

## IEEE IAS Industrial Drives Committee Minutes of the 2020 Annual Committee Meeting

Virtual Meeting  
Detroit, MI, USA  
Friday, October 16, 2020, 10:00 am – 11:30 am, EST

The following committee officers were present:  
Mahesh Swamy, Chair of the IAS Industrial Drives Committee (IDC)  
Luca Zarri, IDC Vice-chair Papers  
Jul-Ki Seok, IDC Vice-chair Programs  
Kevin Lee, IDC Secretary  
Fernando Briz, Past Chair IDC

### 1. Introduction of members and recognition of IEEE Fellows

- a. Due to limited online time, the present IDC members were not introduced this year.
- b. IEEE Fellows were recognized.

The number of attendees were about 69. Thirty-six (36) members signed in as panelists and thirty-three (33) members logged in as attendees. The total number of IDC members is 479.

### 2. Old business/reports

- a. Approval of the 2019 meeting minutes.

The approval of the meeting minutes was moved by Mahesh Swamy, seconded by Fabio Giulii Capponi, and unanimously approved.

- b. Review Report by the Vice Chair for Papers

Luca Zarri presented the vice-chair papers report summarizing the statistics of the papers submitted to the IDC for publication in IEEE Transactions on Industry Applications.

#### ■ Total Number of Papers Submitted

About 64 original papers had been submitted for review during the past 10 months.

#### ■ Papers Received based on Country of Origin

According to the submission statistics, the submitting countries were China (14 papers), India (13 papers), United Kingdom of Great Britain and Northern Ireland (7 papers), Italy and USA (5 papers each), Germany and Spain (4 papers each), Japan (3 papers), followed by many others (in total, 18 countries from all over the world).

■ **Accept/Reject Ratio**

The acceptance ratio is 36% during the past 12 months and the median time taken from submission to the final decision is 85 days during the past 12 months.

■ **Papers Accepted based on Country of Origin**

The paper acceptance rates vs. countries of origin are: China-31%, United Kingdom of Great Britain and Northern Ireland-23%, Italy-15%, USA/Spain/Japan-8%, and India-7%.

■ **Papers Submitted from Conferences Originally Presented**

There are 11 papers from ICEMS 2019, 10 papers each from ECCE 2019 and IEMDC 2019, followed by 1-3 papers each from other 21 conferences.

c. Review Report by the Vice-Chair for Programs

Jul-Ki Seok presented the vice-chair programs report on the results at ECCE 2020.

■ **Topic Chairs**

19 Topic Chairs, who had managed the review process, were Bilal Akin, David D. Reigosa, Di Pan, Giacomo Scelba, Hassan H. Eldeeb, Juan M. Guerrero, Liu Jingbo, Marko Hinkkanen, Mario Pulvirenti, Michael Harke, Michele Mengoni, Mirafzal Behrooz, Pescetto Paolo, Prerit Pramod, Pucci Marcello, Roberto Petrella, Raja Ramakrishnan, Sandro Rubino, and Shafiq Ahmed Odhano.

■ **Session Chairs**

15 Session Chairs served at ECCE2020: Andrea Cavagnino, Antonio J. Marques Cardoso, Bilal Akin, David Diaz Reigosa, Francisco Paz, Giacomo Scelba, Jul-Ki Seok, Kevin Lee, Luca Zarri, Mahesh Swamy, Mario Pulvirenti, Mirafzal Behrooz, Paolo Pescetto, Prerit Pramod, and Thomas Wolbank.

Jul-Ki Seok thanked Topic Chairs and Session Chairs for their contribution.

■ **IDC Papers Submission Statistics**

A total of 164 papers had been received under Electric Drives (15 sub-tracks) as compared to 171 papers in 2019. Control of electric drives had the highest submission number of 33. There are an overall 1683 ECCE papers submitted from 70 countries, as compared to 1779 in 2019.

The acceptance ratio is 59.7% for 98 originally accepted papers, with 58 papers distributed into 14 oral sessions, and 33 papers assigned to 3 poster sessions. The average number of reviews per paper was around 4.2. Two memorial sessions honoring Prof. Tom Lipo (Mon.-Tue.) were conducted.

The submitted digests distribution by country based on the first author placed USA first (47) and China second (28), followed by UK (15), Korea (13), Italy (10), Canada (8), Japan (7), Germany (7) and other countries.

About 48 percent of the accepted papers come from USA (30) and China (14), followed by UK (9), Korea (7), Japan (6), Italy (5), and Canada (5).

The number of student papers in 2020 is 91 as compared to 80 in 2019, 107 in 2018, and 50 in 2017. While the student papers are trending upwards, the papers from industry in 2020 declined to 17 in three consecutive years as compared to 24 in 2019, 32 in 2018 and 13 in 2017.

d. IDC Standards Activity Update by the Subcommittee Chair

Kevin Lee presented IEEE IAS IDC standards subcommittee structure with three layers:

1. IAS level; 2. Industrial Power Conversion System Department (IPSCD) level; 3. IDC level.

The Subcommittee has a monthly conference call to discuss raised issues since 2018.

■ Mission Statement of IDC Standards Sub-Committee

1. The goal of the Standards Sub-committee of the IEEE Industrial Drives group is to participate in the development of Standards and/or Practices pertaining to electric drive systems. Electric drive systems include but are not limited to all types of electrical motors and drives that are used for controlling torque and speed of said electrical motors.
2. Participation is not limited to co-operating with other Standards groups or organizations within the IEEE and/or other technical bodies of the world but also includes taking a leading role in formulating new standards to facilitate meaningful applications of said standards in the industrial and commercial workplace.

■ IEEE Standards Development Lifecycle include:

1. Initiating the project;
2. Mobilizing the working group;
3. Drafting the standard;
4. Balloting the standard;
5. Gaining final approval;
6. Maintaining the standards.

■ IEEE Classifications of Standards include:

1. Standards: documents with mandatory requirements;
2. Recommended practices: documents in which procedures and positions preferred by the IEEE are presented;
3. Guides: documents in which alternative approaches to good practice are suggested but no clear-cut recommendations are made;
4. Trial-Use documents: publications in effect for not more than three years.

■ Approval Status of First IDC Standards Subcommittee Working Group Project:

1. Project Title: P2943-Energy Efficiency Test Methods for Three-Phase Variable Frequency Drive Systems;

2. Scope Statement: This standard defines a common test protocol for determination of energy efficiency for motor drive systems, for an AC motor and a combination of a Variable Frequency Drive (VFD), AC motor, and ancillary equipment. Performance classifications for the said motor drive systems are also defined;
3. Project Status: On September 24, 2020, the IEEE SA Standards Board approved the project;
4. Project Timing: Until December 31, 2024.

■ Subcommittee Working Group Members include:

Eric Armando, Politecnico di Torino, Italy  
Joseba Arza, Ingeteam Group, Spain  
Raymond Drohan, Schneider Electric, USA  
Hassan H. Eldeeb, FIU, USA  
Jiangbiao He, University of Kentucky, USA  
Jiangang Hu, Rockwell, USA  
Stephen Hu, Delta Electronics, Taiwan  
Henri Kinnunen, ABB, Finland  
Tanuj Khandelwal, ETAP, USA  
Fang Luo, Stony Brook University, USA  
Kevin Lee (Chair), Eaton, USA  
Di Pan, GE Global Research, USA  
Patty Polpattana, AECOM, USA  
Luis Rodriguez: BCM INGENIERÍA, C.A., Venezuela  
Mahesh Swamy, Milwaukee Tool, USA  
Pinjia Zhang, Tsinghua University, China  
Yue Zhao, University of Arkansas, USA  
Zheyu Zhang, Clemson University, USA

Kevin Lee thanked working group members for their contribution, and welcomed new volunteers who would like to participate in the Standards Subcommittee.

### 3. Awards and Recognitions

a. Conference awards

Prof. Fabio Giulii Capponi, University of Rome “La Sapienza”, presented the conference awards.

The members of the Awards Subcommittee include:

Fabio Giulii Capponi (Chair),	Sapienza - University of Rome
Richard Lukaszewski,	Rockwell Automation
Ion Boldea,	University Politehnica Timisoara
Jun Koo Kang,	LG Electronics
Marko Hinkkanen,	Aalto University

Procedure for Selecting Transaction Paper Nomination:

- All IDC papers published in Trans. on Industry Applications during 2019 were considered (49 papers).
- Review process
  - o AEs carried out a prescreening of the eligible papers and selected 9 of them to be evaluated by the Awards Subcommittee.
- Six criteria: Readability, Use of Figures and Graphics, Education, Broad Interest, Significance, Impact.
  - o Each criterion is scored from 0 to 5.
  - o According to the above criteria, each reviewer was requested to define his preferred ranking list of the 9 papers.
  - o A score was given to each paper according to its position in each ranking list.
  - o The reviewer scores were summed to find the final score of each paper.

#### Procedure for Selecting Conference Paper Awards:

- All ECCE papers submitted to Trans. on Industry Applications by end of May were considered (14 papers).
- Review process
  - o Six criteria: Readability, Use of Figures and Graphics, Education, Broad Interest, Significance, Impact.
  - o Each criterion is scored from 0 to 5.
  - o According to the above criteria, each reviewer was requested to define his preferred ranking list of the 12 papers.
  - o A score was given to each paper according to its position in each ranking list.
  - o The reviewer scores were summed to find the final score of each paper.

#### The three Conference Paper Awards are:

- 1) First Prize Paper Award: “Standstill Determination of PM Flux Linkage Based on Minimum Saliency Tracking for PM-SyR Machines,” by Paolo Pescetto and Gianmario Pellegrino;
- 2) Second Prize Paper Award: “Decoupled Torque Control of Multiple Three-Phase Induction Motor Drives,” by Sandro Rubino, Radu Bojoi, Davide Cittanti and Luca Zarri;
- 3) Third Prize Paper Award: “Analytical Formulation of a Maximum Torque per Ampere (MTPA) Technique for SynRMs Considering the Magnetic Saturation,” by Angelo Accetta, Maurizio Cirrincione, Maria Carmela Di Piazza, Giuseppe La Tona, Massimiliano Luna and Marcello Pucci.

The IDC Committee congratulated the winners and members of the Awards Subcommittee for their excellent work.

b. Associate Editors

The Associate Editors of IEEE Trans. on Industry Applications for IDC in 2020 were recognized.

Giacomo Scelba, University of Catania,	Italy
Roberto Petrella, University of Udine,	Italy
Long Wu (until April), John Deere,	USA
Marcello Pucci, INM-CNR,	Italy
Ramakrishnan Raja, Halla Mechatronics,	USA
Davide Barater, University of Parma,	Italy
David Diaz Reigosa, University of Oviedo,	Spain
Pinjia Zhang, Tsinghua University,	China
Yue Zhao, University of Arkansas,	USA

Luca Zarri thanked all Associate Editors for their help.

c. New Associate Editors Introduction:

- Prerit Pramod (Senior Member, IEEE) received his Bachelor of Engineering degree in Electrical Engineering from the Delhi College of Engineering, University of Delhi, India in 2010 and his Master of Science in Electrical Engineering Systems from the University of Michigan, Ann Arbor, Michigan, USA in 2012. He is currently an Engineering Manager in the Advanced Systems and Software Engineering group at Nexteer Automotive Corporation, Saginaw, Michigan, USA, where he is responsible for developing and maintaining the technology roadmap for next generation motion control products for the company and for managing a global team of cross-functional technical specialists towards its execution. His research interests include the design, modeling and sizing of electrical machines and power converters and the development and analysis of control, estimation and optimization algorithms for electric motor drive systems. He has authored several patents and research papers in the area of motion control systems.
- Wei Xu (M'09-SM'13) received the double B.E. and M.E. degrees from Tianjin University, Tianjin, China, in 2002 and 2005, and the Ph.D. from the Institute of Electrical Engineering, Chinese Academy of Sciences, in 2008, respectively, all in electrical engineering. His research topics mainly cover design and control of linear/rotary machines. From 2008 to 2012, he made Postdoctoral Fellow with University of Technology Sydney, Vice Chancellor Research Fellow with Royal Melbourne Institute of Technology, Japan Science Promotion Society Invitation Fellow with Meiji University, respectively. Since 2013, he has been Full Professor with State Key Laboratory of Advanced Electromagnetic Engineering in Huazhong University of Science and Technology, China. He has more than 110 papers accepted or published in IEEE Transactions Journals, two edited books published by Springer Press, one monograph published by China Machine Press, and more than 120 Invention Patents granted or pending, all in the related fields of electrical machines and drives. He is Fellow of the Institute of Engineering and Technology (IET).

d. Nagamori Awards Introduction by Yasushi Nishimura from Nagamori Foundation:

Nagamori Awards Overview:

- Commend those who have made innovative technological development in the motor related technical fields.
- Applicants must be entry to mid-career researchers and engineers.
- Will be given to approximately six people. The Grand Nagamori Award winner will receive a prize of 5 million yen, and each of the Nagamori Award winners will receive 2 million yen.

Application Guideline for the 7<sup>th</sup> Nagamori Awards:

- Field covered: Technical fields related to motors, actuators and power generators, and their control methods, application technologies, etc.
- Applicant eligibility: Applicants must be entry to mid-career researchers or development engineers who have made an outstanding achievement in the fields covered by the Nagamori Awards. Entry to mid-career – normally defined as no more than 30 years of research after obtaining the Bachelor’s degree.
- Application method: Self-nomination or nomination from academic institution are accepted. A recommendation letter by an expert in the field covered by the Awards, or a senior member of your Academic Society, organization, research department, etc. must be submitted.
- Application period: November 01, 2020 - January 31, 2021. Applications must be postmarked on, or before, January 31, 2021.
- Application condition: Documents must be submitted in either English or Japanese.
- The 7<sup>th</sup> Nagamori Awards Ceremony will be held on September 5, 2021.

#### 4. New Business

##### a. IDC Slate of Officers

Due to the muted attendee virtual meeting, instead of the Past IDC Chair: Fernando Briz, Mahesh Swamy presented the nomination of 2020 IDC slate of officers:

Chair: Mahesh Swamy, Milwaukee Tool, USA  
Vice Chair - Papers: Luca Zarri, University of Bologna, Italy  
Vice Chair - Programs: Jul-Ki Seok, Yeungnam University, Korea  
Secretary: Kevin Lee, Eaton Corporation, USA  
Past Chair: Fernando Briz, University of Oviedo, Spain

Mahesh Swamy moved the motion first, which was then seconded by Hassan Ali. The motion was unanimously approved.

##### b. Associate Editors

IDC is Looking for candidates. Send an email to IDC Publications Chair: Luca Zarri, [luca.zarri2@unibo.it](mailto:luca.zarri2@unibo.it).

##### c. Submission to papers to Transactions on Industry Applications

The authors should ask for an invitation email to IDC Publications Chair: Luca Zarri ([luca.zarri2@unibo.it](mailto:luca.zarri2@unibo.it)). The deadline is one year after an IEEE IAS sponsored conference. The authors should highlight the changes in the journal version of the paper.

d. Prize Paper Awards 2021

The papers submitted to IEEE Trans. on Industry Applications that will receive a non-negative recommendation by the end of February will be considered for the prize paper awards.

e. ECCE 2021

The details of ECCE 2021 were presented by Michael Harke, which will take place in Vancouver, Canada from the Oct. 11 to Oct. 15, 2021. General Chair: Giovanna Oriti. The conference website is <http://www.ieee-ecce.org/2021/>.

f. ECCE 2021 Topic Chairs

The members were encouraged to get involved and to volunteer as topic chairs and session chairs for IAS-sponsored conferences. Send an email to Jul-Ki Seok (by Nov. 30, 2020): [doljk@ynu.ac.kr](mailto:doljk@ynu.ac.kr).

g. IEMDC 2021

Ali Bazzi presented IEMDC 2021, which will be held on May 17-20, 2021, in CT, USA. General Chair: Ali Bazzi. The conference website is <https://iemdc-2021.com/>.

h. SLED 2021

Jung-Ik Ha presented SLED 2021, to be held on Dec. 16-18, 2021, in Seoul, Korea. General Chair: Seung-Ki Sul. The email contact is [sulsk@plaza.snu.ac.kr](mailto:sulsk@plaza.snu.ac.kr).

i. SDEMPED 2021

Bilal Akin presented SDEMPED 2021, to be held on August 22-25, in Dallas, TX. General Co-Chair: Bilal Akin, Gérard-André Capolino. The email contact is [Bilal.Akin@utdallas.edu](mailto:Bilal.Akin@utdallas.edu).

j. WEMDCD 2021

Davide Barater presented WEMDCD 2021, to be held on April 8-9, 2021, in Modena, Italy. General Co-Chairs: Davide Barater, Giovanni Franceschini. The email contact is [dbarater@unimore.it](mailto:dbarater@unimore.it).

k. EPE-ECCE EUROPE 2021

Alex Van den Bossche presented EPE-ECCE EUROPE 2021, to be held on Sept. 6-10, 2021, in Ghent, Belgium. General Chair: Alex Van den Bossche. The conference website is [www.epe2021.com](http://www.epe2021.com).

l. ECCE ASIA 2021

Sanjib K. Panda presented ECCE Asia 2021, to be held on May 24-27, 2021, in Singapore. General Chair: Sanjib K. Panda. The conference website is <https://ecceasia2021.com>.





m. PRECEDE 2021

Sanjib K. Panda presented PRECEDE 2021, to be held on Sept. 18-20, 2021, in Jinan, China. General Chair: Zhenbin Zhang. The conference website is <http://precede2021.com/>.

**5. Adjournment**

A call to adjourn the meeting was moved by Mahesh Swamy, seconded by Fabio Giulii Capponi, and unanimously approved.

Submitted by Kevin Lee  
October 27, 2020