

IEEE Industry Applications Society

Industrial Power Converters Committee (IPCC)

2019 Annual Meeting Minutes

Baltimore Convention Center, Baltimore (MD), USA

October 1st, 2019

INTRODUCTION OF MEMBERS

Dr. Grant Pitel, in the role of IPCC Chair, called the meeting to order at 7:00 PM. He asked the committee members to sign up and also introduced that new members joining the committee can also register online to leave their contact information. Members were asked to introduce themselves.

APPROVAL OF 2018 COMMITTEE MEETING MINUTES AND 2019 COMMITTEE MEETING AGENDA

The approval of the 2018 committee meeting minutes and 2019 committee meeting agenda were moved by Prof. Pericle Zanchetta and seconded by Prof. Po-Tai Cheng. The 2018 committee meeting minutes and 2019 committee meeting agenda were approved by the committee.

OFFICERS REPORT

Role of IPCC within IEEE/IAS

Dr. Grant Pitel introduced that IPCC is a committee within IPCSD dedicated to power conversion. It maintains an active network with volunteers interested in power electronics. IPCC provides inputs and technical committee members to conferences, journals and standards. It also maintains a continuity of organized leadership of 6-year officer tenure rotation. It collects inputs from committee members through meetings and makes recommendations. Meanwhile, it spearheads new initiatives through special committees.

Membership

The membership roster is at 409 at the time of this committee meeting, with 35 new members joining in since the committee meeting in 2018. The detailed records of members have been collected and maintained since 2014. The committee roster is a vital source for forming committees.

Committee for 2019

The current committee officers were introduced to the committee members, which are also listed below. Officers marked with an asterisk indicate that he/she will step out the committee or be elevated to a different position within the committee.

Committee Officers		
Chairman	Grant Pitel	gpitel@magna-power.com
Vice-Chairman	Luca Solero	luca.solero@uniroma3.it
Secretary*	Xiaonan Lu	xiaonan.lu@ieee.org
Past Chairman	Pericle Zanchetta	pericle.zanchetta@nottingham.ac.uk
Industrial Power Converter Subcommittees		
Transactions Review Chair	Pericle Zanchetta	pericle.zanchetta@nottingham.ac.uk
Transactions Review Co-Chair	Stefano Bifaretti	stefano.bifaretti@uniroma2.it
Fellow and Award Nominating Chair	Po-tai Cheng	ptcheng@ieee.org
Standards Chair*	Yuri Khersonsky	ykhersonsky@ieee.org
Special Activity Chair*	Yongsug Suh	ysuh@jbnu.ac.kr
Asian Liaison Officer	Junichi Itoh	itoh@vos.nagaokaut.ac.jp
Asian Liaison Officer*	<i>vacant</i>	
European Liaison Officer	Petar Grbovic	petar.grbovic@gmail.com
European Liaison Officer*	<i>vacant</i>	

IAS Magazine

Dr. Grant Pitel got a request from Barry Brusso, asking for history column guest authors in IEEE-IAS Magazine. Some ideas were provided by IPCC, including:

- A history of computer power needs and the rise of PFC
- A history of electric vehicle battery power and energy density
- A history of grid applications: from individual converters to interconnected converter systems

Further ideas were encouraged during the committee meeting. Interested committee members were asked to contact Dr. Barry Brusso or Dr. Grant Pitel.

Statics of ECCE 2019

The ECCE 2019 conference committee included 4 Technical Program Chairs (TPCs) and 6 Associate TPCs. Meanwhile, there were 22 Vice Chairs (VCs), and half of them were from IAS and the other half were from PELS. IPCC supported ECCE 2019 with three VCs, i.e., Dr. Grant Pitel, Dr. Luca Solero, and Dr. Xiaonan Lu.

The detailed statics on the review process were summarized as:

- 1779 total Submissions
- 1069 technical papers presented
- 15 parallel oral sessions and 28 poster sessions
- 18 presentation-only special sessions

IPCC managed Track E and Track F in ECCE 2019, as detailed below:

Power Converter Topologies (TRACK E)	
Vice Chair: Grant Pitel, Magna Power, United States	Vice Chair: Gerry Moschopoulos, Western University, Canada
Vice Chair: Luca Solero, University ROMA TRE, Italy	
Dong Cao, North Dakota State University, United States	Hidemine Obara, Yokohama National University, Japan
Jorge Garcia, University of Oviedo, Spain	Dongyuan Qiu, South China University of Technology, China
Li Zhang, Huazhong University of Science & Technology, China	Yan Xing, NUAA, China
Sombuddha Chakraborty, Texas Instruments, United States	Jianwu Zeng, Minnesota State University, United States
Jen-Hung (Peter) Huang, National Taiwan Univ. of Sci. and Tech., Taiwan	Wenkang Huang, Infineon Technologies, United States
Diego G. Lamar, University of Oviedo, Spain	Brian Cheng, Texas Instruments, United States
Control, Modeling and Optimization of Power Converters (TRACK F)	
Vice Chair: Khurram Afridi, Cornell University, United States	Vice Chair: Henry Chung, City University of Hong Kong, Hong Kong
Vice Chair: Xiaonan Lu, Temple University, United States	
Carl Ho, University of Manitoba, Canada	Andrea Formentini, University of Nottingham, United Kingdom
Santanu Kapat, IIT Kharagpur, India	Dongsheng Yang, Aalborg University, Denmark
Kyo Beum Lee, Ajou University, Korea	Malik Elbuluk, University of Akron, United States
Hong Li, Beijing Jiaotong University, China	Madhav Manjrekar, University of North Carolina Charlotte, United States
Alessandro Lidozzi, ROMA TRE University, Italy	Dehong (Mark) Xu, Zhejiang University, China
Tomoyuki Mannen, Tokyo University of Science, Japan	Alberto Castellazzi, University of Nottingham, United Kingdom
Vito Giuseppe Monopoli, Politecnico di Bari, Italy	Bilal Akin, University of Texas at Dallas, United States
Rostan Rodrigues, ABB Inc, United States	Faisal Khan, University of Missouri Kansas City, United States

Teuvo Suntio, Tampere University, Finland	Dragan Maksimovic, University of Colorado Boulder, United States
Sheng Zheng, Oak Ridge National Laboratory, United States	David Perreault, MIT, United States
Hanchao Liu, GE Global Research, United States	Juan Rivas Davila, Stanford University, United States
Marcello Pucci, INM-CNR, Italy	Elisabetta Tedeschi, Norwegian Univ. of Sci. Tech. (NTNU), Norway
Hong Li, Beijing Jiaotong University, China	Ali Khajehoddin, University of Alberta, United States
Shuo Wang, University of Florida, United States	

REPORTS FROM SUBCOMMITTEES

IEEE Transactions on Industry Applications – IPCC

Dr. Pericle Zanchetta, IPCC Transaction Chair, introduced the activities of IPCC in IAS Transactions. He recognized the efforts of Associate Editors (AEs) processing the transaction papers for the IPCC. The current AEs are:

Mahshid Amirabadi, USA	Xiongfeng Wang, Denmark
Vivek Agarwal, India	Zhiqiang Wang, USA
Stefano Bifaretti, Italy	Junming Zhang, China
Huang-Jen Chiu, Taiwan	Maurizio Cirrincione, Fiji
Dong Jiang, China	Andrea Formentini, UK
Surin Khomfoi, Thailand	Vito Giuseppe Monopoli, Italy
Xiaonan Lu, USA	Babak Parkhideh, USA
Ke Ma, China	Jiangbiao He, USA
Santanu Mishra, India	Liang Du, USA
Marcello Pucci, Italy	Xibo Yuan, UK
Luca Solero, Italy	Dong Dong, USA
Xue She, USA	Zheyu Zhang, USA
Yongsug Suh, Korea	

Dr. Pericle Zanchetta mentioned that the papers submitted to IPCC must be presented first at an IAS-sponsored conference within the last 12 months. An email request should be sent to pericle.zanchetta@nottingham.ac.uk with paper title, list of authors, contact information of the corresponding author, conference and date when paper was presented. An email from S1M with submission instructions will be sent for uploading the paper for transaction review.

It is required that the transaction paper submitted to TIA-IPCC must reference the corresponding conference version of the journal paper. Meanwhile, new content should be

added to the conference version when being submitted to TIA-IPCC. There is no fixed amount of difference, and it is at the discretion of the transaction chair to determine if the differences between the conference and journal versions are sufficient.

IPCC has the second largest number of submissions among IAS committees. The total regular papers processed by IPCC was 1374 so far, and in the past 12 months there were totally 155 regular papers processed by IPCC. Furthermore, for IPCC in 2018, 111 special issue papers were processed in total.

For IPCC, the decision for 1st submission was 79 days, which was 65 days in 2018. Meanwhile, the acceptance rate in the past 12 months was 57.42%, which was slightly higher than the average (58.33%) among all the committees in IAS. In terms of geographic distribution of the submissions, the major submissions came from India (26%), along with China as the country with the second largest percentage of submissions (12%).

In addition to the regular papers, there are two special issues organized by TIA-IPCC, including:

- Special Issue on Grid-Connected Power Electronics Systems: Stability, Power Quality, and Protection (Sep/Oct 2018). Submitted 104 papers and accepted 50 papers
- Special Issue on High Performance Power Electronic Converters: Topologies, Control, and Devices (Nov/Dec 2019). Submitted 78 papers and accepted 44 papers

Dr. Pericle Zanchetta introduced that there is a new journal recently released, i.e., IEEE Open Journal of Industry Applications. This is a web-only journal and there is no conference requirement associated. All the papers published in this new journal will be open-access. The scope of the journal covers the entire scope of IAS, and it features fast response time. The goal is to have papers on IEEEExplore with 7-8 weeks from submission date. The reason of launching this new open-access journal is in response to EU ‘Plan S’ and the mandates from other funding agencies. The new open-access journal could potentially bring IAS to a wider audience group globally. It was noted that there is an Article Processing Charge (APC) associated with papers accepted in this new open-access journal. The standard IEEE APC of this journal is \$1,750 USD. IEEE members can get a 5% discount and IAS members get a 15% discount, which results in an APC of \$1487.50 per paper. Meanwhile, there is no additional page charges for overlength papers. The steering committee of this open-access journal includes Prof. Andy Knight (Publications Department Chair, IEEE IAS), Prof. Pericle Zanchetta (Editor-in-Chief), Prof. Luca Solero (Deputy Editor-in-Chief), Prof. Fernando Briz, and Prof. Jean Luc Schanen. The editorial board members so far include:

Prof. Pericle Zanchetta	University of Nottingham, UK (Editor in Chief)
Prof. Luca Solero	Università Roma Tre, Italy (Deputy Editor in Chief)
Dr. Emmanuel Agamloh	Baylor University, USA
Prof. Fernando Briz	Universidad de Oviedo, Spain

Prof. Chiara Boccaletti	Sapienza Università di Roma, Italy
Dr. Shafiq Odahno	University of Nottingham, UK
Dr. Giovanna Oriti	Naval Postgraduate School, USA
Prof. Jean Luc Schanen	Grenoble Institute of Technology, France

For next steps, the new open-access journal needs editors from IACC, MSDAD and I&CPSD. The manuscript central is open at mc.manuscriptcentral.com/oj-ia

Fellow and Awards Nominations

Dr. Po-tai Cheng introduced the activities of IPCC Fellow and Awards Committee. The award details along with deadlines were introduced and summarized below:

- Andrew W. Smith Outstanding Young Member Achievement Award (March 15)
- Outstanding Young Member Service Award (March 15)
- Distinguished Service Award (March 15)
- Outstanding Achievement Award (March 15)
- Kliman Award (June 1)

Dr. Po-Tai Cheng also introduced the IAS Distinguished Lecturers and IEEE Fellows, which are summarized below. He recommended the committee members to nominate candidates who were suitable for these awards and recognition.

- IAS Distinguished Lecturers (March 31)
- IEEE Fellow (March 1)

Dr. Po-Tai Cheng specially expressed the congratulations to: 1) Kouki Matsuse, an IPCC Member, for being awarded the IEEE Richard Harold Kaufmann Award, and 2) Jiangbiao He, an IPCC Member, for being awarded the IAS AWS Outstanding Young Member Achievement Award. Meanwhile, the following IPCC members were elevated to the IEEE Fellow grade, Class of 2019, including Dr. Justin Radu Bojoi, Dr. Jinjun Liu, Dr. Pericle Zanchetta, and Dr. Richard Zhang.

Standards Committee

Dr. Yuri Khersonsky, as the Standards Chair, were not able to present in the committee meeting. The IPCC Chair Dr. Grant Pitel introduced the activities of standard subcommittee on behalf of him, including IEEE 1709-2018 recommended practice for 1 kV to 35 kV medium-voltage DC power systems on ships and the revision of IEEE 1826-2012 standard for power electronics open system interfaces in zonal electrical distribution systems rated above 100 kW.

Special Activities

Dr. Yongsug Suh, as the Special Activities Chair, introduced the status of special activities of IPCC. The main purpose of the special activities in IPCC is to enhance the collaboration

between IPCC and regional power electronics societies all over the world. The strategy is to boost the participation of IPCC members in ECCE Asia and ECCE Europe. The recent actions include:

- Supported to the technical co-sponsorship of IAS to ECCE Europe
- Had IAS IPCSD & KIPE (Korea) collaboration meeting during ICPE 2019 –ECCE Asia (Busan, Korea / May 27-30, 2019)
- Nominated IPCC members for technical programs of ICPE 2019 –ECCE Asia (Korea)
- Continued to promote the participation of IPCC members in ECCE Asia and ECCE Europe conferences (IPEMC 2020, ECCE Asia 2021, IPEC 2022, ECCE Europe 2020, ECCE Europe 2021, and ECCE Europe 2022)

OLD BUSINESS

IPCC members were recommended to APEC 2019 conference committee. Some members received reviewer invitations. Further involvement is expected with discussion with APEC conference organizing committee.

It was the motion approved in the 2018 IPCC committee meeting to reduce the paper acceptance rate of ECCE to 50%. IPCC has influence over track chair nominations and final decisions on marginal papers. IPCC informed their track chairs of the 50% target acceptance rate. No hard limit of paper acceptance rate was imposed.

Dr. Grant Pitel proposed to amend the motion to have a paper acceptance rate of ECCE as $55\pm 5\%$ and apply it only to Tracks E and F, which are the tracks IPCC has direct influence. Comparing the statistics of ECCE 2018 and ECCE 2019, the acceptance rate in Track E and F were slightly reduced. For Track E, the acceptance rate was reduced from 58.2% to 58%, and for Track F, the acceptance rate was reduced from 65.3% to 61.9%. After an open discussion, the committee agreed to target the paper acceptance rate of ECCE to less than 60% applicable to Tracks E and F.

NEW BUSINESS

Dr. Grant Pitel called for volunteers and nominations for the 2nd Asian and European Liaison Officers and the Standards Chair.

Meanwhile, Dr. Yongsug Suh was nominated as the new secretary of IPCC. The motion of appointing Dr. Yongsug Suh as the new secretary of IPCC was moved by Dr. Po-Tai Cheng and seconded by Dr. Pericle Zanchetta. The committee approved the new appointment of Prof. Yongsug Suh.

IPCC PRIZE PAPER AWARDS

Dr. Pericle Zanchetta introduced the status of IPCC prize paper awards. For the year of 2019, the prize paper selection was managed by the IPCC Paper Award Committee with the members below:

Stefano Bifaretti, Transaction co-Chair, University of Rome Tor Vergata, Italy

Babak Parkhideh, University of North Carolina , USA

Dong Jiang, Huazhong University of Science and Technology, China

Jiangbiao He, GE Global Research, USA

Marcello Pucci, Institute of Marine Engineering, Italy

Maurizio Cirrincione, University of the South Pacific, Fiji

Liang Du, Temple University, USA

Xiaonan Lu, Temple University, USA

Xu She, United Technologies Corporation, USA

Yongsug Suh, Chonbuk National University, Korea

The top 3 papers were selected, as listed below.

First IPCC Prize Paper Award

AC Voltage Sensorless Method with Bumpless Start for Current-Controlled Converters Connected to Microgrids

Authors: Diego Perez-Estevez, Jesus Doval-Gandoy

Second IPCC Prize Paper Award

Effects of Electrical Ageing on Winding Insulation in High-Speed Motors: Analysis and Modelling

Authors: Riccardo Leuzzi, Vito Giuseppe Monopoli, Luca Rovere, Francesco Cupertino, Pericle Zanchetta

Third IPCC Prize Paper Award

Optimization Platform to Find a Switching Pattern of Digital Active Gate Drive for Full-Bridge Inverter Circuit

Authors: Yu Shan Cheng, TomoyukiMannen, KeijiWada, KoutaroMiyazaki, Makoto Takamiya, TakayasuSakurai

IAS - PELS SPONSORED 2019 CONFERENCES

The committee was informed about upcoming IAS sponsored conferences by the Chair Dr. Grant Pitel:

- 2020 IEEE Power and Energy Conference at Illinois (PECI), Champaign, IL, USA
- 2020 IEEE Texas Power and Energy Conference (TPEC), College Station, TX, USA
- 2020 IEEE Kansas Power and Energy Conference (KPEC), Manhattan, KS USA

- 2020 International Conference on Electrical Machines and Systems (ICEMS), Hamamatsu, Japan
- 2020 International Symposium INFOETH, Jahorina, Russia
- 2020 International Workshop on Electric Drives (IWED), Moscow Ru, Russia
- 2020 International Conference on Power Electronics, Machines, and Drives (PEMD), Nottingham, UK
- 2020 Industrial Engineering, Applications, and Manufacturing (ICIEAM), Sochi, Russia
- 2020 International Conference on Smart Energy and Technologies (SEST), Istanbul, Turkey
- 2020 IEEE 9th International Power Electronics and Motion Control Conference (IPEMC 2020 -ECCE Asia), Nanjing, China
- 2020 IEEE Applied Power Electronics Conference (APEC), New Orleans, LA, USA
- 2020 IEEE Energy Conversion Congress and Exposition (ECCE), Detroit, MI, USA

PLANNING OF ECCE 2020

Dr. Grant Pitel asked the audience to submit their business cards for candidate topic chairs and session chairs. Candidates' names and emails will be collected for ECCE 2020. Meanwhile, tutorial and special session suggestions and proposals for ECCE 2020 were asked to be submitted to the committee chair (gpitel@magna-power.com) by November 15th, 2019.

ADJOURN

The meeting was adjourned.

Grant Pitel, Chair

Luca Solero, Vice-Chair

Xiaonan Lu, Secretary

Pericle Zanchetta, Past-Chair

MEMBERS IN ATTENDANCE

*Amerise, Albine

*Kusaka, Keisuke

*Pulvirenti, Mario

*Banerjee, Arijit
Bifaretti, Stefano
Cao, Dong
Cheng, Po-Tai
*Damiano, Alfonso
*De Freitas, Nayara
di Benedetto,
*Fernandez, Pablo Garcia
Grbovic, Petar
Guenther, Robert N.
Itoh, Junichi
Jiang, Dong
Krein, Philip

*Lee, Tzung-Lin
Lidozzi, Alessandro
Lu, Xiaonan
*Mannen, Tomoyuki
*Michele, Mengoni
*Monge, Mauro
Monopoli, Vito G.
*Obara, Hidemine
Odhano, Shafiq
Peterson, Bill
Pitel, Grant
Pitel, Ira J.
Prasad, Rashmi

*Raciti, Angelo
*Rizzoli, Gabriele
*Rosso, Roberto
Scelba, Giacomo
Skorek, Adam
Solero, Luca
Su, Gui-Jia
Tolbert, Leon M.
*Yang, Xiaofeng
Zanchetta, Pericle
Zarri, Luca
*Zheng, Sheng

Note: New members for 2019 who attended this committee meeting are denoted using an asterisk.