

IAS INDUSTRIAL DRIVES COMMITTEE (IDC) MEETING

Friday October 16 2020

10:00 AM to 11:30 AM (EST)

Virtual Meeting

Agenda

- 1. Introduction of members and recognition of new 4. New business members and IEEE fellows
- 2. Old business/reports
 - Approval of 2019 meeting minutes
 - Vice-chair, Paper Review Transactions papers; Recognize Associate Editors
 - Vice-chair, Programs Report on ECCE 2020
 - Vice-chair, Standards Subcommittee
 - Report on SLED 2020
- 3. Awards and recognitions
 - Awards Subcommittee 2020
 - Conference Paper Awards
 - Associate editors
 - Nagamori Awards

- Nomination of 2021 IDC slate of officers
- Request to recruit new Associate Editors
- Future conferences:

ECCE 2021, IEMDC 2021, SLED 2021 SDEMPED 2021, WEMDCD 2021 EPE-ECCE Europe 2021, ECCE Asia 2021 PRECEDE 2021

- Submission of papers to Transactions on **Industry Applications**
- Recruit topic chairs & session chairs for ECCE 2021

5. Adjournment



1.- Introduction of Members

Recognition of new members and IEEE Fellows



2.- Old business/reports

- Approval of 2019 meeting minutes
- Luca Zarri, Paper Review Transactions papers
- Jul-ki Seok, Programs Report on ECCE 2019
- Kevin Lee, Chair, Standards Subcommittee Report



2.- Old business/reports

Vice-Chair Paper Review Report on Transactions papers

Luca Zarri

University of Bologna, Italy

Number of original submissions (new papers)



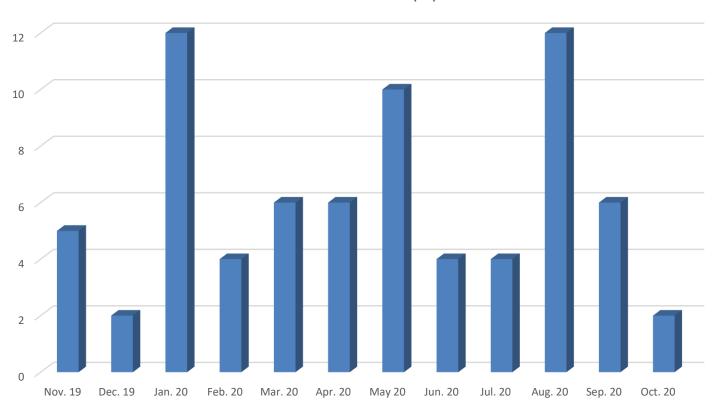
	Number of new submissions
Nov. 2019-Dec. 2019 TCPRC: Mahesh Swamy	9
Jan. 2020-Dec. 2020 TCPRC: Luca Zarri	64
TOTAL	73
Widthdrawn papers	1
TOTAL	72
Papers invited and not submitted (yet)	16
TOTAL	89

Previous year	
Oct. 2018-Oct.2019	98

Time distribution of the new submissions (original submissions)



Submissions of new papers



Acceptance rate and days to final decision



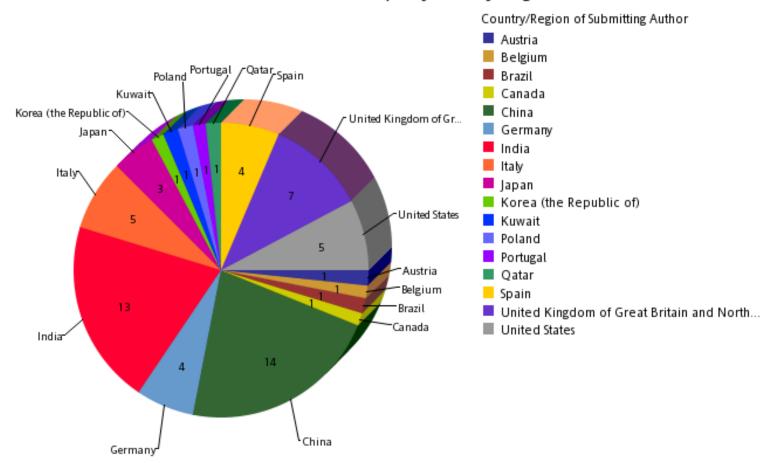
Period: Nov. 2019 – Oct. 2020	Num. of papers
Accepted papers	13
Rejected papers	23
Total	36
Acceptance rate	%
Acceptance rate (2020)	36%
Acceptance rate in 2019	45%
Acceptance rate in 2018	51%

	2020	2019
Days to first decision	67	75
Days to final decision	96	117
Median	85	n.a.



Country of the corresponding author (Jan 2020-Oct 2020)

Number of Manuscripts by Country/Region

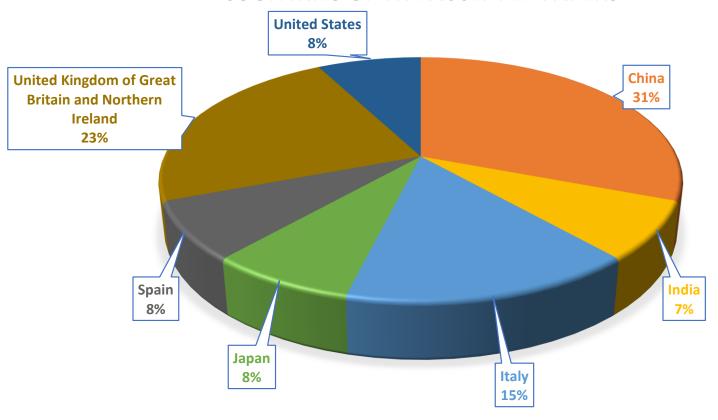


Country/Region of Submitting Author	# Manuscripts
Austria	1
Belgium	1
Brazil	1
Canada	1
China	14
Germany	4
India	13
Italy	5
Japan	3
Korea (the Republic of)	1
Kuwait	1
Poland	1
Portugal	1
Qatar	1
Spain	4
United Kingdom of Great Britain and Northern Ireland	7
United States	5
Summary	64





COUNTRIES OF THE ACCEPTED PAPERS

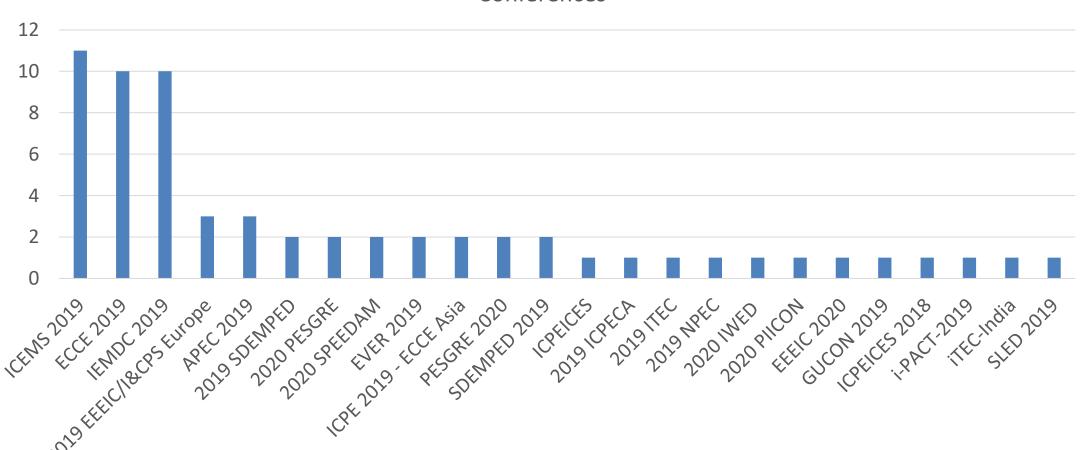


Country/Region	Accept	Reject	Total
Belgium	0	1	1
China	4	8	12
Germany	0	2	2
India	1	5	6
Italy	2	1	3
Japan	1	1	2
Kuwait	0	1	1
Poland	0	1	1
Spain	1	0	1
United Kingdom of Great Britain and Northern Ireland	3	1	4
United States	1	2	3
Total	13	23	36

Conferences where the submitted papers were originally presented (Jan 2020- Oct 2020)









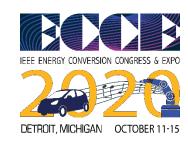
2.- Old business/reports

Programs – Report on ECCE 2020

Jul-Ki Seok

Yeungnam University, Korea

ECCE 2020 Technical Program Committee Members, Electric Drives



Vice-chairs

Jul-Ki Seok; Antonio J. Marques Cardoso

Topic Chairs (19)

- 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
- Shafiq Ahmed Odhano

Thank you to all Topic Chairs!

ECCE 2020 Technical Program Committee Members, Electric Drives



Session Chairs (15)

- Andrea Cavagnino
- Antonio J. MarquesCardoso
- 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
- Thomas Wolbank

Thank you to all Session Chairs!

IDC Digest Submissions (164 digests)

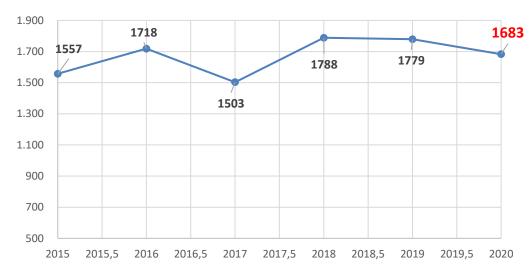
IEEE ENERGY CONVERSION CONGRESS & EXPO
2
DETROIT MICHIGAN OCTOBER 11-15

1. General	8	DETROIT, MICHIGAN OCTOBER 11-15
2. Induction motor drives	13	
3. PM and IPM motor drives	29	
4. Control of electric drives	33	
5. Drives applications	15	
6. Sensor-less drives	16	
7. Sensors and transducers	3	12. New technologies and integrated drives 8
8. Diagnosis, reliability and EMI	9	13. Electrical Drives for Aerospace and Tractio
9. High speeds and direct drives	1	Applications 9
10. Energy efficient motor drives	6	14. Electrical drives for wind & other renewab
11. Medium voltage drives		integration 4
and high-power drives	7	15. Drive-utility interface 3

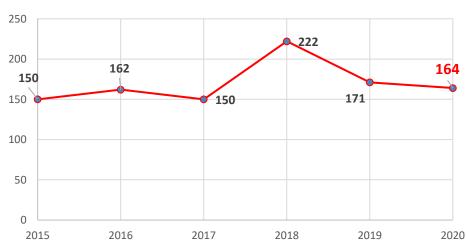
Yearly submission trends







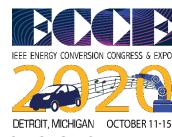
IDC submission



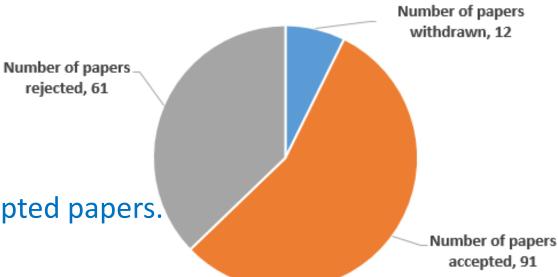
- Online TPC meeting due to COVID-19
- 1683 submissions from 70 countries
- The yearly data of ECCE and IDC show a quite similar pattern.
- The number of 2020 digests is slightly lower than that of 2019.

Overall Statistics (2020)

- Number of digests: 164
- Number of papers withdrawn: 12 (Papers withdrawn after being accepted: 7)
- Number of papers accepted: 91 (Originally 98 with 7 withdrawn papers)
- Number of papers rejected: 61
- The acceptance ratio is 59.7% for 98 originally accepted papers.
- (58 papers were distributed into 14 oral sessions.)
- (33 papers were assigned to 3 poster sessions.)
- 6 oral sessions and 3 poster sessions appeared in the technical program.
- Review Quality:
 - All papers with at least 3 reviews
 - The average number of reviews per paper was around 4.2



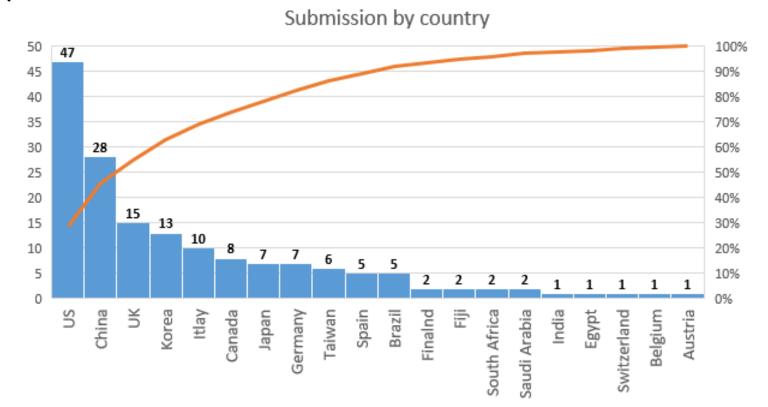
Overall Statistics (164 submission)



Submission by country based on the first author



- 164 digests from 20 different countries
- United States (47) and China (28) submitted about 45 % of the total number of digests, followed by UK (15), Korea (13), Italy (10), Canada (8), Japan (7) and Germany (7).

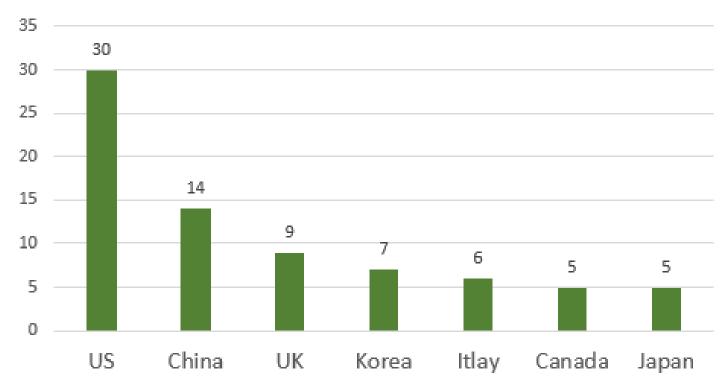


Distribution of the accepted papers for the first author



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



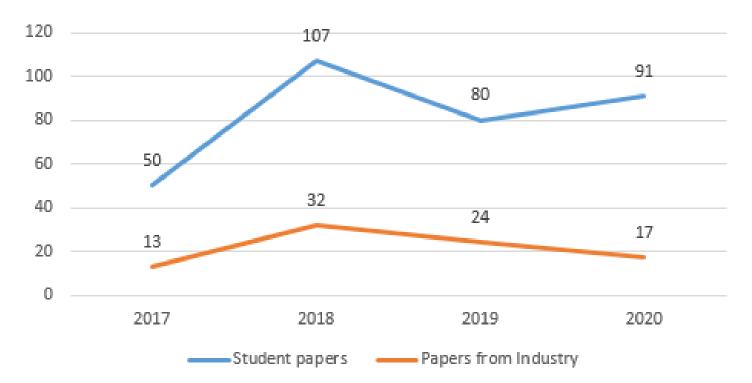


Relevant Statistics



- Student papers: 91 (80 in 2019, 107 in 2018, 50 in 2017)
- Papers from industry: 17 (24 in 2019, 32 in 2018 and 13 in 2017)
- Government involvement: 3

Relevant Statistics





2.- Old business/reports

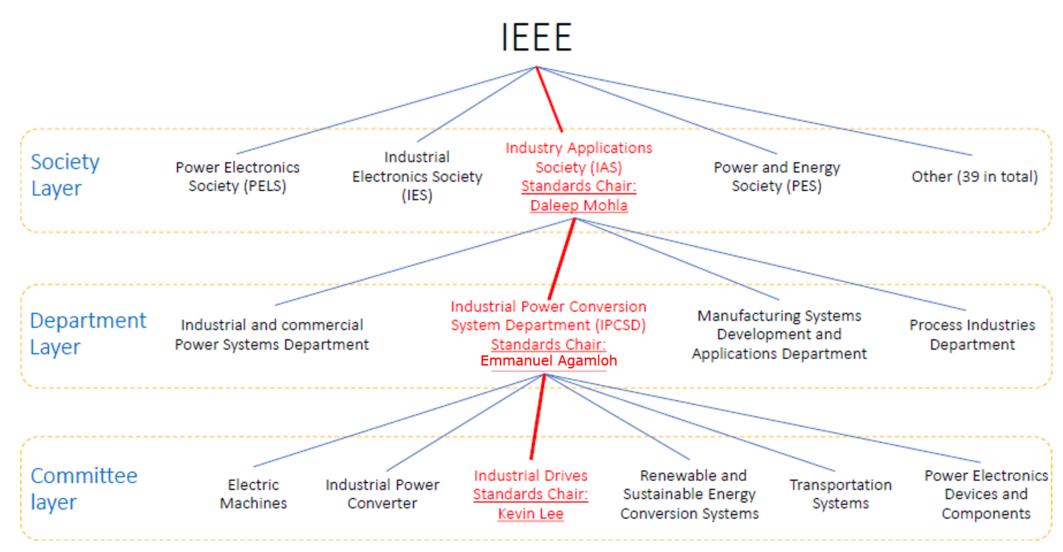
Standards Subcommittee

Kevin Lee

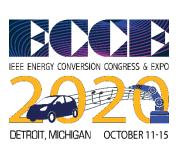
Chief Engineer, Eaton, USA (Kevin_Lee@ieee.org)

IEEE – IAS – IDC Standards Subcommittee Structure





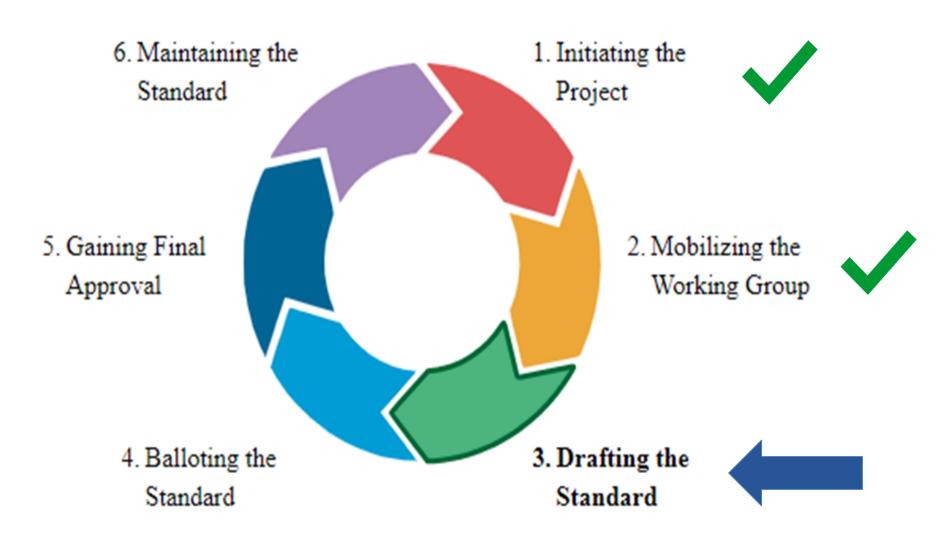
Mission Statement of IDC Standards Subcommittee



- The goal of the Standards Subcommittee 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.
- 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





IEEE Classifications of Standards



- Standards: documents with mandatory requirements.
 - *Shall* indicates mandatory requirements to be strictly followed without deviation in order to conform to the standard.
- **Recommended practices**: documents in which procedures and positions preferred by the IEEE are presented.
 - Should indicates a particular recommendation among several possibilities without mentioning or excluding others; or that a certain course of action is preferred but not necessarily required.
- **Guides**: documents in which alternative approaches to good practice are suggested but no clear-cut recommendations are made.
 - May indicates a course of actions permissible within the limits of a standard.
 - Can indicates possibility and capability.
- **Trial-Use documents:** publications in effect for not more than three years (See subclause 5.7. of the *IEEE SA Standards Board Operations Manual*). They can be any of the categories of standards publications listed above.

Approval Status of First Working Group Project



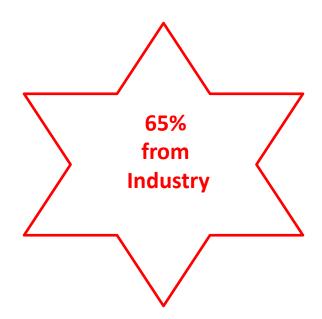
- Project Title: P2943-Energy Efficiency Test Methods for Three-Phase Variable Frequency Drive Systems.
- Scope Statement: This standard defines a common test protocol for determination of energy efficiency for motor drive systems, for an AC motor and a combination of a Variable Frequency Drive (VFD), AC motor, and ancillary equipment. Performance classifications for the said motor drive systems are also defined.
- Project Status: On September 24, 2020, the IEEE SA Standards Board approved the project.
- Project Timing: Until December 31, 2024.

Subcommittee Working Group Members:



- Eric Armando, Politecnico di Torino, Italy
- Joseba Arza, Ingeteam Group, Spain
- Raymond Drohan, Schneider Electric, 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, 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



Thank you all for your participation!

3.- Awards and recognitions



Prize Papers and Awards Subcommittee

Fabio Giulii Capponi

University of Rome "La Sapienza", Italy

Awards Subcommittee



■ Fabio Giulii Capponi (Chair) Sapienza - University of Rome

Richard Lukaszewski Rockwell Automation

Ion Boldea
University Politechnica Timisoara

Jun Koo Kang
LG Electronics

Marko Hinkkanen Aalto University

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

Six criteria: Readability, Use of Figures and Graphics, Education, Broad Interest, Significance, Impact.

Each criteria is scored from 0 to 5

According to the above criteria, each reviewer was requested to define his preferred ranking list of the 12 papers

A score was given to each paper according to its position in each ranking list.

The reviewer scores were summed to find the final score of each paper.

Conference Paper Awards

IEEE ENERGY CONVERSION CONGRESS & EXPO

First Prize Paper Award

Title: Standstill Determination of PM Flux Linkage Based on Minimum Saliency Tracking for PM-SyR Machines

Authors: Paolo Pescetto and Gianmario Pellegrino

Second Prize Paper Award

Title: Decoupled Torque Control of Multiple Three-Phase Induction Motor Drives

Authors: Sandro Rubino, Radu Bojoi, Davide Cittanti and Luca Zarri

Third Prize Paper Award

Title: Analytical Formulation of a Maximum Torque per Ampere (MTPA) Technique for SynRMs Considering the Magnetic Saturation

Authors: Angelo Accetta, Maurizio Cirrincione, Maria Carmela Di Piazza, Giuseppe La Tona, Massimiliano Luna and Marcello Pucci



Associate Editors

- Giacomo Scelba
- Roberto Petrella
- Long Wu (until April)
- Marcello Pucci
- Ramakrishnan Raja
- Davide Barater

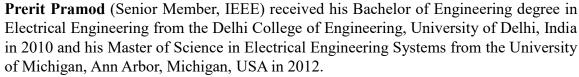
- David Diaz Reigosa
- Pinjia Zhang
- Yue Zhao

Thank you to all Associate Editors for your help!



New Associate Editors





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).



Nagamori Awards

Yasushi Nishimura

Nagamori Foundation

4.- New Business



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, Republic of Korea
- Secretary: Kevin Lee, Eaton Corporation, USA
- Past Chair: Fernando Briz, University of Oviedo, Spain

4.- New Business



Associate Editors

Looking for candidates
Send an email to IDC Publications Chair

Luca Zarri - luca.zarri2@unibo.it

4.- New Business



Submission of papers to Transactions on Industry Applications

The authors should ask for an invitation email to IDC Publications Chair: Luca Zarri (luca.zarri2@unibo.it)

Deadline: one year after an IEEE IAS sponsored conference

The authors should highlight the changes in the journal version of the paper

4.- New Business



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.





Presentation of ECCE 2021





IEEE ENERGY CONVERSION CONGRESS & EXPO DETROIT, MICHIGAN OCTOBER 11-15





Vancouver Convention Center - West



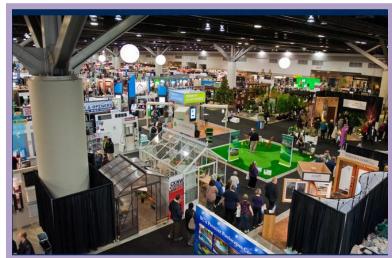
• Sustainable building (double LEED® Platinum certified facility), six-acre

living roof

Waterfront views from every window





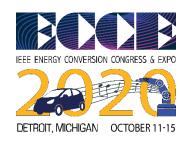


Hotels



- Marriott Pinnacle Downtown
- Fairmont Waterfront



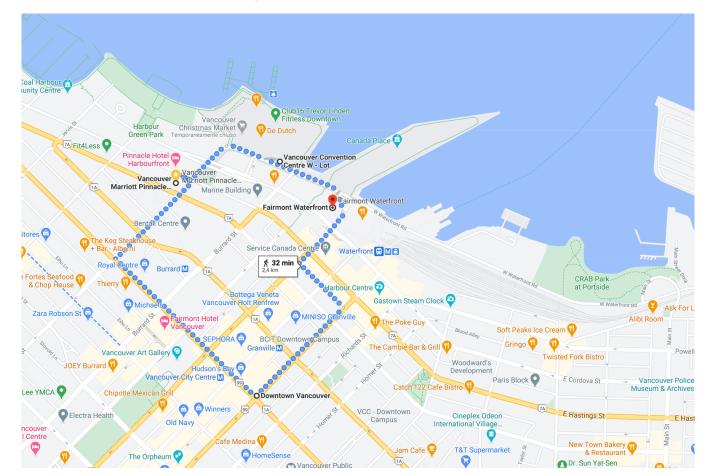




Live Vancouver!



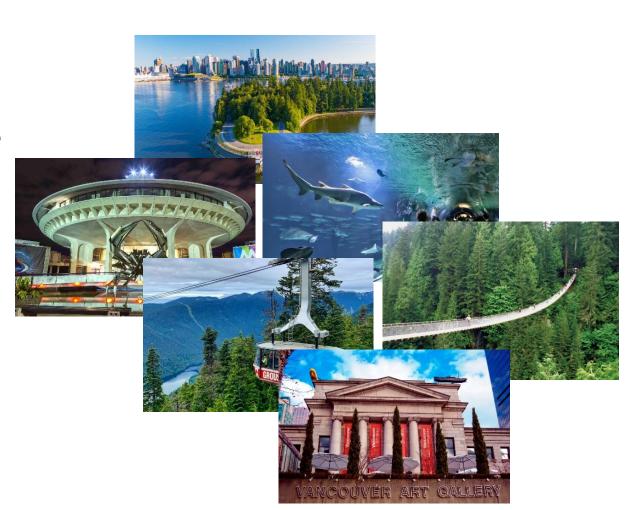
- Click for 30 s Video
- Hotels, convention center and downtown at hand
- Vancouver Inter. Airport (YVR) 20 min. from downtown



Many Attractions in Vancouver

- Port of Vancouver (largest port in Canada)
- Cruise Ship Terminal (4th largest in the world)
- Stanley Park
- Capilano Suspension Bridge
- H.R. MacMillan Space Centre
- Aquarium
- Science World
- Grouse Mountain
- Vancouver Art Gallery
- VanDusen Botanical Garden
- and many others...





Important Dates



- Jan. 15th, 2021 Deadline for <u>digest</u> submissions
- Feb 12th, 2021 Deadline for Tutorials
- Mar 31st, 2021 Deadline for Special Sessions
- April 2nd, 2021 Tutorial decision notification
- May 1st, 2021 Digest and Special Sessions decision
- Jun. 30th, 2021 Final papers with copyright forms

For details visit our website:

http://www.ieee-ecce.org/2021/











ECCE2021 Topic Chairs

Looking for candidates

Send an email to Jul-Ki Seok

(by Nov. 30 2020) - doljk@ynu.ac.kr



Presentation of IEEE IEMDC 2021

Ali Bazzi October 16, 2020

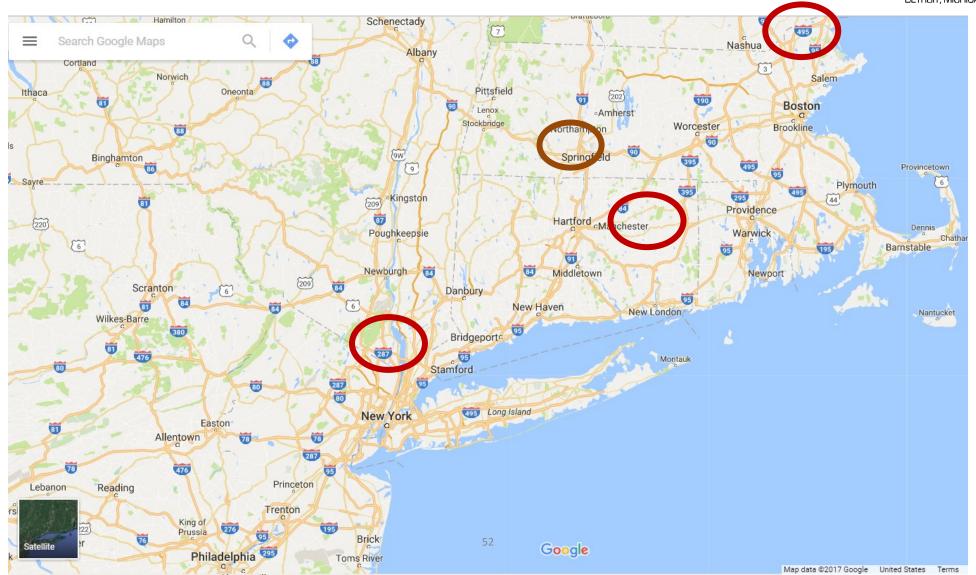
IEEE IEMDC 2021



- May 17-20, 2021 in CT, USA
- Attendees can plan on visiting NYC or Boston: drive or take public transportation
- Venue: Mohegan Sun Resort
- Current plans are to be in-person with social distancing up to 400 people.
- Contingency plans:
 - -Hybrid conference with in-person and online attendance
 - -Fully online conference through Whova and Webex or Zoom

IEEE IEMDC 2021





IEEE IEMDC 2021



Organizing Committee

- General Chair: Ali Bazzi (UConn, USA)
- Program Co-Chairs: Dong Jiang (HUST, China) and Bilal Akin (UT Dallas, USA)
- Publications Chair: Sung-Yeul Park (UConn, USA)
- Finance Chair: Weiqiang Chen (IMCORP, USA)
- Plenary and Keynote Chair: Mike Ahern (WPI, USA)
- Awards Chair: Pinjia Zhang (Tsinghua, China)
- Educational and Outreach Chair: Edvina Uzunovic (WPI, USA)
- Exhibits Chair: Alireza Fatemi, General Motors
- Tutorials Chair: Awaiting reply
- Publicity Chair: Position may not be needed as RNA Associates is handling publicity



Presentation of SLED 2021

Jung-Ik Ha

Seoul National University, Korea



Presentation of IEEE SDEMPED 2021

Bilal Akin
University of Texas, Dallas



IEEE ENERGY CONVERSION CONGRESS & EXPO DETROIT, MICHIGAN OCTOBER 11-15

SDEMPED 2021

13th edition of the IEEE International Symposium on Diagnostics for Electric Machines, Power Electronics and Drives

August 22-25
Dallas TX









Topics of the Conference

- **1. Electrical machines:** Failure detection and location/vibration, audible noise, electrical or mechanical variables, sensors, insulation failures, electrical, mechanical and thermal models
- **2. Power electronics:** Diagnostics / input-output monitoring, thermal and/or electrical measurements on power semi-conductors, control supervision, signal processing
- **3. Adjustable speed drives**: Monitoring and diagnostics for ASDs using electrical machines, power converters and control systems, computer-based signal processing and data analysis
- **4. Methods and tools for diagnostic and prognostic:** neural networks, fuzzy logic, Al, genetic algorithms, expert systems, identification, signal processing techniques, observers...
- **5. Materials for electrical machines:** Insulating and magnetic materials, RUL models, ageing tests
- **6. Tests for predictive maintenance:** Partial discharge analysis and tests, new instruments for diagnostics
- 7. Fuel Cells and Electrolyzers: models for diagnostic or ageing, tests
- 8. Power Systems and Power Networks, Embedded Systems, Emerging Applications

Conference Committee



GENERAL CO-CHAIRS

Bilal Akin, USA University of Texas, Dallas Gérard-André Capolino, France University of Picardie

HONORARY CO-CHAIRS

Thomas Habetler, USA Georgia Tech Hamid Toliyat USA Texas A&M University

TECHNICAL PROGRAM CO-CHAIRS

Antonio J. M. Cardoso, Portugal University of Beira Interior
Huai Wang, Denmark Aalborg University
José-A. Antonino-Daviu, Spain Universitat Politècnica de València
Sang Bin Lee, Korea University

Conference Committee (Tentative)

KEYNOTE & SPECIAL SESSIONS ORGANIZERS

Morgan Kiani, USA TCU

Behrooz Mirafzal, USA Kansas State University

Babak Fahimi USA University of Texas, Dallas

Luca Zarri, Italy University of Bologna

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Seungdeog Choi, USA Mississippi State University

Andres Nogueiras Spain University of Vigo

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Lucia Frosini, Italy University of Pavia

Faisal Khan, USA University of Missouri

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Gaolin Wang China Harbin Institue of Technology

Radu Bojoi, Italy Politecnico di Torino

Leila Parsa, USA UC Santa Cruz

JiangBiao He, USA University of Kentucky

TREASURER

JiangBiao He, USA University of Kentucky







Presentation of WEMDCD 2021

Davide Barater

University of Modena-Reggio, Italy

WEMDCD 2021, Modena (Italy), 8-9 April 2021

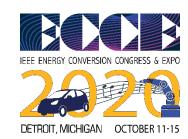


General Co-chairs: Davide Barater (Italy), Giovanni Franceschini (Italy)



Conference Organization

- 2 Day Conference
 - 3 key-note speeches
 - 6 oral sessions
 - 2 poster sessions
- Industrial Exhibition
- Sessions to cover:
 - Electrical Machine Design and Modelling
 - Electrical Drives and their Control
 - Electrical Drives Reliability and Monitoring
 - Industrial and Transport Applications of Machines and Drives



Conference Organization



Key Dates:

- Submission of papers opens: 7 September 2020
- Submission of papers closes: 31 December 2020
- Notification of acceptance: 14 February 2021
- Deadline for uploading final full papers and conference

forms: 7 March 2021

Committees

- General Co-Chair
 - ➤ Davide Barater, Italy
 - ➤ Giovanni Franceschini, Italy
 - International Steering
 Committee
 - ➤ Babak Fahimi, USA
 - Gérard-André Capolino, France
 - ➤ Aldo Boglietti, Italy
 - ➤ Leila Parsa, USA
 - > Franck Betin, France
 - > Antonios Kladas, Greece
 - ➤ Chris Gerada, UK
 - ➤ Humberto Henao, France
 - ➤ Radu Bojoi, Italy



- Publication Co-Chair
 - ➤ Antonio Luque, Spain
 - >Andres Nogueiras, Spain

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 - ➤ Humberto Henao, France
 - ➤ Radu Bojoi, Italy



- Publication Co-Chair
 - ➤ Antonio Luque, Spain
 - >Andres Nogueiras, Spain

Committees

Technical Program Co-Chair

- ➤ Giampaolo Buticchi, China
- ➤ Andrea Cavallini, Italy
- > Stefano Nuzzo, Italy
- ➤ Savvas Papadopoulus, UK

Publicity Co-Chairs

- ➤ Gérard-André Capolino, France
- > Jose Antonino-Daviu, Spain
- ➤ Luca Zarri, Italy
- ➤ Alberto Tessarolo, Italy
- > Carlo Cecati, Italy
- ➤ Michael Galea, China
- > Francesco Cupertino, Italy
- Fernando Briz, Spain
- ➤ Gianmario Pellegrino, Italy



Local Organisation Committee

- > Emilio Lorenzani, Italy
- Fabio Immovilli, Italy
- ➤ Claudio Bianchini, Italy
- ➤ Luigi Alberti, Italy
- Cinzia Tedeschi, Italy

Treasurer

Fabio Immovilli, Italy



Presentation of EPE-ECCE EUROPE 2021

Alex Van den Bossche

Ghent University (UGENT)



Presentation of ECCE ASIA 2021

Sanjib K. Panda

NUS, Singapore



Presentation of PRECEDE

Prof. Zhenbin Zhang

Shandong University



Adjournment