Dong, Xiaoming; Ding, Yuanyuan; Sun, Hua; Zhao, Penghui; Wang, Chengfu; Wang, Yong

10:30 AM | 2016-PSEC-0697

**A Multi-step Dynamic Equivalent Method for Urban Power Grid Based on District-dividing**  
Yu, Xiaoyan; Li, Ke-Jun; Wang, Mingqiang; Wang, Zhuo-di; Sun, Kaiqi; Lou, Jie

11:00 AM | 2016-PSEC-0695

**Load Aggregation From Generation Follows Load to Load Follows Generation**  
Saleh, Saleh; Pijnenburg, Petrus; Castillo, Eduardo

Wednesday, October 5, 2016

8:00 AM – 12:00 PM

## Session #26 ESC #3

### ENERGY SYSTEMS

**Session Chair:** Joe Weber, *Emerson Network Power*  
**Session Organizer:** Wei-Jen Lee, *University of Texas at Arlington*  
**Room:** Salon D

8:00 AM | 2016-ESC-0734

**Smart Micro Grids for Nearly Zero Energy Buildings**  
Martirano, Luigi; Habib, Emanuele; Parise, Giuseppe; Greco, Giacomo; Manganeli, Matteo; Massarella, Ferdinando; Parise, Luigi

8:30 AM | 2016-ESC-0717

**Power Management and Control Strategies for Efficient Operation of a Solar Power Dominated Hybrid DC Microgrid for Remote Power Applications**  
Mendis, Nishad; Mahmud, Md Apel; Kanti Roy, Tushar; Haque, Enamul; Muttaqi, Kashem

9:00 AM | 2016-ESC-0739

**Smart Grid Demand Response Management Using Internet of Things for Load Shedding and Smart-Direct Load Control**  
Mortaji, Hamed; Ow, Siew Hock; Moghavvemi, Mahmoud; Almurib, Haider

9:30 AM | 2016-ESC-0715

**Control Response Analysis of Aggregated Energy Storage Household Appliances**  
Polgari, Beata; Divényi, Dániel; Raisz, David

10:30 AM | 2016-ESC-0738

**Implementation and Control of Small-Scale Hybrid Standalone Power Generation System Employing Wind and Solar Energy**  
Rezkallah, Miloud; Sharma, Shailendra; Chandra, Ambrish; Singh, Bhim

11:00 AM | 2016-ESC-0722

**An Intelligent Driver Alerting System for Real-time Range Indicator Embedded in Electric Vehicles**  
Sarrafan, Kaveh; Muttaqi, Kashem; Sutanto, Danny; Town, Graham

11:30 AM | 2016-ESC-0719

**Variable Flow Controls of Closed System Pumps for Energy Savings in Maritime Power Systems**  
Su, Chun-Lien; Liao, Chi-Hsiang; Chou, Tso-Chu; Chou, Min-Hung; Guerrero, J. M.

Wednesday, October 5, 2016 8:00 AM – 12:00 PM

## Session #27 Mining 3

### MINING

**Session Chair:** Lincan Yan, *NIOSH Pittsburgh Mining Research Division*

**Session Organizer:** Miguel Angel Reyes *NIOSH Pittsburgh Mining Research Division*

**Room:** Salon G

8:00 PM | 2016-MIC-0747

#### Integrated Modeling and Evaluation of Electric Mining Trucks During Propel and Retarding Modes

Valenzuela, M. Anibal; Valenzuela C., Javier

8:30 PM | 2016-MIC-0748

#### An Intercell Busbar Topology to Improve Resilience to Anomalies of Copper Electrorefining Process

Wiechmann, Eduardo; Aqueveque, Pablo; Henriquez, Jorge; Morales, Anibal

9:00 PM | 2016-MIC-0749

#### Common Mode Overvoltage Mitigation in a Medium Voltage Pump Motor Transformerless Drive in Mining Plant

Parreiras, Thiago; Prado, Brenno; Cardoso, Braz

9:30 PM | 2016-MIC-0750

#### Control Strategy for a High Power DC transformer with Soft Switching Scheme for Mining Applications

Jahromi, Mohsen; Mirzaeva, Galina; Mitchell, Steven

10:30 PM | 2016-MIC-0752

#### A Method to Evaluate Cycloconverters Commutation Robustness under Voltage Variations in Mining Distribution Systems

Morán, Luis; Silva, Francisco; Torres, Miguel; Weishaupt, Christian

11:00 PM | 2016-MIC-0753

#### Simulation and Measurement of Through-the-earth (TTE), Extremely Low-Frequency Signals using Copper-clad, Steel Ground Rods

Damiano, Nicholas; Whisner, Bruce; Yan, Lincan; Zhou, Chenming

11:30 PM | 2016-MIC-0760

#### Equipotential Bars with Replaceable Connectors for Copper Electrowinning

Wiechmann, Eduardo; Aqueveque, Pablo; Munoz, Luis

Wednesday, October 5, 2016 1:30 PM – 5:30 PM

## Session #28 IACC #6

### INDUSTRIAL AUTOMATION AND CONTROL

**Session Chair:** Sukumar Kamalasadana

**Session Organizer:** Sukumar Kamalasadana

**Room:** Salon A

1:30 PM | 2016-IACC-0774

#### A Single Stage Solar PV Array Based Water Pumping System Using SRM Drive

Mishra, Anjanee Kumar; Singh, Bhim

2:00 PM | 2016-IACC-0795

#### Model Predictive Power Control Approach for Three-Phase Single-Stage Grid-Tied PV Module-Integrated Converter

Moghadasi, Amirhasan; Sargolzaei, Arman; Khalilnejad, Arash; Moghaddami, Masood; Sarwat, Arif

3:30 PM | 2016-IACC-0765

#### Model Reference Adaptive Back-EMF Estimations for Sensorless Control of Grid-Connected Doubly-Fed Induction Generators

Lu, Lin-Yu; Chu, Chia-Chi; Yeh, Tzu-Wei

4:00 PM | 2016-IACC-0801

#### A Novel Control Algorithm for a Static Series Synchronous Compensator Using a Cascaded H-Bridge Converter

Chavan, Govind; Bhattacharya, Subhashish

4:30 PM | 2016-IACC-0781

#### Reliability Analysis of a Novel Design of Pose Deformation System for Mobile Robots through Bond Graph and Simulink

Cui, Jingjing; Ren, Yi; Yang, Dezhen; Zeng, Shengkui

5:00 PM | 2016-IACC-0764

#### On-chip AC-DC Multiple-Power-Supplies Module for Transcutaneously Powered Wearable Medical Devices

Chu, Yen-Chia; Chang-Chien, Le-Ren; Artan, N. Sertac; Czarkowski, Dariusz; Zou, Jialin; Chang, Chih-Hsiang; Chao, Jonathan

Wednesday, October 5, 2016

1:30 PM – 5:30 PM

## Session #29 PSEC #4

### POWER SYSTEMS ENGINEERING

**Session Chair:** Sergio Panetta  
**Session Organizer:** Kent Saylor  
**Room:** Salon B

1:30 PM | 2016-PSEC-0681

#### Real Time Implementation of Three-Phase Single Stage SPV Grid Tied System Using TL-VSC

Hussain, Ikhlaq; Kandpal, Maulik; Singh, Bhim; Chandra, Ambrish; Al Haddad, Kamal

2:00 PM | 2016-PSEC-0682

#### Time Base Synchronization for Interconnecting Real-Time Platforms in Co-simulation

Shoubaki, Ehab

2:30 PM | 2016-PSEC-0683

#### Stability Improvement of a Two-Area Power System Connected with an Integrated Onshore and Offshore Wind Farm Using a STATCOM

Wang, Li; Chang, Che-Hao; Prokhorov, Anton V.

3:30 PM | 2016-PSEC-0684

#### Stability Analysis of a Hybrid Multi-infeed HVDC System Connected between Two Offshore Wind Farms and Two Power Grids

Wang, Li; Yang, Zhi-Hao; Prokhorov, Anton V.

4:00 PM | 2016-PSEC-0686

#### Probabilistic Assessment and Evaluation for Transients in a Medium voltage Three-phase Capacitor Bank Energized by Unsynchronized Vacuum Switchgears

Pires, Igor

4:30 PM | 2016-CSC-0403

#### Standards and Guidelines for Grid-connected Photovoltaic Generation Systems: a Review and Comparison

Yuan-Kang Wu, N

Wednesday, October 5, 2016

1:30 PM – 5:30 PM

## Session #30 PSEC #5

### POWER SYSTEMS ENGINEERING

**Session Chair:** Fabio Freschi  
**Session Organizer:** Kent Saylor  
**Room:** Salon C

1:30 PM | 2016-PSEC-0687

#### Factors Affecting Ground Potential Rise and Fault Currents Slong Transmission Lines with Multi-Grounded Shield Wires

Liang, Xiaodong; Wang, Chenyang

2:00 PM | 2016-PSEC-0688

#### Rule-Based Data-Driven Analytics for Wide-Area Fault Detection Using Synchrophasor Data

Liang, Xiaodong; Wallace, Scott; Nguyen, Duc

2:30 PM | 2016-PSEC-0689

#### A Comparative Study on Vibration- and Current-Based Approaches for Drivetrain Gearbox Fault Diagnosis

Qiao, Wei

3:30 PM | 2016-PSEC-0690

#### Current-Based Fault Detection and Identification for Wind Turbine Drivetrain Gearboxes

Qiao, Wei

4:00 PM | 2016-PSEC-0692

#### A Visualization Tool for Real-Time Dynamic Contingency Screening and Remedial Actions

Mitra, Joydeep

WEDNESDAY TECH SESSION



Wednesday, October 5, 2016

1:30 PM – 5:30 PM

## Session #31 ESC #4

### ENERGY SYSTEMS

**Session Chair:** Joe Weber, *Emerson Network Power*  
**Session Organizer:** Wei-Jen Lee, *University of Texas at Arlington*  
**Room:** Salon D

1:30 PM | 2016-ESC-0736

**An Efficient Method for Small-Signal Stability Assessment of P-f/Q-V Droop Control in an Isolated Micro-Grid**  
Subramani, Mohanraj; Gude, Srinivas; Lin, Kuan-Chu; Chu, Chia-Chi

2:00 PM | 2016-ESC-0721

**Quantification of Storage Necessary to Firm Up Wind Generation**  
Sulaeman, Samer

2:30 PM | 2016-ESC-0729

**Performance Evaluation of Two Magnetic Recovery Circuits of Forward Converter**  
Ye, Dongdong; Sun, Dinghao; Lee, Wei-Jen; Huang, Heng; Zhang, Yang

3:30 PM | 2016-ESC-0716

**A Multi-layer Optimal Chiller Operation Management Framework**  
Ye, Yanzhu; Sharma, Ratnesh; Guo, Feng

4:00 PM | 2016-ESC-0733

**Converter Control of PMSG Wind Turbine System for Inertia-Free Stand-Alone Microgrid**  
Yoo, Jae Ik; Kim, Jaewoo; Park, Jung-Wook

Wednesday, October 5, 2016

1:30 PM – 5:30 PM

## Session #32 IACC #7

### INDUSTRIAL AUTOMATION AND CONTROL

**Session Chair:** Babak Nahid-Mobarakeh  
**Session Organizer:** Babak Nahid-Mobarakeh  
**Room:** Salon G

1:30 PM | 2016-IACC-0785

**Design and Analysis of a Proposed Light Weight Three DOF Planar Industrial Manipulator**  
Aziz, Mina; Madibekov, Zhanibek; Elsayed, Abdelrahman; Abdulrazic, Mohammed; Yahya, Samer; Almurib, Haider; Moghavemi, Mahmoud

2:00 PM | 2016-IACC-0810

**Design and Implementation of A Fire Detection and Control System for Automobiles Using Fuzzy Logic**  
Sowah, Robert; Ampadu, Kwame; Ofoli, Abdul; Koumadi, Koudjo M.; Mills, Godfrey; Nortey, Joseph

2:30 PM | 2016-IACC-0796

**Adaptive Nonlinear Disturbance Observer Using Double Loop Self-Organizing Recurrent Wavelet-Neural-Network for Two-Axis Motion Control System**  
El-Sousy, Fayez; Abuhasel, Khaled

3:30 PM | 2016-IACC-0815

**An Overview of Shaft Voltage and Bearing Currents in Rotating Machines**  
Plazenet, Thibaud; Boileau, Thierry; Caironi, Cyrille; Nahid-Mobarakeh, Babak

4:00 AM | 2016-IACC-0773

**A Comparative Study on D Converter Based on Control Schemes of Maximum Extracted Power**  
El Khateb, Ahmad; Uddin, Mohammad; Rahim, Nasrudin; W. Williams, Barry







## Tutorials

SUNDAY, OCTOBER 2nd

2:00 PM – 6:00 PM

**Course ID# 104068**

**Application of EMTP to Industrial and Distribution Power Systems**

ORGANIZER: Rasheek Rifaat  
*Jacobs Canada*

**Room:** SALONS G-H

The Electro Magnetic Transient Program (EMTP) is a powerful time-domain-analysis tool that can be utilized by power system engineers to study system transients. Engineers involved with industrial and distribution systems encounter challenges mostly associated with low voltage (LV) and medium voltage (MV) Industrial systems where transient aspects and their criticalities differ from high-voltage (HV) and extra-high-voltage (EHV) utility systems. Nevertheless, due to prudent design of equipment and diverse system configurations, it is becoming more important for industrial and distribution electrical systems engineers to investigate voltage and other system transients. This tutorial includes when and how to apply EMTP to MV industrial systems, and tips, tricks and traps to assist in the utilization of EMTP. Examples include circuit breaker transient recovery voltage (TRV) for systems with high-resistance neutral grounding and systems with current-limiting reactors, capacitor switching, large motor capacitance/reactance starting, ferroresonance in potential transformer (PT) and distribution transformers and induction in pipelines parallel to a long run of overhead line. The tutorial will reference EMTP-ATP developed by BPA and its associated ATPDraw preprocessor, although engineering aspects in the tutorial are extended to other commercially available packages.

### BIOGRAPHY

Rasheek M. Rifaat, P.Eng, IEEE Fellow, Technical Director - Electrical with Jacobs Engineering, Calgary, Alberta, Canada. Mr. Rifaat received a B.Sc. from Cairo University in 1972 and M.Eng. from McGill University in Montreal in 1979 in Electrical Engineering. From 1975 to 1981, he worked for Union Carbide Canada Ltd. in Beauharnois Quebec. In 1981, he joined Monenco Consultants Limited in Calgary, Alberta, and Saskmont Engineering Limited in Regina, Saskatchewan where he was involved in thermal power generating plant projects with special interest in generator protection systems and power plant systems. Since 1991, he has been working for Delta Hudson Engineering Ltd. (Now Jacobs Engineering) in Calgary, Alberta with work duties on large power co-generation projects, and industrial power systems. Mr. Rifaat is the Chair of the IAS/I&CPS, WG for revising the IEEE Standard for Recommended Practice for Protection and Coordination in Industrial & Commercial Systems (Series 3004). He is a Fellow Member in the IEEE and a registered professional engineer in three Canadian Provinces: Alberta, Saskatchewan and Ontario. Mr. Rifaat has published over 30 papers on cogeneration plant protection, operation and transients in industrial power systems.

# WEDNESDAY, OCTOBER 5th

8:00 AM – 5:30 PM

**Course ID #104072**

## **IEEE Standard 81 “Guide for Measuring Earth Resistivity, Ground Impedance, and Earth Surface Potentials of a Grounding System**

ORGANIZER: Carl Moller  
*GroundCAN, Ltd.*

**Room:** PEARL

Grounding is essential for an electrical system to operate properly and safely. IEEE Standard 81-2012 outlines various test methods and techniques that are used to measure the electrical characteristics of grounding systems. Experts from within the working group that developed IEEE Standard 81-2012 have prepared this tutorial to provide engineers and designers with an enhanced understanding of measuring earth resistivity, ground impedance, step and touch voltages and grounding system integrity. The results of a recent industry survey on ground testing will also be provided along with live, in room, demonstrations of the principles and testing techniques using test equipment and actual soil. The tutorial is not just a presentation of the guide; the instructors will share their insight and many years of experience as practitioners including many tips and tricks learned along the way. The goal is to provide participants with the knowledge and confidence to conduct the testing, or to properly evaluate the test results provided by others.

### **BIOGRAPHIES**

Salman Mohagheghi received the B.Eng. from University of Tehran, Iran, and PhD from Georgia Institute of Technology, Atlanta, GA both in Electrical Engineering. Currently, he is an Assistant Professor at the Electrical Engineering and Computer Science Department at Colorado School of Mines, Golden, CO. Prior to joining CSM, he was a Senior R&D Scientist at ABB Corporate Research Center, Raleigh, NC. His current research focuses on situational awareness, communication networks in power systems, and distribution automation systems. He is an ANSI representative at the IEC TC-57 WG-17 on “Power System IED Communication and Associated Data Models for Distributed Energy Resources and Distribution Automation”, and a senior member of the IEEE.

- (1) Bryan Beske received his B.S in Electrical Engineering from the University of Wisconsin – Platteville in 1999 and obtained his Professional Engineering certification in 2006. Since 2002 he has been with the American Transmission Company (ATC) and is currently a Consultant Standards Engineer. His primary focus is lightning and grounding aspects of transmission lines and substations. Bryan is a member of ASTM, CIGRE and IEEE and is an ATC delegate for CEATI, EPRI and multiple industry standards working groups that pertain to lightning and grounding. Since 2009 he has been involved in researching the resistivity of substation surface aggregate, co-authored an IEEE Transaction paper based on that research and, in 2015, started and is Chairing an IEEE task force on aggregate resistivity.
- (2) Bill Carman has a BE(Elec) and doctorate in the area of grounding system risk quantification and design, has authored over 40 technical papers, and is a conjoint Senior Lecturer at Newcastle University. For over three decades he has been closely involved in grounding system design and testing, safety analysis, standards development, research and development, and training. He is active in Australian and international grounding related standards committees. He is the chair of the joint Cigre/Cired B3:35 committee investigating the integration of quantified risk in grounding system design and operation.

- (3) Dennis DeCosta, P.E. received his B.S. degree in Electrical Engineering from the University of Michigan. He has 42 years of experience which includes many years of managing and designing HV/EHV substation and underground transmission line projects. He is a registered professional engineer in six states; he is President of Commonwealth Associates, Inc.; he is a member of IEEE; and he chairs the working group which writes IEEE Standard 81 on ground testing.
- (4) Carl Moller is a professional grounding engineer with over 10 years of design and testing experience with high voltage substations, hydro and thermal generation stations and mining stations. He currently works for GroundCan Ltd. Carl has published several research papers and has been a regular presenter at the annual CDEGS Users' Group Meeting and was also a speaker at the 2014 EPEC conference. He has gained recognition as an active member of several working groups for the IEEE Substation Committee. Carl is an invited participant in the latest grounding working group for CIGRE, B3-35, and also sits on the review committee for the AEUC (Alberta Electrical Utility Code). Carl's involvement in international committee work has also provided him with opportunities to develop training tutorials for utilities in Canada and abroad.
- (5) Stephen Palmer is an Australian grounding (also called earthing) specialist with expertise in all areas related to grounding, including design, audit and test in sectors including power generation and delivery, heavy industry, mining and rail. Stephen has been full time in this field since 1998, investigating and managing the risks associated with grounding, lightning protection and interference and personally undertaking countless tests. He is presently the director of a team of 25 consultants & researchers at Safearth. Stephen has delivered formal grounding training for more than a decade and has presented at numerous conferences including for CIGRE and IEEE. He is a contributing member of technical committees within Australia, and for IEEE & CIGRE, and is secretary of B3.35, tasked to publish on substation earthing design optimization including quantified risk.
- (6) Vinod Simha received his B.S. and M.S. degrees in Electrical Engineering from B.M.S. College of Engineering Bangalore, India and University of Texas at Arlington, USA in 2001 and 2005 respectively. Vinod has conducted computer simulation studies in load flow, voltage stability, power system transients, substation grounding, fuse sizing, underground cable sizing, lightning shielding, and lighting. He has designed low voltage switchgear required for electrical installations in power plants, substations, ships and multi-storied buildings. He is a member of the IEEE, and serves as an Engineer Principal in Station Engineering Design Standards group at AEP in Gahanna, OH





## IEEE-IAS Leadership

### 2016 IEEE INDUSTRY APPLICATION SOCIETY

#### IAS EXECUTIVE OFFICE

445 Hoes Lane  
Piscataway, NJ 08854  
Phone: 732-465-5804  
Email: [ias-administrator@ieee.org](mailto:ias-administrator@ieee.org)

#### EXECUTIVE BOARD

The Executive Board consists of all Society Officers, Operating Department Chairs, Staff Department Chairs, Standing Committee Chairs, Members-at-large and the Annual Meeting General Chair. The Executive Board is empowered to amend bylaws, nominate officers and members-at-large and approve appointments.

#### SOCIETY OFFICERS

##### Society President

**David B. Durocher**

Eaton Corporation  
26850 SW Kinsman Rd.  
Wilsonville, OR 97070  
USA  
(503) 582-2714  
[davidbdurocher@eaton.com](mailto:davidbdurocher@eaton.com)

##### Society President-Elect

**Tomy Sebastian**

Halla Mechatronics  
3933 Monitor Road  
Bay City, MI 48706  
USA  
(989)316-7326  
[t.sebastian@ieee.org](mailto:t.sebastian@ieee.org)

##### Society Vice President

**Georges Zisis**

LAPLACE (Laboratoire Plasma et Conversion d'Énergie)  
Universite Paul Sabatier - Toulouse III  
Build. 3R2; 118 rte de Narbonne  
F-31062 Toulouse Cedex 9 ; FRANCE  
+33 5 61556996  
[georges.zisis@laplace.univ-tlse.fr](mailto:georges.zisis@laplace.univ-tlse.fr)

##### Society Treasurer

**Corinne Fields**

Manager of Sales and Technical Services  
DCS Group LLC  
Shawnee, Kansas, USA  
[corinne.fields@dcsgroup.us](mailto:corinne.fields@dcsgroup.us)

## TECHNICAL DEPARTMENT CHAIRS

### Manufacturing Systems Development & Applications Development

#### Mohammed Uddin

Dept. of Electrical Engineering  
Lakehead University  
Thunder Bay, Ontario,  
Canada P7B 5E1  
(807) 343- 8693  
muddin@lakeheadu.ca

### Process Industries

#### John A. Kay

Allen-Bradley Rockwell Automation Canada  
135 Dundas St.  
Cambridge, ON N1R 5X1  
Canada  
(519) 740-4734  
jakay@ra.rockwell.com

### Industrial & Commercial Power Systems

#### Wei-Jen Lee

Energy Systems Research Center  
University of Texas at Arlington  
Arlington, TX 76019  
USA  
(817) 272 5046  
wlee@uta.edu

### Industrial Power Conversion Systems

#### Po-tai Cheng

Dept Of Electrical Eng  
Natl Tsing Hua University  
101 Section 2 Kuang-Fu Rd  
Hsinchu 30013 Taiwan  
886 3 574 2794

## OPERATING DEPARTMENT CHAIRS

### Awards

#### Mohammad S. Islam

Halla Mechatronics  
3933 Monitor Road  
Bay City, MI 48706  
USA  
(989) 493-3543  
mohammad.s.islam@ieee.com

### Chapters & Membership

#### Peter Magyar

M&PP Consult – Control and Drives  
Dalbker Str 71  
33813 Oerlinghausen  
Germany  
+49 5202 979950  
peter.magyar@ieee.org

### Education

#### Iqbal Husain

North Carolina State University  
Raleigh, NC 27695-7571  
USA  
(919) 513-5927  
ihusain2@ncsu.edu

### Meetings

#### R. Mark Nelms

Auburn University  
ECE Department  
200 Broun Hall  
Auburn University, AL 36849-5201  
USA  
(334) 844-1830  
m.nelms@ieee.org

### Publications

#### Ahmed Rubaai

Howard University  
Electrical Engineering  
2300 6th St. NW  
Washington, DC 20001-2323  
USA  
(202) 806-6615  
arubaai@howard.edu

### Standards

#### S. Mark Halpin

Auburn University  
200 Broun Hall  
Auburn, AL 36849-0001  
USA  
halpin@eng.auburn.edu

## STANDING COMMITTEE CHAIRS

### Constitution & Bylaws

**Blake Lloyd**

Iris Power LP  
3110 American Drive  
Mississauga, ON L9V-1T2  
(905) 364-4582  
blloyd@qualitrolcorp.com

### Electronic Communications

**Clifton Oertli**

NEI  
11049 W 44th Ave, Suite 100  
Wheat Ridge, CO 80033  
11049 W 44th Ave, Suite 100  
coertli@ieee.org

### Financial Planning

**Corinne Fields**

Manager of Sales and  
Technical Services  
DCS Group LLC  
Shawnee, Kansas, USA  
corinne.fields@dcsgroup.us

### Inter-Society Cooperation

**Peter Wung**

GE Aviation  
111 River Park Drive  
Dayton, OH 45409  
pwung@ieee.org

### Long Range Planning

**Georges Zissis**

LAPLACE (Laboratoire Plasma et  
Conversion d'Énergie)  
Universite Paul Sabatier - Toulouse III  
Build. 3R2; 118 rte de Narbonne  
F-31062 Toulouse Cedex 9 ; France  
+33 5 61556996  
georges.zissis@laplace.univ-tlse.fr

### Nominating

**Blake Lloyd**

Iris Power LP  
3110 American Drive  
Mississauga, ON L9V-1T2  
Canada  
(905) 364-4582  
blloyd@qualitrolcorp.com

## MEMBERS-AT-LARGE

**J. Marcos Alonso**

Univ de Oviedo  
Elec Eng Dept  
Campus de Viesques  
Edificio 3, Sala 3.2.20  
33204 Asturias-Gijon  
Spain  
+34985182380  
marcos@uniovi.es

**Chiara Boccaletti**

Sapienza University of Rome  
Dept. of Astronautics, Electrical  
and Energetic Engineering  
Italy  
chiara.boccaletti@uniroma1.it

**Aldo Boglietti**

Politecnico di Torino  
Corso Duca degli Abruzzi, 24  
10129 Torino  
Italy  
+39 335 5298000  
Aldo.boglietti@polito.it

**David Eng**

Technical Marketing and Sales  
2415 San Ramon Valley Blvd.  
#4324  
San Ramon, CA 94583-5381  
USA  
engdd412@ieee.org

**Ayman EL-Refaie**

GE Global Research  
1 Research Circle  
Niskayuna, NY, 12309  
USA  
amelrefaie@gmail.com

**Andy Knight**

Electrical and Computer Engineering  
Schulich School of Engineering  
University of Calgary  
2500 University Drive NW  
Calgary, AB, Canada T2N1N4  
andyknight@ieee.org

**Gustavo Ramos -Lopez**

University of the Andes  
School of Engineering  
Cra 1 Este No. 19A-40  
Oficina ML-319  
Bogota, D. D. Columbia  
gramos@uniandes.edu.co

**Tamas Ruzsanyi**

Ganz-Skoda Electric LTD  
Budafoki 59, Budapest  
Hungary, 1111  
+36 30 45 717 52  
Tamas.ruzsanyi@ieee.org

**Srikanth Vasudevan**

Department of Electrical and Elec-  
tronics Engineering  
School of Engineering  
Amrita Vishwa Vidyapeetham  
(AMRITA University)  
Amritapuri campus  
Kollam, Kerala, India  
+919495314466  
Srikanthvasudev@ieee.org

## EX-OFFICIO & LIAISON

### Society Past President

#### **Blake Lloyd**

Iris Power LP  
3110 American Drive  
Mississauga, ON L9V-1T2  
Canada  
(905) 364-4582  
blloyd@qualitrolcorp.com

### IEEE Division II Director

#### **Hirofumi Akagi**

Dept Of Electrical Eng  
Tokyo Institute Of Technology  
Tokyo 152-8552  
Japan  
+81 3 5734 3549  
akagi@ee.titech.ac.jp

### 2016 – Seattle, WA

#### **Tomy Sebastian**

Halla Mechatronics  
3933 Monitor Road  
Bay City, MI 48706  
USA  
(989)316-7326  
t.sebastian@ieee.org

### 2017 – Cleveland, OH

#### **Georges Zissis**

LAPLACE (Laboratoire Plasma et Conversion d’Energie)  
Universite Paul Sabatier - Toulouse III  
Build. 3R2; 118 rte de Narbonne  
F-31062 Toulouse Cedex 9 ; FRANCE  
+33 5 61556996  
georges.zissis@laplace.univ-tlse.fr

## EXECUTIVE OFFICE

### Society Executive Director

#### **Patrick McCarren**

445 Hoes Lane  
Piscataway, NJ 08854  
732-562-2663  
p.mccarren@ieee.org

### Society Administrator

#### **Lynda Bernstein**

IEEE IAS Program Specialist  
445 Hoes Lane  
Piscataway, NJ 08855  
(732) 465-5804  
ias-administrator@ieee.org

# 2016 INDUSTRY APPLICATIONS SOCIETY COUNCIL

The Society Council consists of all Society Officers, Department Officers and Committee Chairs, Past Presidents and Chapter Area Chairs. The Society Council meets annually and is empowered to elect officers, ratify amendments to the Constitution and establish major policy

## EXECUTIVE BOARD

### Society Officers

**SOCIETY PRESIDENT:** David B. Durocher

**PRESIDENT ELECT:** Tomy Sebastian

**VICE PRESIDENT:** Georges Zissis

**TREASURER:** Corinne Fields

### Members-at-Large

J. Marcos Alonso      David EngAndy Knight

Chiara Boccaletti      Gustavo Ramos Lopez

Aldo Boglietti      Tamas Ruzsanyi

Ayman EL-Refaie      Srikanth Vasudevan

### Standing Committee Chairs

**CONSTITUTION AND BYLAWS:** Blake Lloyd

**ELECTRONIC COMMUNICATIONS:** Clifton Oertli

**FINANCIAL PLANNING:** Corinne Fields

**INTER-SOCIETY COOPERATION:** Peter Wung

**NOMINATING:** Blake Lloyd

**LONG RANGE PLANNING:** Georges Zissis

### Technical Department Chairs and Operating Department Chairs Others

**All Past Presidents who are members of IEEE**

**IAS Transaction Editor-in-Chief**

**IAS Magazine Editor-in-Chief**

## TECHNICAL DEPARTMENTS

### Manufacturing Systems Development & Applications

#### DEPARTMENT OFFICERS

**CHAIR:** Mohammad Uddin . . . . . muddin@lakeheadu.ca

**VICE CHAIR:** Ahmed Rubaai . . . . . arubaai@howard.edu

**PAST CHAIR:** Don Zinger . . . . . d.zinger@ieee.org

#### TECHNICAL COMMITTEE CHAIRS

**ELECTROSTATIC PROCESSES:** Masaaki Okubo . . . . . mokubo@me.osaku-u.ac.jp

**INDUSTRIAL AUTOMATION & CONTROL:** Babak Nahid-Mobarakeh . . . . . babak.nahid@gmail.com

**INDUSTRIAL LIGHTING & DISPLAYS:** Kayo Suzuki . . . . . kayosz@quartz.ocn.ne.jp



## Process Industries

### DEPARTMENT OFFICERS

**CHAIR: John A. Kay** ..... jakay@ra.rockwell.com

**VICE CHAIR, Papers: H. Landis Floyd, II** ..... H-Landis.Floyd@USA.dupont.com

**PAST CHAIR: Andrew Bagley** .....

### TECHNICAL COMMITTEE CHAIRS

**CEMENT INDUSTRY: Corinne Fields** ..... Corinne.fields@dcsgroup.us

**METAL INDUSTRY: Thomas J. Dionise** ..... tom.dionise@ieee.org

**MINING INDUSTRY: Miguel Reyes** ..... Miguel.reyes@cdc.hhs.gov

**PETROLEUM AND CHEMICAL INDUSTRY: Louis Barrios** ..... louis.barrios@shell.com

**PULP AND PAPER INDUSTRY: Greg Drewiske** ..... Greg.Drewiske@Versoco.com

**ELECTRICAL SAFETY: Stephen Wilson** ..... .sfwilson@ieee.org

## Industrial & Commercial Power Systems

### DEPARTMENT OFFICERS

**CHAIR: Wei-Jen Lee** ..... wlee@uta.edu

**VICE CHAIR, TECHNICAL: Wei-Jen Lee Andrew Hernandez** . . . . . andrew.hernandez@delphi.com

**VICE CHAIR, PAPERS: Rasheek Rifaat** ..... rasheek.rifaat@jacobs.com

**SECRETARY: Massimo Mitolo** ..... mamitolo@engsys.com

**PAST CHAIR: Peter Sutherland** ..... peter.sutherland@ieee.org

### TECHNICAL COMMITTEE CHAIRS

**CODES & STANDARDS: Steve Townsend** ..... steven.townsend@gm.com

**ENERGY SYSTEMS: Joe Weber** ..... Joe.Weber@emerson.com

**POWER SYSTEMS ENGINEERING: Kent Saylor** ..... kent.saylor@p2seng.com

**POWER SYSTEM PROTECTION: Rob Hoerauf** ..... robhoerauf@earthlink.net

**RURAL ELECTRIC POWER: Chris Brooks** ..... Brooks2002@hotmail.com

## Industrial Power Conversion Systems

### DEPARTMENT OFFICERS

**CHAIR: Po-tai Cheng** ..... .ptcheng@ieee.org

**VICE CHAIR, PAPERS:** .....

**PAST CHAIR: Avoki M. Omekanda** ..... avoki.omekanda@gm.com

### TECHNICAL COMMITTEE CHAIRS

**ELECTRIC MACHINES: Andy Knight** ..... andyknight@ieee.org

**INDUSTRIAL DRIVES: Michael Harke** ..... mcharke@ieee.org

**INDUSTRIAL POWER CONVERTER: Pericle Zanchetta** . . . . . Pericle.Zanchetta@nottingham.ac.uk

**POWER ELECTRONICS DEVICES & COMPONENTS:**

**Shashank Krishnamurthy** ..... .shashank.km@gmail.com

**TRANSPORTATION SYSTEMS COMMITTEE: David Dorrell** ..... .Dorrelld@ukzn.ac.za

## OPERATING DEPARTMENTS

### Awards

**CHAIR: Mohammad S. Islam** ..... mohammad.islam@nexteer.com

#### COMMITTEE CHAIRS

**AWARD NOMINATIONS: Kouki Matsuse** ..... matsuse@isc.meiji.ac.jp

**OUTSTANDING ACHIEVEMENT AWARD: Tomy Sebastian** ..... tomy.sebastian@nexteer.com

**DISTINGUISHED SERVICE AWARD: Robert D. Lorenz** ..... lorenz@enr.wisc.edu

**OUTSTANDING YOUNG MEMBER AWARD: Iqbal Husain** ..... ihusain2@ncsu.edu

**FELLOWS REVIEW: Thomas A. Nondahl** ..... t.nondahl@ieee.org

### CMD

**CHAIR: Peter Magyar** ..... peter.magyar@ieee.org

#### COMMITTEE CHAIRS

##### CHAPTER AND MEMBER AWARDS AND CONTESTS COMMITTEE

**Lesley Ann Arakkal** ..... lesley.arakkal.za@ieee.org

##### CHAPTER DEVELOPMENT COMMITTEE

**Srikanth Vasudevan** ..... srikanthvasudev@ieee.org

##### CHAPTER AND MEMBER PROMOTION AND SUPPORT COMMITTEE

**Christina-P. Malliou** ..... christina.p.malliou@ieee.org

##### EVENT ORGANIZATION COMMITTEE

**Aristotelis Farmakis** ..... aristotelis.farmakis.gr@ieee.org

##### MEMBERSHIP DEVELOPMENT COMMITTEE

**Megha Tak** ..... meghatak7@gmail.com

##### TRAVEL AWARDS COMMITTEE

**Beáta Polgári** ..... BEATA.POLGARI@IEEE.ORG

##### ZUCKER PLANNING AND OPERATION COMMITTEE

**Mark Halpin** ..... halpism@auburn.edu

##### GRADUATE STUDENT THESIS CONTEST COMMITTEE

**Yao Yingbei** ..... yao\_yb@foxmail.com

#### CHAPTERS AREA CHAIRS

**R1: Hazem A Huss** ..... h.huss@ieee.org

**R2: Andrew M. Novotny** ..... andrewnovotny@ieee.org

**R3: Osama A. Mohammed** ..... o.mohammed@ieee.org

**R4: Gary M. Waugh** ..... gwaugh@accesstoleado.com

**R5: Sunita Kulkarni** ..... sunita.kulkarni10@hotmail.com

**R6: David Eng** ..... engdd412@ieee.org

**R7: Blake Lloyd** ..... blakelloyd@ieee.org

**R8: Igor Kuzletigor** ..... kuzle@fer.hr

**R9: Jose E. Correa** ..... jrcorrea@ieee.org

**R10 EAST AND SOUTHEAST ASIA AND PACIFIC: Darmawan Soetanto** ..... soetanto@uow.edu.au

**R10 SOUTH ASIA: Subrata Mukhopadhyay** ..... subrata@ieee.org

## SB CHAPTERS AREA CHAIRS

R1-3: Ziqiao Liu	ziqiao.liu.2014@ieee.org
R4-5: Xin Wang	xin.wang70@mavs.uta.edu
R6 - Vahid Salehi Pour	
R7: Sanjida Moury	sanjida@cse.yorku.ca
R8 EUROPE: Yanni Zhong	vsalehi@ieee.org
R8 MIDDLE EAST & AFRICA: Habib M. Kammoun	habib.kammoun@ieee.org
R9 MEXICO: Jorge Ramos-Ruiz	jorge.a.2014@ieee.org
R9 CENTRAL AMERICA: Julio Alexander Garcia Maison	jag_maison@ieee.org
R9 SOUTH AMERICA: José Duran	joseduran@ieee.org
R10 EAST ASIA: Gan Zhang	zhanggan0316@126.com
R10 SOUTH ASIA: Srikanth Vasudevan P	srikanthvasudev@ieee.org
R10 SOUTHEAST ASIA: Jayantika Soni	jayantika.soni@u.nus.edu

## Education

CHAIR: Iqbal Husain

### COMMITTEE CHAIRS

#### WEBINAR COMMITTEE

Bruno Lequesne Bruno.lequesne@ieee.org

#### TUTORIAL COMMITTEE

J. Marcos Alonso marcos@ieee.org

### MEETINGS

CHAIR: R. Mark Nelms m.nelms@ieee.org

#### COORDINATOR OF THE MIDDLE AND EAST EUROPEAN CONFERENCES:

Tamas Ruzsanyi .tamas.ruzsanyi@ieee.org

### ANNUAL MEETING GENERAL CHAIRS

2016: Tomy Sebastian: Portland, Oregon, USA .t.sebastian@ieee.org

2017: Georges Zissis, Cleveland, Ohio, USA .georges.zissis@laplace.univ-tlse.fr

2017: Georges Zissis, TBD .georges.zissis@laplace.univ-tlse.fr

## Publications

CHAIR: Ahmed Rubaai .arubaai@howard.edu

### COMMITTEE CHAIRS

TRANSACTIONS COMMITTEE: Ahmed Rubaai .arubaai@howard.edu

MAGAZINE COMMITTEE: Ahmed Rubaai .arubaai@howard.edu

PROCEEDINGS: Barry C. Brusso b.brusso@ieee.org

TRANSACTIONS EDITOR: Thomas A. Nondahl .t.nondahl@ieee.org

IAS MAGAZINE EDITOR: H. Landis Floyd h.landis.floyd@gmail.com

SCHOLARONE MANUSCRIPTS ADMIN: Louie Powell .louie.powell@ieee.org

## Standards

CHAIR: S. Mark Halpin halpin@eng.auburn.edu

### COMMITTEE CHAIRS

AWARDS: Position vacant



# IEEE INDUSTRY APPLICATION SOCIETY TECHNICAL COMMITTEES

The technical work of the Industry Application Society takes place within its Technical Committees. For administrative convenience, the committees are organized into four Operating Departments. IAS sponsors several Technical Conferences each year. The information below will help you understand the interests of these committees, identify the IAS Technical Conferences in which the committees participate, and provide e-mail contact information for current (2015) leadership. In addition to the specific IA Conferences identified below, each year IAS has co-sponsorship arrangements with a number of non-IEEE conferences outside North America.

## MANUFACTURING SYSTEMS DEVELOPMENT & APPLICATIONS DEPARTMENT

**CHAIR: Mohammad Uddin, [muddin@lakeheadu.ca](mailto:muddin@lakeheadu.ca)**

**VC-PAPERS: Ahmed Rubaai, [arubaai@Howard.edu](mailto:arubaai@Howard.edu)**

### Electrostatic Processes Committee

The Electrostatic Processes Committee is responsible for all matters within the scope of the IAS in which the emphasis or dominant factor specifically relates to the utilization and/or control of electrostatic phenomena. Every third year, the committee holds technical sessions in conjunction with the Electrostatics Society of America (ESA). When not collocating with ESA, the committee participates in the IAS Annual Meeting.

**CHAIR: Masaaki Okubo, [mokubo@me.osaku-u.ac.jp](mailto:mokubo@me.osaku-u.ac.jp)**

**PAPERS REVIEW CHAIR: Shesha Jayaram, [jayaram@uwaterloo.ca](mailto:jayaram@uwaterloo.ca)**

### Industrial Automation and Control Committee

The Industrial Automation & Control Committee is responsible for all matters within the scope of the IAS in which the emphasis or dominant factor specifically relates to the applications of industrial electrical and electronic control devices, systems, and methods to the conversion, regulation and utilization of electricity for the control of industrial processes, machinery and heating. IACC participates in the IAS Annual Meeting.

**CHAIR: Babak Nahid-Mobarakeh, [babak.nahid@gmail.com](mailto:babak.nahid@gmail.com)**

**PAPERS REVIEW CHAIR: Dr. Akshay Kumar Rathore, [askshay.k.rathore@ieee.org](mailto:askshay.k.rathore@ieee.org)**

### Industrial Lighting and Display Committee

The Industrial Lighting and Displays Committee (formerly the Production and Application of Light Committee) is responsible for all matters within the scope of the IAS in which the emphasis or dominant factor specifically relates to light and lighting. This committee holds technical sessions at the IAS Annual Meeting.

**CHAIR: Kayo Suzuki, [kayoszk@quartz.ocn.ne.jp](mailto:kayoszk@quartz.ocn.ne.jp)**

**PAPERS REVIEW CHAIR: Francis Dawson [dawson@ele.utoronto.ca](mailto:dawson@ele.utoronto.ca)**

## INDUSTRIAL POWER CONVERSION SYSTEMS DEPARTMENT

**CHAIR: Po-tai Cheng, ptcheng@ieee.org**

**VC-PAPERS:**

### Electric Machines Committee

The Electric Machines Committee is responsible for all matters within the scope of the IAS in which the emphasis or dominant factor specifically relates to the design, analysis, manufacture, and application of electric machines in industry. This committee participates in the IEEE Energy Conversion Congress and Exposition.

**CHAIR: Andy Knight, andyknight@ieee.org**

**PAPERS REVIEW CHAIR: Andy Knight, andyknight@ieee.org**

### Industrial Drives Committee

The Industrial Drives Committee is responsible for all matters within the scope of the IAS in which the emphasis or dominant factor specifically relates to the suitability and application of electric motor drive equipment to industrial machinery and vice versa. IDC participates in the IEEE Energy Conversion Congress and Exposition.

**CHAIR: Michael Harke, mcharke@ieee.org**

**PAPERS REVIEW CHAIR: Fernando Briz, gernando@hecate.edu.uniovi.es**

### Industrial Power Converter Committee

The Industrial Power Converter Committee is responsible for all matters within the scope of the IAS in which the emphasis or dominant factor specifically relates to equipment and circuits for the static conversion of electric power in industry. The committee participates in the IEEE Energy Conversion Congress and Exposition.

**CHAIR: Pericle Zanchetta, Pericle.Zanchetta@nottingham.ac.uk**

**PAPERS REVIEW CHAIR: Leon Tolbert, tolbert@utk.edu**

### Power & Electronics Devices & Components Committee

The Power Electronics Devices and Components Committee is responsible for all matters within the scope of the IAS in which the emphasis or dominant factor specifically relates to power electronics devices and components and their applications. PEDCC participates in the IEEE Energy Conversion Congress and Exposition.

**CHAIR: Shashank Krishnamurthy, shashank.km@gmail.com**

**PAPERS REVIEW CHAIR: Filippo Chimento, filippo.chimento@ieee.com**

### Renewable and Sustainable Energy Conversion Systems Committee

The Renewable and Sustainable Energy Conversion Systems Committee is responsible for all matters within the scope of the IAS in which the emphasis or dominant factor specifically relates to the design, analysis, manufacture and use of electric devices and systems for renewable and sustainable energy conversion industrial applications. This committee participates in the IEEE Energy Conversion Congress and Exposition.

**CHAIR: Yilmaz Sozer, ys@uakron.edu**

**PAPERS REVIEW CHAIR: Yilmaz Sozer, ys@uakron.edu**

## Transportation Systems Committee

The Transportation Systems Committee is responsible for all matters within the scope of the IAS in which the emphasis or dominant factor specifically relates to the electrification of the transportation industry, including components, systems, and infrastructure, and encompassing all modes of transportation for people and goods. This committee participates in the IEEE Energy Conversion Congress and Exposition

**CHAIR: Burak Ozpineci, [burak@ornl.gov](mailto:burak@ornl.gov)**

**PAPERS REVIEW CHAIR: Mohammad Islam, [mohammad.s.islam@ieee.org](mailto:mohammad.s.islam@ieee.org) (transactions)**  
Bulent Sarloglu, [bulent@enr.wisc.edu](mailto:bulent@enr.wisc.edu)

## PROCESS INDUSTRIES DEPARTMENT

**CHAIR: John A, Kay, [jakay@ra.rockwell.com](mailto:jakay@ra.rockwell.com)**

**VC PAPERS: H Landis Floyd [h.l.floyd@ieee.org](mailto:h.l.floyd@ieee.org)**

## Pulp & Paper Industry Committee

The Pulp and Paper Industry Committee is responsible for all matters within the scope of the IAS in which the emphasis or dominant factor specifically relates to the manufacture and fabrication of pulp, paper and wood products. This committee sponsors the annual IEEE Pulp & Paper Industry Technical Conference.

**CHAIR: Greg Drewiske, [Greg.Drewiske@Versoco.com](mailto:Greg.Drewiske@Versoco.com)**

**PAPERS REVIEW CHAIR: Chris Heron, [heronc@tecowestinghouse.com](mailto:heronc@tecowestinghouse.com)**

**TECHNICAL: Todd Legette, [Todd.Legette@ipaper.com](mailto:Todd.Legette@ipaper.com)**

## Petroleum & Chemicals Industry Committee

The Petroleum and Chemical Industry Committee is responsible for all matters within the scope of the IAS in which the emphasis or dominant factor specifically relates to production, manufacturing, and transportation of petroleum and chemical products. This committee sponsors two annual conferences in North America, the IEEE Petroleum & Chemical Industry Technical Conference and related conferences in Europe, Asia and Brazil.

**CHAIR: Louis Barrios, [louis.barrios@shell.com](mailto:louis.barrios@shell.com)**

**PAPERS REVIEW CHAIR: David Stewart, [David.Stewart@wsnelson.com](mailto:David.Stewart@wsnelson.com)**

## Cement Industry Committee

The Cement Industry Committee is responsible for all matters within the scope of the IAS in which the emphasis or dominant factor specifically relates to the manufacture of cement. This committee is associated with the Portland Cement Association in sponsoring the annual IEEE/PCA Cement Industry Technical Conference.

**CHAIR: Corinne Fields, [Corinne.fields@dcsgroup.us](mailto:Corinne.fields@dcsgroup.us)**

**PAPERS REVIEW CHAIR: Richard Schmidt, [blackbird71@comcast.net](mailto:blackbird71@comcast.net)**

## Mining Industry Committee

The Mining Industry Committee is responsible for all matters within the scope of the IAS in which the emphasis or dominant factor specifically relates to all mining and related operations. It holds technical sessions at the IAS Annual Meeting.

**CHAIR: Miguel Reyes, [cln4@cdc.gov](mailto:cln4@cdc.gov)**

**PAPERS REVIEW CHAIR: Joseph Sottile, Jr., [jsottile@ieee.org](mailto:jsottile@ieee.org)**

## Metal Industry Committee

The Metal Industry Committee is responsible for all matters within the scope of the IAS in which the emphasis or dominant factor specifically relates to the making, shaping, or treating of metals. Specific areas of interest at related to metals include automation & control, drives, power & distribution, rotary equipment, power quality and gauging and signal processing Metal Industry Committee technical sessions and the annual committee meeting are held at the IAS Annual Meeting.

**CHAIR: Thomas Dionise, [tom.dionise@ieee.org](mailto:tom.dionise@ieee.org)**

**PAPERS REVIEW CHAIR: Juan Lopera, [lopera@uniovi.es](mailto:lopera@uniovi.es)**

## Electrical Safety Committee

The IAS Electrical Safety Committee is responsible for treatment of all matters within the scope of the IAS in which the emphasis or dominant factor specifically relates to the hazards of electricity and the prevention of injury to individuals from electrical equipment and electrical energy. The Electrical Safety Committee organizes the annual Electrical Safety Workshop.

**CHAIR: Stephen Wilson, [sfwilson@ieee.org](mailto:sfwilson@ieee.org)**

**VICE-CHAIR: David Pace, [dapace@olin.com](mailto:dapace@olin.com)**

**PAPERS REVIEW CHAIR: Daniel Doan, [doan@ieee.org](mailto:doan@ieee.org)**

## INDUSTRIAL & COMMERCIAL POWER SYSTEMS DEPARTMENT

**CHAIR: Wei-Jen Lee, [wlee@uta.edu](mailto:wlee@uta.edu)**

**VC-TECHNICAL: Andrew Hernandez, [Andrew.Hernandez@astrazeneca.com](mailto:Andrew.Hernandez@astrazeneca.com)**

**VC-PAPERS: Rasheek Rifaat, [Rasheek.Rifaat@jacobs.com](mailto:Rasheek.Rifaat@jacobs.com)**

## Power System Engineering Committee

The Power Systems Engineering Committee is responsible for the treatment of all matters within the scope of the IAS in which the emphasis or dominant factor specifically relates to the design, equipment application, analysis, installation, grounding, operation, and maintenance of safe and reliable power systems, including emergency and standby systems for industrial, commercial, and institutional facilities. Its technical sessions take place at the IEEE Industrial & Commercial Power Systems Technical Conference and the IAS Annual Meeting.

**CHAIR: Kent Saylor, [kent.saylor@p2seng.com](mailto:kent.saylor@p2seng.com)**

**PAPERS REVIEW CHAIR: Sergio Panetta, [spanetta@i-gard.com](mailto:spanetta@i-gard.com)**

## Power System Protection Committee

The Power Systems Protection Committee is responsible for all matters within the scope of the IAS in which the emphasis or dominant factor specifically relates to power system protection. Its technical sessions take place at the IEEE Industrial & Commercial Power Systems Technical Conference and the IAS Annual Meeting.

**CHAIR: Rob Hoerauf, [robhoerauf@earthlink.net](mailto:robhoerauf@earthlink.net)**

**PAPERS REVIEW CHAIR: Rob Hoerauf, [robhoerauf@earthlink.net](mailto:robhoerauf@earthlink.net)**

## Codes & Standards Committee

The Codes and Standards Committee is responsible for all matters within the scope of the IAS in which the emphasis or dominant factor specifically relates to electrical codes, rules, guides and standards affecting the design, installation or maintenance of industrial and commercial electrical power systems. Its technical sessions take place at the IEEE Industrial & Commercial Power Systems Technical Conference and the IAS Annual Meeting.

**CHAIR: Steve Townsend, [Steven.Townsend@gm.com](mailto:Steven.Townsend@gm.com)**

**PAPERS REVIEW CHAIR: Steve Townsend, [Steven.Townsend@gm.com](mailto:Steven.Townsend@gm.com)**

## Energy Systems Committee

The scope of the Energy Systems Committee is the treatment of all matters within the scope of the IAS in which the emphasis or dominant factor specifically relates to control, monitoring, and management of electrical energy systems, including power generation systems for use in industrial, commercial, and institutional facilities. Its technical sessions take place at the IEEE Industrial & Commercial Power Systems Technical Conference and the IAS Annual Meeting.

**CHAIR: Joe Weber, [Joe.Weber@emerson.com](mailto:Joe.Weber@emerson.com)**

**PAPERS REVIEW CHAIR: Wei-Jen Lee, [wlee@uta.edu](mailto:wlee@uta.edu)**

## Rural Electric Power Committee

The Rural Electric Power Committee is responsible for all matters within the scope of the IAS in which the emphasis or dominant factor specifically relates to rural requirements especially for agriculture, including rural electric power distribution. This committee sponsors the annual IEEE Rural Electric Power Conference.

**CHAIR: Christopher Brooks, [CBrooks@thinkESC.com](mailto:CBrooks@thinkESC.com)**

**PAPERS REVIEW CHAIR: Paul Mixon, [pmixon@astate.edu](mailto:pmixon@astate.edu)**

**TECHNICAL PROGRAM: Doug Turk, [dougt@deepeast.com](mailto:dougt@deepeast.com)**







# Call for Papers

## 2017 IEEE Industry Applications Annual Meeting

Cincinnati, OH, USA | October 1 – October 5, 2017

[www.ieee.org/ias2017](http://www.ieee.org/ias2017)

The **2017 IEEE Industry Applications Society Annual Meeting** will address the technical interests related to industrial applications of electrical energy. Papers are solicited on this subject, especially papers pertaining to the scope of the participating Technical Committees of the IEEE Industry Applications Society, as listed below. For **papers**, draft manuscripts (NOT abstracts or digests alone) should be submitted by e-mail to the individuals identified below. Proposals for **Tutorials** (which may range from 4 hours to 8 hours) should include a detailed outline as well as a list of presenters and their credentials.

**General Topics** – papers relating to topics of general technical interest in the field of industrial applications and electrical energy not related to a specific technical committee should be sent to Dr. Georges Zisis.

[zisis@laplace.univ-tlse.fr](mailto:zisis@laplace.univ-tlse.fr)

**The Metal Industry Committee** is soliciting papers relating to making, shaping, or treating of metals. Drafts of proposed papers should be sent to Dr. Braz Cardoso.

[braz.cardoso@ieee.org](mailto:braz.cardoso@ieee.org)

**The Power System Engineering Committee** is soliciting papers relating to electrical safety and to design, analysis, maintenance or monitoring of electrical generation or distribution systems in industrial, commercial or institutional facilities. Drafts of proposed papers should be sent to Mr. Sergio Panetta.

[spanetta@i-gard.com](mailto:spanetta@i-gard.com)

**The Industrial Lighting and Display Committee** is soliciting papers relating to light sources and drivers, and display power supplies and more general in lighting system and display technology. Drafts of proposed papers should be sent to Technical Committee Program Chair Prof. Marco A. Dalla Costa.

[marcodc@gedre.ufsm.br](mailto:marcodc@gedre.ufsm.br)

**The Industrial Automation and Control Committee** is seeking papers that address the applications of electrical and electronic control devices, sensors, systems, and methods to the conversion, regulation and utilization of electricity for the control of industrial processes and manufacturing. Drafts of proposed papers should be submitted online at <https://www.openconf.org/ias2017iacc>. Any issues with the online system should be sent to Dr. Babak Nahid-Mobarakeh.

[babak.nahidmobarakeh@univ-lorraine.fr](mailto:babak.nahidmobarakeh@univ-lorraine.fr)

**The Electrostatic Processes Committee** is seeking papers on topics related to fundamentals and industrial applications of electrostatics including but not limited to electrohydrodynamics, electrostatic measurements, computational electrostatics, electrostatic precipitation and separation, coronas and gas discharges, and ESD/EOS. Draft of the proposed manuscripts should be sent to the Technical Committee Program Chair Prof. Masaaki Okubo.

[mokubo@me.osakafu-u.ac.jp](mailto:mokubo@me.osakafu-u.ac.jp)

**The Power System Protection Committee** is soliciting papers relating to the protection of power generation and distribution systems in industrial, commercial or institutional facilities, including both fault protection and surge protection. Drafts of proposed papers should be sent to Mr. Rob Hoerauf.

[robhoerauf@earthlink.net](mailto:robhoerauf@earthlink.net)

The **Energy Systems Committee** is soliciting papers related to energy sources, energy management, system control and related issues in industrial, commercial or institutional facilities. Drafts of proposed papers should be sent to Dr Wei-Jen Lee.

wlee@uta.edu

The **Codes and Standards Committee** is soliciting papers related to electrical codes and standards governing the use of the electrical infrastructure in industrial or commercial facilities. Drafts of proposed papers should be sent to: Mr. Steven Townsend.

steven.townsend@ieee.org

The **Mining Industry Committee** is seeking papers related to electrical applications and operations in mines. Drafts of proposed papers should be sent to Dr. David C Mazur.

dcmazur@ra.rockwell.com

The **TUTORIAL program** is seeking proposals for presentations on topics in the general technical area of industrial applications of electrical energy, please send outlines and presenter details to: Dr. Joe Sottile by **1 May 2017**.

jsottile@ieee.org

## AUTHORS' DEADLINES:

- **1 April 2017:** Submission of full drafts of proposed papers to the respective technical committee identified above.
- **1 June 2017:** Notification of acceptance or rejection by the respective technical committees.
- **1 July 2017:** Authors to receive instructions for submission of final conference manuscripts.
- **1 August 2017:** Deadline for submission of FINAL conference manuscripts to ScholarOne Manuscripts.

## GENERAL REQUIREMENTS:

Authors must submit a draft of the proposed paper for evaluation by the sponsoring Technical Committee. Abstracts or digests alone will not be considered. One author must be designated as the corresponding author, and an e-mail address must be provided for that person. All correspondence will be conducted via e-mail. Authors are responsible for assuring that e-mail sent to the corresponding author will NOT be blocked by a spam filter.

At least one author must register to attend the conference, and pay the full conference registration fee prior to submitting each final manuscript. IEEE student members, IEEE Life Members, and unemployed attendees must select a full conference registration to qualify to submit papers. Authors are limited to submitting no more than four (4) manuscripts against each full registration. Papers in the main technical program will be archived in IEEE Xplore. Papers that are scheduled for presentation but not actually presented will not be archived in Xplore.

Final manuscripts for the Conference Record will be submitted electronically via the IAS ScholarOne Manuscripts site. All papers will be scanned for plagiarism in CrossCheck. The submitting author must execute an IEEE Copyright Transfer at the time of manuscript submission.

All papers sponsored for presentation by the Power System Engineering Power System Protection, Energy Systems, Codes and Standards, and Metals Industry and Mining Industry Committees will be reviewed for possible publication in IEEE Transactions on Industry Application or IEEE Industry Applications Magazine, and authors will receive feedback from this review following the 2017 IAS Annual Meeting.

Authors of papers sponsored for presentation by the Industrial Automation and Control, Electrostatic Processes, and Industrial Lighting and Display Committees may request that their paper(s) be reviewed for publication following presentation at the 2017 IAS Annual Meeting.

Not all IAS Technical Committees hold sessions at the IAS Annual Meeting every year. If a committee is not listed in this call for papers, you should contact the appropriate IAS Technical Committee or Department Chair for more information. The 2017 Energy Conversion Congress and Exposition will take place in Cincinnati at the same time as the IAS Annual Meeting, and there may be additional opportunities to present papers at ECCE.

## STUDENT ACTIVITIES AND PROGRAM:

Students are encouraged to participate in the Annual Meeting, and are welcome to submit papers for the Student Program being organized by the IAS Chapters and Membership Department. It is not necessary or expected that student presentations will be accompanied by formal manuscripts. Student papers are not included in the Annual Meeting Conference Record or archived in Xplore, and are not eligible for publication in IAS Transactions or IAS Magazine.

Zucker Travel Grants are available to provide financial support for selected students attending the Annual Meeting; for further information, visit <http://ias.ieee.org/chapters-membership/chapter-promotion-programs,-awards-and-contests.html>.

## NOTES:

---

---

---

---

---

---

---

---

---

---

---

---

---

---

---

---

---

---

---

---

---

---

---

---

CALL FOR PAPERS

# save the DATE



ANNUAL MEETING 2017



**IAS ANNUAL MEETING**  
**Cincinnati, Ohio**  
October 1-5, 2017