

# IEEE IAS

## Electric Machines Committee

2021 Committee Meeting

Saturday, October 23 8:00-9:30 EST

Meeting number (access code): 2536 154 5472

Host key: 906518

Meeting password: UXeRdE7JY43

Meeting URL:

<https://ieeemeetings.webex.com/ieeemeetings/j.php?MTID=mfd180448627e8b063d04b8eb3b2fae1a>

Chair: Akira Chiba



# Agenda

1. Review and Approval of 2020 Committee Meeting Minutes, Rukmi
2. Chairman's Report, Akira
  - a. Transactions Papers Status Review, Akira
  - b. ECCE2020 Technical Program Vice-Chairs Report, Greg
3. Old Business
4. Subcommittee Reports, subcommittee chairs
  - a. Prize Paper Awards Presentation, Akira
  - b. Standards, Haran
5. ECCE Session Chair Reports (2020 ECCE sessions completed as of meeting time)
6. New Business:
  - a. 2021 Officers – EMC Past Chair Emmanuel
  - b. Publications Update and IAS Sponsored Conferences
7. Future Conference Organization:
  - a. ECCE 2021 – Preparation for ECCE 2021
  - ☐ Topic/Session Chairs Volunteers (internet collection)
  - b. Other Upcoming Conferences
18. Other Business
  - a. Nagamori award announcement
9. Adjournment

# Attendance

2021  
Rukmi

- Update of the roster
- Recruitment drive for new members
- Request for serving as a TC in ECCE 2021

Via Microsoft Form

**Microsoft Forms was used in 2020 with great success.  
We will use the same method in 2021.**

# How it works

2021  
Rukmi

## Microsoft Forms will be used to

- update members contact details in the EMC member database.
- collect information about your intention to volunteer in ECCE 2022 as a Technical Chair(TC) and/or reviewer.

EMC members will receive Microsoft survey form as a link via an Email from us. **Kindly complete the Form when you receive it.**



# New members

2021  
Rukmi

- If you are an IEEE – IAS member, and wish to be an EMC member, please send an email to [rukmidutta@ieee.org](mailto:rukmidutta@ieee.org) with your details.

Alternatively, you can go to <https://site.ieee.org/ias-emc/member-subscriptions/> and opt for subscription to EMC-IAS list.

[IEEE.org](#) | [IEEE Xplore Digital Library](#) | [IEEE Standards](#) | [IEEE Spectrum](#) | [More Sites](#)

IEEE IAS Electric Machines Committee



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## Member Subscriptions

If you are an IEEE – IAS member, and wish to be an EMC member, please send an email to EMC secretary ([rukmidutta@ieee.org](mailto:rukmidutta@ieee.org)) with your details.

Alternatively, you can go to [LISTSERVE EMC-IAS Subscription](#) and opt for subscription to EMC-IAS list.

[Edit](#)

- We will also run a recruitment drive via LinkedIn page.
- Total 22 new members have joined us since last EMC meeting.
- 18 out of 22 have joined via the web page, the majority of which was during the LinkedIn recruitment drive.

# 1. 2020 Minutes

# Motion is invited to Accept 2020 Minutes for the Record !

- Minutes were distributed electronically. Corrections were requested and required corrections were made.
- Minutes were recirculated again on **02/11/2020**.
- Approved minutes will be available at IAS – EMC website:  
<https://site.ieee.org/ias-emc/meeting-minutes/>

# Member Recognitions

## EMC members



- Prof. Zi-Qiang Zhu **IEEE Nikola Tesla Award (2021)**, *“for contributions to the design, modeling, control, and application of ac permanent magnet machines and drives.”*

2021  
Updated  
las level  
awards  
were not  
found

- **Class of 2021 IEEE Fellows in EMC**

- **Mohammad Nazmul Anwar**, “for contributions to the system-balanced-robust power electronics design methodology for electrified vehicles”
- **Mahesh Swamy**, “for development of power electronics topologies”
- **Mohammad Uddin**, “for contributions to control techniques for AC motor drives”
- **Leila Parsa**, “for contributions to control of multi-phase permanent magnet electrical drives”
- **Alireza Bakhshai**, “for contributions to the development of synchronization techniques for power electronics converters”
- **Jin Wang**, “for development of high density power converters and their use in electric cars”

# 2. Chairman's Report

# Transactions Paper Review Status



# Current Associate Editors

2021  
Akira

Antonio J. Marques	Cardoso	Portugal
Giulio	De Donato	Italy
Yao	Duan	US
Greg	Heins	Australia
Gianmario	Pellegrino	Italy
Alberto	Tessarolo	Italy
Rajeev	Vyas	US
Katsumi	Yamazaki	Japan
Qu	Ronghai	China
Rukmi	Dutta	Australia
Zhang	Pinjia	China
Parsa	Leila	US
Vaschetto	Silvio	Italy
Min-Fu	Hsieh	China
Takashi	Kosaka	Japan
Eric	Severson	US
Sanjib K.	Panda	Singapore
Adam	Skorek	Canada
Mircea	Popescu	UK

**Thank you to all  
EMC AEs as well  
as our TIA Paper  
Reviewers !**

2021 TCPRC policy:

- In split case, please return to authors.
- Under COVID situation, more than one year has been allowed for Transaction review.

# Overview of IAS Publications

## *IAS Owned*

- ▶ Transactions on Industry Applications
- ▶ Industry Applications Magazine
- ▶ Open Journal of Industry Applications

## Prize Paper Process 2019 information

- ▶ Each Technical Committee and Special Issue given right to nominate at least one paper
- ▶ Additional nomination for every 10% of papers published
  - e.g. 2019:
  - 719 papers published in Transactions on Industry Applications
  - EMC, IPCC, IACC all published more than 72 papers, so were allowed to nominate 2 papers

In 2020 EMC had 116 papers published in the IAS transactions and 1 paper published in the magazine. EMC nominates 2 papers as potential candidates.

More IAS magazine publications are suggested. Please recommend magazine publication in review process. I did see one only.

# *Congratulation !!*

## IEEE IAS Transaction Second Award

“Winding Thermal Modeling and Parameters Identification for Multi Three Phase Machines Based on Short-Time Transient Tests”

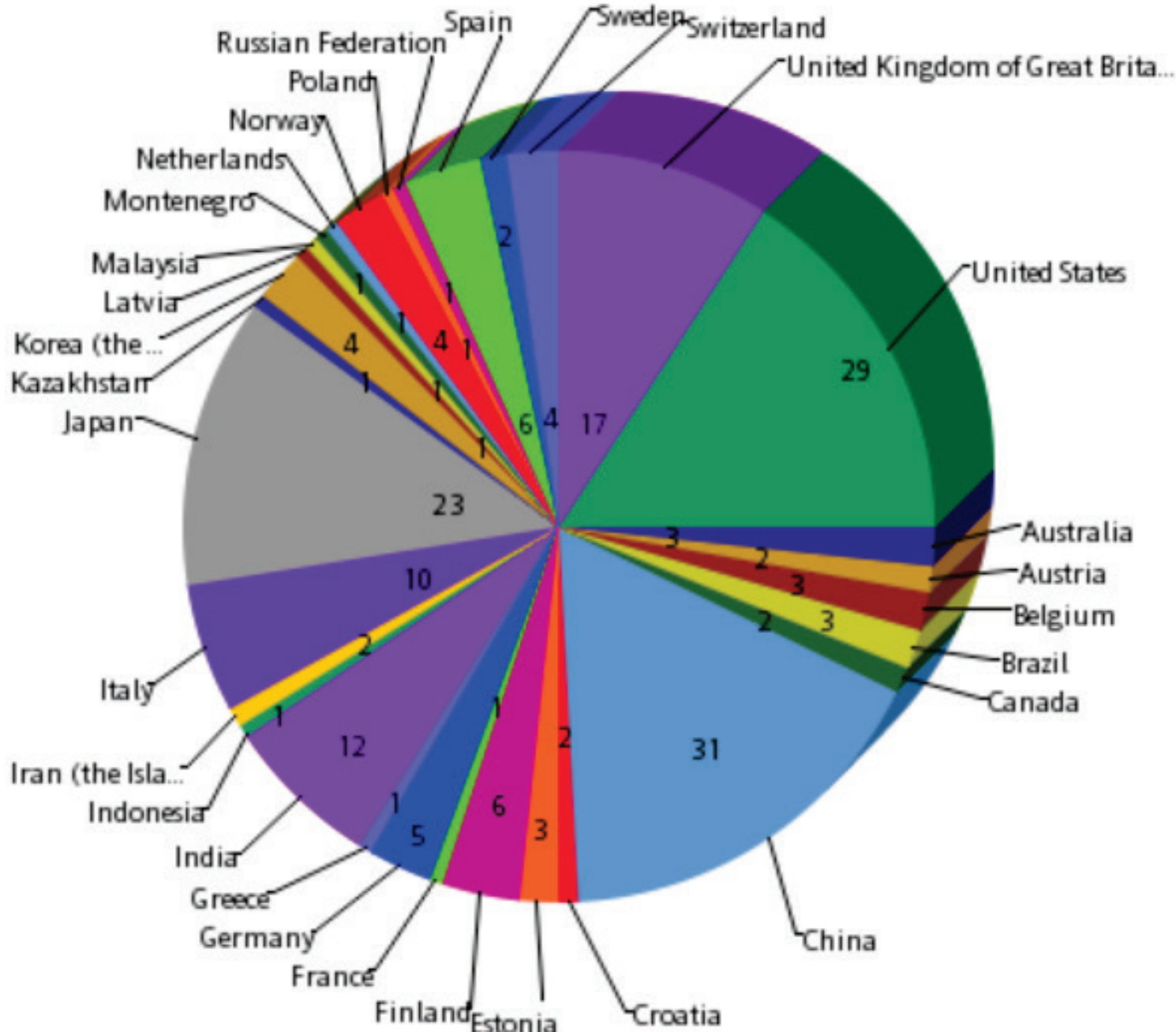
by

Paolo Pescetto, Simone Ferrari, Gianmario Pellegrino, Enrico Carpaneto, and Aldo Boglietti

<https://ieeexplore.ieee.org/document/8970537>

# Last one year original submission

2021  
Akira  
update



US 29  
China 31  
Japan 23  
UK 17  
India 12  
Italy 10

# Process for Prospective Authors

2021  
Akira

- How to submit papers presented at an IAS sponsored conference for IAS Transactions?
- For invitation, send Email to
  - Up to December, Akira Chiba: [achiba@ieee.org](mailto:achiba@ieee.org)
  - From January, Greg Heins: [gregheins@ieee.org](mailto:gregheins@ieee.org)
- Include in your email:
  - Given and Family Name
  - **Corresponding email**
  - Affiliation
  - Paper Title
  - Conference Name and Date
- On manuscript submission, explain the differences between the conference and Transactions versions in the **cover letter**.
- For more information visit EMC website :<http://sites.ieee.org/ias-emc/publications/>





# IEEE CALL FOR PAPERS



## IEEE Transactions on Industry Applications

### Special Issue on

### Design and Optimisation of Electric Motors for Transport Electrification

#### Important Dates

31-Oct-21: Call for papers issued

31-Jan-22: Deadline for submission of Abstract

14-Mar-22: Editorial board will finalise accepting extended abstracts

11-Apr-22: Deadline for initial submission of manuscript and copyright transfer

7-Oct-22: Notification of final decisions

7-Nov-22: Deadline for submission of final files, early access preprint in IEEE Xplore

Mar/Apr 2023: Publication date of IEEE TIA issue



# IEEE CALL FOR PAPERS



## IEEE Transactions on Industry Applications

### Special Issue on

### Design and Optimisation of Electric Motors for Transport Electrification

#### Topics of interest include, but are not limited to:

- Design and analysis of electric motors for electric traction drives
- Optimization methods (heuristic, gradient-based optimisations, etc.) applied to electric motors used in electric traction drives
- Efficiency maps of electric motors for traction applications
- Overload performance of electric motors for traction applications
- Actuators and active electromagnetic suspension
- Design of electric motors for in-wheel traction applications
- Development of new materials for electric motors used in electric traction drives
- Loss estimation and minimization of electric motors for traction applications
- The optimisation of electric motors considering regeneration
- Starters, alternators and flywheels for electric traction drives
- Specialized electric machines for traction applications
- Elimination or reduced rare earth material dependency
- Modelling, simulation, and analysis of the dynamics of electric machines for traction applications
- Measurements, testing, and parameter identification
- Fault tolerant design of electric machines
- Thermal analysis and improved cooling methods for electric machines
- Optimization scenarios (single/multi-objective, multi-physics, multi-levels, multi modes etc) considering control aspects related to motor parameter variations





# IEEE CALL FOR PAPERS

## IEEE Transactions on Industry Applications

### Special Issue on Design and Optimisation of Electric Motors for Transport Electrification

### Guest Editors



Dr. Amin Mahmoudi  
College of Science and Engineering,  
Flinders University, Adelaide,



Assoc. Prof. Wen Soong  
School of Electrical and Electronic  
Engineering  
University of South Australia, Australia



Dr. Solmaz Kahourzade  
Science, Technology, Engineering and Math  
of South Australia, Adelaide, Australia



Prof. Akira Chiba  
Department of Electrical and Electronic  
Engineering  
Tokyo Institute of Technology, Japan



Dr Mircea Popescu  
Motor Design Ltd  
Wrexham, UK



Assoc. Prof. Rukmi Dutta  
School of Electrical Engineering and Telecommunications  
University of New South Wales, Sydney, Australia



Prof. Min-Fu Hsieh  
Department of Electrical Engineering  
National Cheng Kung University, Taiwan



Dr Rajeev Vyas  
Vehicle Engineering Center  
General Motors Corporation, USA

# ECCE 2021 Vice-Chairs' Report

*Dr Greg Heins*

# 2021 ECCE EMC Topic Chairs

# EMC

2021 Greg

G01	Peng Han	Ansys, Inc.
G01	Prerit Pramod	Nexteer Automotive Corporation, USA
G02	Silvio Vaschetto	Politecnico di Torino
G02	Yang Xu	Ford Motor Company
G03	Fan Wu	Rivian Automotive
G03	Narges Taran	BorgWarner
G03	Nicola Bianchi	University of Padova
G04	Edwin Xikai Sun	Rockwell Automation, China
G04	Sandro Rubino	Politecnico di Torino, Dipartimento Energia "G. Ferraris"
G05	Wei Xu	Huazhong University of Science and Technology
G05	Z.Q. Zhu	University of Sheffield, UK
G06	Giulio De Donato	Sapienza-University of Rome, Italy
G07	Bryan Ruddy	The University of Auckland, New Zealand
G07	Renato Lyra	Aerotech, Inc., USA
G08	David Reigosa	University of Oviedo
G08	Hassan Eldeeb	Florida International University, USA
G08	Jose Antonino-Daviu	Universitat Politecnica de Valencia
G09	Antonio Griffo	University of Sheffield
G09	Haran Karmaker	TECO Westinghouse, United States
G09	Nick Simpson	University of Bristol, UK
G10	Adam Skorek	University of Quebec at Trois-Rivières, Canada
G10	Rafal Wrobel	Newcastle University
G11	Gerd BRAMERDORFER	Johannes Kepler University Linz, Austria
G11	Matthew Gardner	University of Texas at Dallas, USA
G12	Eric Severson	University of Wisconsin-Madison, USA
G12	Wolfgang Gruber	Johannes Kepler University Linz
G13	Alireza Fatemi	Motors
G13	Rajesh Deodhar	IMRA Europe S.A.S.
G13	SUBRATA SAHA	AISIN AW CO. LTD JAPAN
G14	Athanasios Karlis	Democritus University of Thrace, Greece
G14	Udochukwu Akuru	Tshwane University of Technology, South Africa

# Thank you all Topic Chairs!!

- ECCE Group G Vice Chairs are EMC secretary (Rukmi Dutta) and Vice Chair (Greg Heins) and Antonio J. Marques Cardoso

# Review Process

- Topic Chairs were selected from volunteers who gave name cards in last EMC meeting in ECCE. **They were contacted to find their preference of G01-G14.**
- Each reviewer can modify his area in the web system. Based on their area, Topic Chairs selected these reviewers. Five reviewers for one digest.
- Generally, at least 3 review evaluations were requested, however, **5 evaluations were requested for split cases**, for example, weak accept, accept, weak reject.
- Some reviewers did not provide evaluations even after deadline. Their review assignments were cancelled, and Topic Chairs and Vice Chairs worked on review evaluations. If one can not review digests, please let us know in advance.

# 2021 ECCE Paper Review Management

ECCE level

2021 Greg

Admin

6 TPCs

Chairs

27 x Vice Chairs (VCs)

178 x Topic Chairs (TCs)

Reviewer

~8294 invited  
~1715 accepted

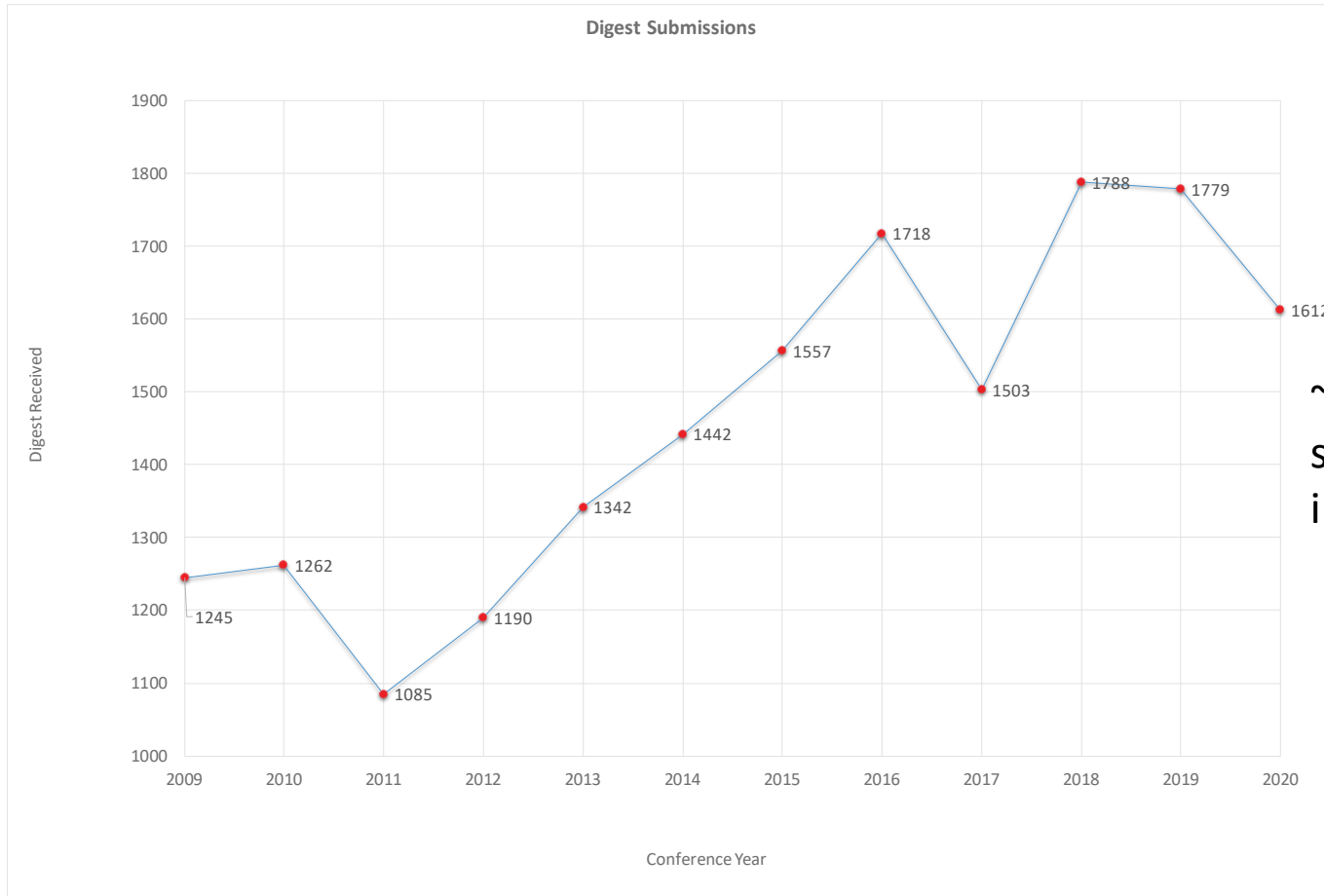
Reviewers

Reviewers



# ECCE Digest Submission Data

# ECCE level



~1500  
submissions  
in 2021

# Electric Machine Statistics

- **218** digests submitted.

(234 (2020), 249 (2019), 252 (2018) , 186(2017), 245(2016), 203(2015), 201(2014)).

- **141** digests are accepted.

(173(2020), 183(2019), 189(2018), 140(2017), 151(2016), 141(2015), 137(2014))

- **65%** Acceptance ratio

(74% (2020), 71% (2019), 75%(2018), 75%(2017), 62%(2016), 69%(2015))

Strong submission despite COVID challenges

In even years, a number of digests is high because IEMDC is in odd years.



# Electrical Machine Sessions

- 25 Oral Sessions (21 in 2020, 21 in 2019, 23 in 2018, 20 in 2017, 18, 19)
- All oral session prerecorded
- With the move to virtual sessions, some papers were withdrawn

# 3. Old Business

# Awards

- Andrew W. Smith Outstanding Young Member Achievement Award (Deadline: March 15):
- Outstanding Young Member Service Award (Deadline: March 15)
- Distinguished Service Award (Deadline: March 15)
- Outstanding Achievement Award (Deadline: March 15)
- Kliman Award (Deadline: June 1)
- IAS Distinguished Lecturers (Deadline: March 31)
- IEEE Fellow (Deadline: March 1)
- We can see 2020 recipients in IAS web site
  
- (Approximate deadline)

IAS members <35  
years old

**IEEE PES Cyril Veinott Electromechanical Energy Conversion Award Prof. Bulent Sarlioglu “For contributions to the design, development, and manufacturing of electric motors and drives for industrial and aerospace applications”**

## Winners of 7<sup>th</sup> Nagamori Awards in EMC members

<b>Leila Parsa</b>	University of California, Santa
<b>Ronghai Qu</b>	Huazhong University of Science & Technology

- Fields of **motors**, actuators and, etc.
- mid-career researchers or development engineers no more than 30 years after the Bachelor’s degree.

# 4.Subcommittee Report

# 2021 EMC Prize Paper Awards

*(for Papers presented at ECCE 2020)*



# Selection Process

- 15 top papers with highest ranking from digest review process selected for full review by panel
- 6 member committee of distinguished reviewers
  - Good Mix of industry (3) and academia (3)
  - Previous committee chairs, paper award winners, subject matter Experts
    - **Prof. Akira Chiba**
    - **Prof. Aldo Boglietti**
    - **Dr. Bruno Lequesne**
    - **Dr. Mircea Popescu**
    - **Prof. Wen Soong**
    - **Dr. Haran Karmaker**

# Third Prize

***Authors: Joachim Van Verdegheem and Bruno Dehez***

***Paper Title: “Fully Passively Levitated Self-Bearing Machines with Combined Windings”***

***Affiliation: Université catholique de Louvain (UCLouvain), Louvain-la-Neuve, Belgium***



# Second Prize

*Authors: Le Chang, Woongkul Lee, Thomas Jahns and Kim Jihyun*

*Paper Title: “Comparative Analysis of PWM Power Losses in IPM Machines with Different Modulation Schemes Using Wide-Bandgap-Based Inverters”*

*Affiliation: Wisconsin Electric Machines and Power Electronics Consortium (WEMPEC),*

*University of Wisconsin- Madison, Madison, WI USA, and General Motors Global Propulsion Systems, Pontiac, MI USA*

# First Prize

*Authors: Jaehoon Shin, Yonghyun Park and Sang Bin Lee*

*Paper Title: “Flux-based Detection and Classification of Induction Motor Eccentricity, Rotor Cage, and Load Defects”*

*Affiliation: Department of Electrical Engineering, Korea University, Seoul, Korea*

# Standards

Standard sub committee  
Chair Dr. Haran Karmaker



# IAS EMC Standards

## Project #1: IEEE P-11

*“IEEE Std. 11: IEEE Standard for Rotating Electric Machinery for Rail and Road Vehicles”*

- WG Chair: Tim Burress
- Current Version: 2006
- PAR Approved: March 2015
- On-going revision since June 2015

## Project #2: IEEE P-1812

*“IEEE Std. 1812: IEEE Guide for Testing Permanent Magnet Machines”*

- WG Chair: Yao Duan
- Trial-use guide published: 2015
- On-going revision since August 2016
- PAR extended until 2023

## Project #3: IEEE P-1415

*“IEEE Std. 1415: Induction Machinery Maintenance Testing and Failure Analysis”*

- WG Chair: Pinjia Zhang
- Current Version: 2006
- PAR Approved: 2019
- On-going revision since Oct. 2019

## Project #4: IEEE P-620

*“IEEE Std. 1812: Guide for the Presentation of Thermal Limit Curves for Squirrel Cage Induction Machines”*

- WG Chair: Yao Duan
- Current revision: 1996 (reconfirmed 2008)
- PARs submitted August, 2019
- 3<sup>st</sup> Ballot completed in Oct. 2021, 1 comment to address

# IAS EMC Standards

## Project #5: IEEE P-252

### *IEEE Standard Test Procedure for Polyphase Induction Motors Having Liquid in the Magnetic Gap*

- PAR submitted August 31, 2018
- Membership Recruiting is Going on
- Interested Members contact:
  - Yao Duan [yao.duan@ieee.org](mailto:yao.duan@ieee.org)
  - Haran Karmaker [h.karmaker@ieee.org](mailto:h.karmaker@ieee.org)

## Project #6: IEEE P-114

### *IEEE Standard Test Procedure for Single-Phase Induction Motors*

PAR approved September 26, 2021

- WG Chair: Maher Al-Badri
- Membership Recruiting is Going on
- Interested Members contact:
  - Maher Al-Badri [albadri@ieee.org](mailto:albadri@ieee.org)
  - Haran Karmaker [h.karmaker@ieee.org](mailto:h.karmaker@ieee.org)

# 5. ECCE 2021: Session Reports

*Feedback from session chairs on EMC sessions completed as of time of this meeting*

# EMC Sessions and Chairs of ECCE 2020! ½

## Thank you for serving as Chair!

2021

<b>Se</b>	<b>Session Title</b>	<b>Session Chair</b>
G01	Electric Machines in Transportation	Nick Simpson
G02	Permanent Magnet Machines 1	Silvio Vaschetto
G03	Modeling of Electric Machines	Nicola Bianchi
G04	Permanent Magnet Machines 2	Eric Severson
G05	Electric Machines: Fault Analysis	Jose Antonino-Daviu
G06	Thermal Analysis of Electric Machines	Silvio Vaschetto
G07	Electric Machines Materials and	Shanelle Foster
G08	Loss Analysis in Electric Machines	Nick Simpson
G09	Noise and Vibration in Electric	Jose Antonino-Daviu
G10	High Speed and Bearingless Machines	Eric Severson
G11	Electrical Machines 1	Nichola Bianchi
G12	Electrical Machines 2	Andrea Cavagnino
G13	Electrical Machines 3	Gerd Bamerdorfer



# EMC Sessions and Chairs of ECCE 2020! 2/2

## Thank you for serving as Chair!

<b>G14</b>	<b>Modeling of Electric Machines 2</b>	<b>Gerd Bamerdorfer</b>
<b>G15</b>	<b>IPMSM and Synchronous Reluctance</b>	<b>Prerit Pramod</b>
<b>G16</b>	<b>Other Synchronous Machines 1</b>	<b>Prerit Pramod</b>
<b>G17</b>	<b>Other Synchronous Machines 2</b>	<b>Andrea Cavagnino</b>
<b>G18</b>	<b>Switched reluctance and flux switching</b>	<b>Giulio De Donato</b>
<b>G19</b>	<b>Actuators, Axial Flux and Linear</b>	<b>Giulio De Donato</b>
<b>G21</b>	<b>Noise and Vibration in Electric</b>	<b>David Reigosa</b>
<b>G20</b>	<b>Electrical Machines 4</b>	<b>Rukmi Dutta</b>
<b>G22</b>	<b>Modeling of Electric Machines 3</b>	<b>Greg Heins</b>
<b>G23</b>	<b>High Speed Machines 1</b>	<b>Rajesh Deodhar</b>
<b>G24</b>	<b>Electrical Machines 5</b>	<b>Rukmi Dutta</b>
<b>G25</b>	<b>High Speed Machines 2</b>	<b>Greg Heins</b>

In accordance to the rules provided at the session Chairs, all the papers has to be considered 'SHOW' because the authors answered to the questions before the end of the conference. Please note that only two papers received questions from the attendees, for the other I did at least one question. In my feeling, this fact proves that the asynchronous Q/A mode did not work at all!

Hoping to attend to the online meeting, I wish you a fruitful discussion and a good time. by A.C.

# 6. New Business – 2022 EMC Officers

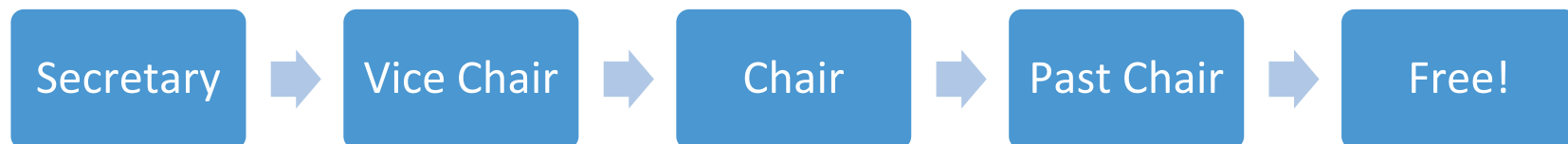


# EMC Officers

## 2021 Committee Officers

- **Chair:** Prof. Akira Chiba ([chiba@ee.e.titech.ac.jp](mailto:chiba@ee.e.titech.ac.jp))
- **Vice Chair:** Dr. Greg Heins ([gregheins@ieee.org](mailto:gregheins@ieee.org))
- **Secretary:** Prof. Rukmi Dutta ([rukmidutta@ieee.org](mailto:rukmidutta@ieee.org))
- **Past Chair:** Dr. Emmanuel Agamloh ([eagamloh@ieee.org](mailto:eagamloh@ieee.org))

# Role Rotations



- EMC promotes positions every two years

## Section IV. C. 4

### C. Election, Appointment and Term of Office

1. All Committee officers shall normally serve a two-year term of office commencing on January 1.
2. The Chair will be succeeded by the Vice-Chair.
3. The Vice-Chair will be succeeded by the Secretary.
4. Election of officers is conducted at the Annual EMC Meeting, (section VI). Every second year the Nominating Subcommittee will propose a slate of one or more candidates for the office of Secretary, as discussed in section V. The Nominating committee will accept suggestions for nominations for the Secretary up to 2 months before the annual meeting. Nominations will not be accepted from the floor at the annual meeting. In the intervening years, a motion will be held to continue with the existing executive committee.

# Proposed Candidate for Secretary

## Giulio De Donato

- PhD 2007, Univ of Rome, Italy.
- 2007 – present: University of Rome, “La Sapienza,” Associate Professor.
- Associate Editor, IEEE Trans IA (2017 to present)
- Associate Editor for IEEE Transactions on Power Electronics (2020- present)
- Guest Associate Editor for IEEE Journal on Emerging and Selected Topics in Power Electronics, special issue “Electric Machine Drives and Converters for Automotive Applications”, from March 2020 to March 2021
- ECCE Track G Topic Chair - various years 2014-
- ECCE Track G Session Chair – various years
- Publications highlights: at least 21 journals, several conference publications



Dr. Giulio De Donato

# Motion to Approve Slate of Officers

## 2022 Committee Officers

- **Chair:** Dr. Greg Heins ([gregheins@ieee.org](mailto:gregheins@ieee.org))
- **Vice Chair:** Prof. Rukmi Dutta ([rukmidutta@ieee.org](mailto:rukmidutta@ieee.org))
- **Secretary:** Dr. Giulio De Donato ([giulio.dedonato@uniroma1.it](mailto:giulio.dedonato@uniroma1.it))
- **Past Chair:** Prof. Akira Chiba ([chiba@ee.e.titech.ac.jp](mailto:chiba@ee.e.titech.ac.jp))

**It is hereby moved that the house accepts the above slate of Candidates as officers of the EMC for the Year 2022**

# 7. Future Conference Organization



# ECCE 2022 Update



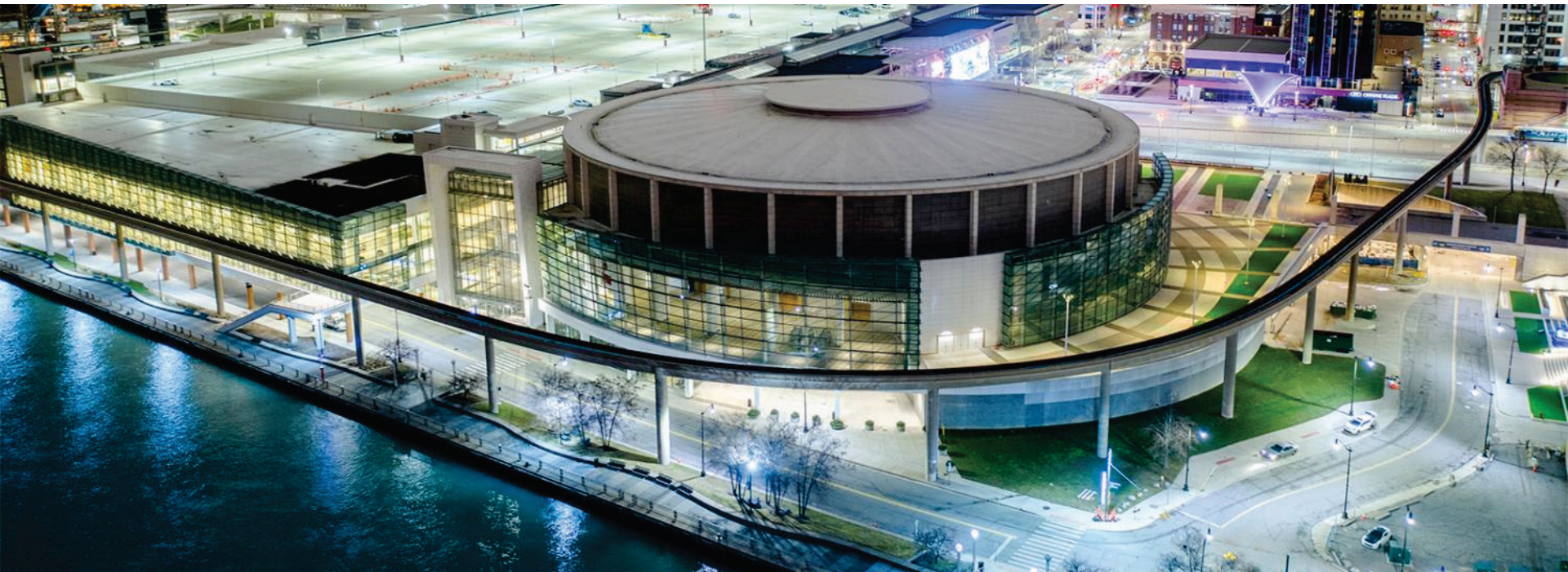
IEEE ENERGY CONVERSION CONGRESS & EXPO



 Detroit, Michigan, USA  Oct. 9-13

# Motor City - Detroit

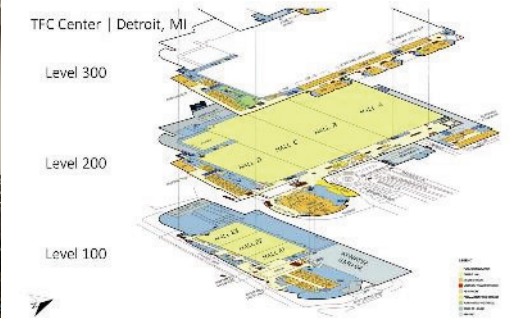
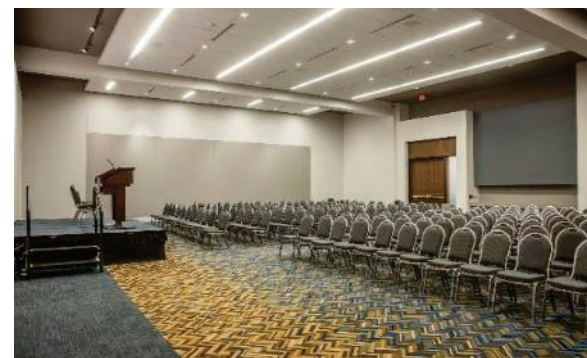
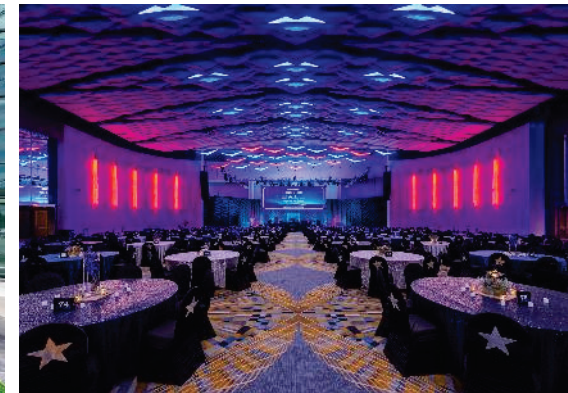
- Venue : Detroit, Michigan (TCF Center)
- Dates : October 9-13, 2022





# TCF Convention Center:

- Award winning TCF Center
- Waterfront and outdoor river view terraces
- Excellent facilities



# Hotel #1:

- Detroit Marriott at the Renaissance Center

Nice hotel at the landmark GM Renaissance Center

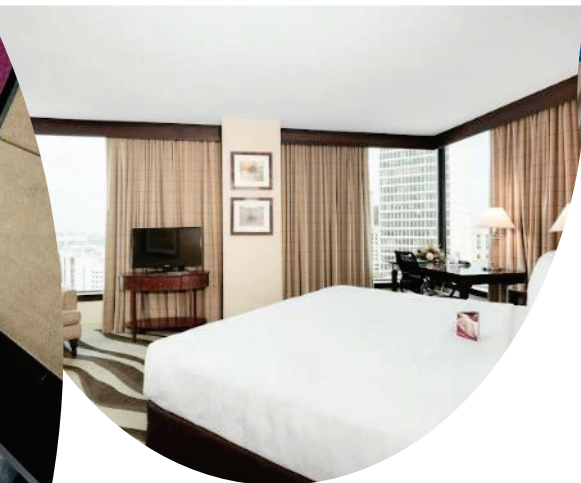




## Hotel #2:

# Crowne Plaza Detroit Downtown Riverfront

2nd hotel with nice riverfront,  
and excellent amenities



# Attractions:

- Henry Ford Museum of American Innovation
  - Iconic Museum
  - ECCE 2022 will hold Industry Networking Event in the Henry Ford Museum !!





# Attractions:

City of Detroit has many attractions !

- Ford Museum
- Motown Museum
- GM Renaissance Center
- Downtown Riverfront, River Tours
- Eastern Market
- Ford Piquette Avenue Plant
- Detroit Institute of Arts
- Detroit Jazz Festival
- Fox Theatre



# Calendar: Important dates

For details visit our website:  
<http://www.ieee-ecce.org/2022/>

- Jan. 15<sup>th</sup>, 2022 – Deadline for digest submissions
- May 1<sup>st</sup>, 2022 –Decision notification for Digests
- Feb 11<sup>th</sup>, 2022 – Deadline for Tutorials
- April 8<sup>th</sup>, 2022 – Decision Notification for Tutorials
- April 1<sup>st</sup>, 2022 – Deadline for Special Sessions
- May 20<sup>th</sup>, 2022 – Decision Notification for Special Sessions
- July 1, 2022:
  - Final papers with copyright forms
  - Full tutorial Materials Due
  - Special Session Plans Due





# ECCE 2022 Team (interim)

General Chair: Emmanuel Agamloh

Finance Chair: Shanelle Foster

TPC Co-Chairs: Navid Zargari, Annette Muetze, Mohammad Islam, Andrea Cavagnino,  
Gerry Moschopoulos, Brandon Grainger

Publication Chairs: Jiangbiao He, Xiaonan Lu, Silvio Vaschetto

Local Chairs: Abraham Gebregergis, Al-Thaddeus Avestruz

Exhibit Chairs: David Morrison, Grant Pitel

Industry Partnership Chairs: Avoki Omekanda, Maz Chowdhury, Joseph Song-Manguelle

Tutorial Chairs: Pete Wung, Xu She, Xiaonan Lu

Special Session Chair: Yue Cao, Sara Roggia

Publicity Chairs: Zheyu Zhang, Zhi (George) Gao

Plenary Session Chair: Yunwei (Ryan) Li, John Shen

Student Activities Chair: Xiu Yao, TBD

Electronic Media Chair: Anant Singh

Webmaster: Dong Cao, Yuan Li

Women in Engineering Chairs: Norma Anglani, Lijun, He; Jin Ye,

Awards Chair: Akshay Rathore, TBD

**We need volunteers, TCs, VCs, Reviewers!!**



Promotional video link:

[https://www.ieee-ecce.org/2022/wp-content/uploads/sites/9/2021/09/ECCE-2022-Publicity-Video.mp4?\\_=1](https://www.ieee-ecce.org/2022/wp-content/uploads/sites/9/2021/09/ECCE-2022-Publicity-Video.mp4?_=1)



See you in Detroit, October 9-13, 2022!



- **ECCE Vice Chairs: Dr. Greg Heins and Rukmi Dutta**

**Topic Chair Volunteers - hand in your  
business cards !!**

**We can not do like this way this year.**



EMC members will receive Microsoft survey form as a link via an Email from us. **Kindly complete the Form when you receive it.**

### ECCE 2022 Volunteering options

6. Do you wish to serve as a Topic Chair (TC) and/or as a reviewer for ECCE 2022? \*

- Yes
- No
- Maybe

7. Which role will you prefer? \*

- Topic chair (TC)
- Reviewer
- Both

8. What is your preferred name for inclusion in the ECCE program? \*

Enter your answer

## Microsoft Form



# ACEMP-OPTIM 2021

**18<sup>th</sup> Edition of the OPTIM Conference,  
4<sup>th</sup> edition of the ACEMP-OPTIM Joint International Conference**

**Online (Brasov, Romania), September 2-3, 2021**



# Introduction

**ACEMP-OPTIM 2021** has been organized jointly by five faculties of electrical engineering which incorporate about 5000 students in Power Electrical and Electronics Engineering (with the first one as the host):

- Transilvania University of Brasov
  - Politehnica University of Timisoara
  - Technical University of Cluj-Napoca
  - Atılım University, Ankara
  - Middle East Technical University, Ankara
- 
- ACEMP-OPTIM 2021 joint conference was technically sponsored by IEEE through **IES, IAS, PELS, IEEE Turkey, IEEE Romania**.
  - The technical spectrum of OPTIM-ACEMP 2021 was similar in breadth to IEEE-IES, -IAS, -PELS meetings, though at a reduced scale, as expected.
  - The official language was English, and the paper format was that of IEEE; only full-length papers were accepted from start and then reviewed by at least 3 reviewers and an advocate (if necessary).



# Committee Officers

**Conference General Chair:**

Marcian CIRSTEA, Anglia Ruskin University, Cambridge, UK

H. Bülent ERTAN, Atılım University & Middle East Technical University, Ankara, TR

**Conference Vice-Chairs:**

Ion BOLDEA, Politehnica University of Timisoara, RO

Bulent SARLIOGLU, University of Wisconsin-Madison, USA

**Conference Program Chair:**

Mihai CERNAT, Transilvania University of Brasov, RO

**Conference Program Vice-Chairs:**

Carmen GERIGAN, Transilvania University of Brasov, RO

Ozan KEYSAN, Middle East Technical University, Ankara, TR

**Conference IT Chairs:**

Razvan DINITA, Anglia Ruskin University, Cambridge, UK

Cosmin BALABAN, Romania

**Local Organizing Committee:**

Lia Elena ACIU, Transilvania University of Brasov, RO

Ioan SERBAN, Transilvania University of Brasov, RO

Elena HELEREA, Transilvania University of Brasov, RO

**Local Arrangements:**

Transilvania University of Brasov, RO



# Technical Tracks

- **TT1: Power Systems and Electromagnetics**
- **TT2: Electrical Machines, Industrial Drives and Control**
- **TT3: Power Electronics and Power Conversion**
- **TT4: Renewable Electric Energy Conversion, Processing and Storage**
- **TT5: Applied Electronics, Mechatronics, Control and Automation**
- **TT6: Electrical Engineering Education and Emerging Technologies**
- **Special session: Diagnostic and Applications of Electrical Discharges**



# Paper Review

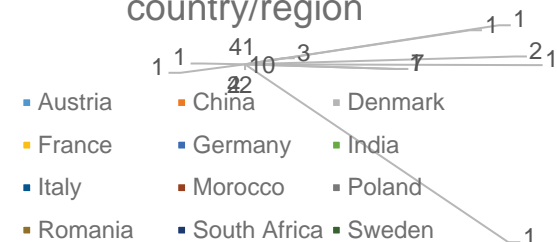
- We did receive 86 papers from 17 countries (1-Austria, 1-Bulgaria, 1-China, 2-Denmark, 1-France, 11-Germany, 4-India, 4-Italy, 1-Morocco, 1-Norway, 1-Poland, 43-Romania, 3-South Africa, 1-Sweden, 8-Turkey, 1-Ukraine, 2-USA) with 214 authors.
- 89 reviewers helped us;
- Included in the final program: 76 papers (88% of papers submitted) from 15 countries: (1-Austria, 1-China, 2-Denmark, 1-France, 10-Germany, 2-India, 4-Italy, 1-Morocco, 1-Poland, 41-Romania, 3-South Africa, 1-Sweden, 7-Turkey, 1-Ukraine, 2-USA) with 187 authors.

## The final program contained 76 papers and consisted in 7 sections:

- **Power Systems and Electromagnetics (5 papers)**
- **Electrical Machines, Industrial Drives and Control (30 papers)**
- **Power Electronics and Power Conversion (17 papers)**
- **Renewable Electric Energy Conversion, Proccession and Storage (6 papers)**
- **Applied Electronics, Mechatronics, Control and Automation (8 papers)**
- **Electrical Engineering Education and Emerging Technologies (5 papers)**
- **Diagnostic and Applications of Electrical Discharges (5 papers)**

and were presented synchronously based on slides in 15 online sessions of 2-hours each. We used 4 rooms: 1 plenary room, 3 parallel session rooms.

Number of papers by country/region



# Keynote

- **(KA1) Prof. Ronghai Qu**, Fellow, IEEE; IEEE IAS Distinguished Lecturer; Huazhong University of Science and Technology, Wuhan, China  
“Highly-compacted Electrical Machines with Dual-mechanical-port & Dual-electrical-port”
- **(KA2) Prof. Akira Chiba**, Fellow, IEEE; Tokyo Institute of Technology, Japan  
“Bearingless and Reluctance motors”
- **(KA3) Prof. Frede Blaabjerg**, Fellow, IEEE; Aalborg University, Denmark  
“Power Electronics Technology – Quo Vadis”
- **(KA4) Dr. Otilia Boaghe**, Engineer at ARM Ltd, Cambridge, UK:  
“Verification of RISC processors – challenges with innovative solutions”
- **(KA5) Dr. Christian von Albrichsfeld**, Head of Continental’s Automotive Eng. (Romania).  
“Current Megatrends in Automotive Industry and Its Effects on Vehicle Architecture”
- **(KA6) Prof. Babak Fahimi**, Fellow, IEEE; University of Texas at Dallas, USA  
“Motor Whisperer : On the Art of Dialogue with Electric Machinery”
- **(KA7) Prof. Bulent Sarlioglu**, Senior Member, IEEE; IEEE IAS Distinguished Lecturer, University of Wisconsin–Madison, USA  
“Re-emergence of Current Source Inverters using Wide Bandgap Devices and Comparison with Voltage Source Inverters”

# Final Conference Summary and 2023

- All papers were presented, there were no no-show papers.
- The USB memory stick of the Proceedings of ACEMP-OPTIM 2021 was not produced (IEEE Catalog Number: CFP1922D-USB, ISBN: 978-1-5386-7686-8). However, the registered participants were provided with online access to the papers.
- The online only ACEMP-OPTIM 2021 Conference was hosted by Transilvania University of Brasov on September 2-3, 2021.
- We did have 120 registered participants (72 of whom were IEEE members).

## Next ACEMP-OPTIM 2023

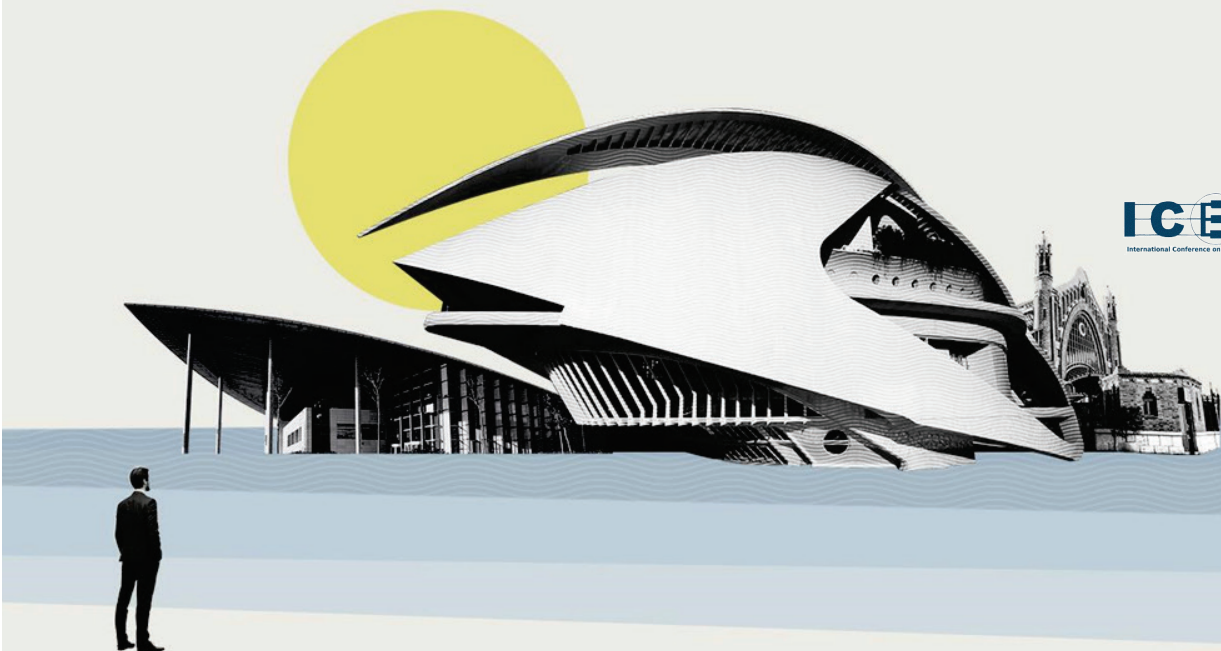
- **The next joint event is planned as “ACEMP-OPTIM 2023”, due to take place in Turkey, end of August 2023 (contacts: Prof. Dr. H. Bülent Ertan, TR; Prof. Dr. Marcian Cirstea, UK; Dr. Carmen Gerigan, RO; Prof. Dr. Mihai Cernat, RO; and Dr. Bulent Sarlioglu, Madison-Wisconsin, USA). The first Call for papers with location, deadlines, etc. will be launched around November 2021.**

2021  
Jose



# XXV International Conference on Electrical Machines (ICEM2022)

Valencia Conference Centre  
Valencia - SPAIN  
September 5-8, 2022



[www.icem.cc/2022](http://www.icem.cc/2022)

Organized by:



ITE  
INSTITUTO TECNOLÓGICO DE  
LA ENERGÍA



UNIVERSITAT  
POLITÀCNICA  
DE VALÈNCIA

With support from:



Technical co-sponsors:





# VALÈNCIA

- Valencia was founded in 138 BC
- Third largest city in Spain
- Population < 1,000,000
- Average temperature 19C
- Largest port on the Mediterranean western coast
- Birthplace of the famous dish Paella
- Turia Gardens (former river Turia), from flooded area to Europe's largest urban park

[www.icem.cc/2022](http://www.icem.cc/2022)

# HOW TO GET?



**VLC** VALÈNCIA  
CONVENTION BUREAU  
[www.icem.cc/2022](http://www.icem.cc/2022)



# VENUE: VALÈNCIA CONFERENCE CENTRE

[www.icem.cc/2022](http://www.icem.cc/2022)



## València Conference Centre

- World's Best Convention Centre in 2010 & 2018
- 3 auditoria (1,481; 500 & 259 pax. each)
- 8 break out rooms
- 5 multipurpose rooms
- 2.500 m2 exhibition area
- WIFI for 3.000 devices
- Latest generation projectors with laser and DLP technology
- Up to 21 additional meeting rooms at hotels nearby
- SDG Project: aligned with the 17 UNO Sustainable Development Goals.

[www.icem.cc/2022](http://www.icem.cc/2022)



## ACCOMODATION OPTIONS



### General Information:

- Excellent offer in 3, 4 & 5\*
- International hotel chains in the city:  
Meliá, NH, Starwood - Marriott
- Number of rooms: 8,174
- Number of beds: 15,746
- Average price in 5\*: 162€
- Average price in 4\*: 86€
- Average price in 3\*: 66€

[www.icem.cc/2022](http://www.icem.cc/2022)

## ICEM'2022 COMMITTEE:

- **General Co-Chairs:** José Antonino Daviu (SPAIN), Gérard-André Capolino (FRANCE)
- **Technical Program Chairs:** Aldo Boglietti (ITALY), Luca Zarri (ITALY), Anouar Belahcen (FINLAND), Carlos Platero (SPAIN), Shafigh Nategh (SWEDEN)
- **Tutorials Co-Chairs:** Ayman El-Refaie (USA), Antonios Kladas (GREECE), Javier Poza (SPAIN)
- **Special Session Co-Chairs:** Humberto Henao (FRANCE), Konstantinos Gyftakis (UK), Roque A. Osornio-Rios (MEXICO), Daniel Moríñigo Sotelo (SPAIN)
- **Student Forum Co-Chairs:** Óscar Duque (SPAIN), Mohamed Boussak (FRANCE), Epaminondas Mitronikas (GREECE), Joaquín González Norniella (SPAIN)
- **Exhibition Co-Chairs:** Richard Grisel (FRANCE), Pedro Llovera-Segovia (SPAIN), Yujing Liu (SWEDEN)
- **Awards Chair:** Gérard-André Capolino (FRANCE)
- **Publication Co-Chairs:** Antonio Luque (SPAIN), Vicente Biot Monterde (SPAIN)
- **Local committee:** Marta García Pellicer, Alfredo Quijano López, Vicente Fuster Roig, Pedro Llovera Segovia, Ignacio Casado, Alejandro Almela, Luis Serrano, Daniel Moríñigo, Óscar Duque, Javier Poza, Francisco Blázquez, Joaquín González Norniella, Mario Durán, Ignacio González

[www.icem.cc/2022](http://www.icem.cc/2022)



## ICEM'2022 TECHNICAL TRACKS:

- 1. Rotating machines:** Antonio M Cardoso (Portugal), David Díaz Reigosa (Spain), Rukmi Dutta (Australia), Maarten Kamper (South Africa), Lassi Aarniovuori (Finland), Ignacio González Prieto (Spain)
- 1. Design Issues:** Giulio De Donato (Italy), Nouredine Takorabet (France), Ayman EL-Refaie (USA), Michael Galea (UK), Francisco Blázquez (Spain)
- 1. Special Machines:** Akira Chiba (Japan), Ronghai Qu (China), Michele Degano (UK)
- 1. Thermal and losses issues – Magnetic insulation materials:** Andrea Krings (Germany), Marco Cossale (Switzerland), Luca Ferraris (Italy), Nick Simpson (UK)
- 1. Electrical drives:** Gianmario Pellegrino (Italy), Hinkkanen Marko (Finland), Shafiq Odhano (UK), Radu Bojoi (Italy)
- 1. Diagnostic and condition monitoring:** Thomas Wolbank (Austria), Raphael Romary (France), Lucia Frosini (Italy), Sang Bin Lee (South Korea)

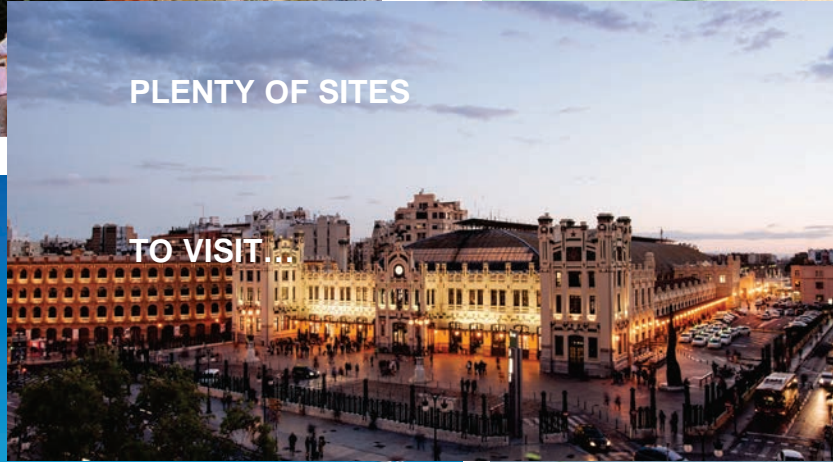
[www.icem.cc/2022](http://www.icem.cc/2022)



## Preliminary deadlines

- Submission of Special Sessions proposals:  
December 15, 2021
- Submission of Tutorials proposals:  
February 15, 2022
- Full paper submission:  
February 15, 2022
- Expected date for opening the paper submission system:  
Full paper notification.  
May 15, 2022<sup>3rd week of</sup>  
October 2021
- Final paper upload after revision:  
June 15, 2022





# WE WAIT FOR YOU IN VALENCIA!



[www.icem.cc/2022](http://www.icem.cc/2022)



# 8. Other Business





## IEEE Power and Energy Society Motor Sub-Committee



### Liaison report from PES motor sub committee

The IEEE PES Motor Sub-Committee (MSC) of the Electric Machinery Committee (EMC) organized a Panel Session and a Super Session during the 2021 IEEE- PES General Meeting on July 25-29 at Washington, DC, USA.

We had two panel sessions:

**Panel Session: Condition Monitoring, Advanced Topics, and Application of Big Data and IoT for Electrical Machines and Motor Drives - Part 2**

(Lijun He: [lijun.he.2012@ieee.org](mailto:lijun.he.2012@ieee.org) and Sanjib. K. Panda: [sanjib.kumar.panda@nus.edu.sg](mailto:sanjib.kumar.panda@nus.edu.sg))

**Panel Session: Condition Monitoring, Advanced Topics, and Application of Big Data and IoT for Electrical Machines and Motor Drives - Part 2**

(Lijun He: [lijun.he.2012@ieee.org](mailto:lijun.he.2012@ieee.org) and Sanjib. K. Panda: [sanjib.kumar.panda@nus.edu.sg](mailto:sanjib.kumar.panda@nus.edu.sg))







# Our Mission: Nagamori Foundation

2021  
Yasu

Support research and development engineers in the technical fields of motor, power generator, actuator, and related technologies.

## Nagamori Awards:

- 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 8<sup>th</sup> Nagamori Awards

Fields 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. <b><u>Entry to mid-career – normally defined as no more than 30 years of research after obtaining the Bachelor’s degree.</u></b>
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



# Application Guideline for the 8<sup>th</sup> Nagamori Awards

Application  
period

**November 01, 2021 - January 31, 2022**

Applications must be postmarked on, or before, January 31, 2022

Application  
condition

Documents must be submitted in either English or Japanese.

Awards &  
prizes

Nagamori Awards will be given to approximately six people. The winner of The Grand Nagamori Award will be announced during the Awards ceremony. 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**.

\*The 8<sup>th</sup> Nagamori Awards Ceremony will be held

on September 4, 2022



# Winners of The 7<sup>th</sup> Nagamori Awards

<b>Tobias Geyer</b>	R&D Platform Manager ABB System Drives
<b>Tom Oomen</b>	Full Professor, Department of Mechanical Engineering, Eindhoven University of Technology
<b>Leila Parsa</b>	Professor, Department of Electrical and Computer Engineering, University of California, Santa Cruz
<b>Ronghai Qu</b>	Professor, School of Electrical and Electronic Engineering, Huazhong University of Science & Technology
<b>Akshay Kumar Rathore</b>	Associate Professor, Graduate Program Director and Chair of Graduate Awards, Department of Electrical and Computer Engineering, Gina Cody School of Engineering and Computer Science, Concordia University
<b>Jun Ueda</b>	Professor, George W. Woodruff School of Mechanical Engineering, Georgia Institute of Technology

# 9. Motion to Adjourn