



# IEEE Industry Applications Society Electric Machines Committee (EMC) 2019 Annual Meeting Minutes

Room 337 Baltimore Convention Center, Baltimore, Maryland

Tuesday October 1, 2019, 4:30pm to 6pm

## Call to Order

EMC Chair, Dr. Emmanuel Agamloh called the meeting to order at 4:30 PM. Members were requested to update their records or write their contact details to be included in the members' database (roster). It was clarified that formally, attendees must be an IAS member to vote on IAS committee business and attendees were requested to indicate this in the roster.

## Announcement

Dr. Emmanuel Agamloh announced that Prof. Lipo is encountering some health issues and the EMC committee is extending best wishes to him for speedy recovery. A caring bridge website has been setup up and members were encouraged to visit the site to post a note of encouragement to Prof. Lipo. (<https://www.caringbridge.org/visit/tomlipo>).

## 1. Approval of the Agenda and 2018 Meeting Minutes

The minutes of the last meeting (2018) were distributed electronically prior to the current meeting (17th September 2019). A motion to accept the 2018 minutes was moved by Dr. Wen Soong and seconded by Prof. Pragasen Pillay. This motion was carried unanimously.

## 2. Chairman's Report (Dr. Emmanuel Agamloh)

### Member recognitions

The following members were recognized for their contributions:

- **Prof. Akira Chiba**
  - Nikola Tesla Award (2020), "*for contributions to bearing less and reluctance machines*"
- **Dr. Tomy Sebastian**
  - Nikola Tesla Award (2019), "*for contributions to the design and application of high-performance permanent magnet synchronous machines to electric power steering*"
- **Prof. Radu Bojoi**
  - Members Elevated to IEEE Fellow (class of 2020), "*for contributions to control of electrical drives and power electronics*"
- **Prof. David Dorrell**
  - Members Elevated to IEEE Fellow (class of 2020), "*for contributions to time efficient design methodology of rotating electrical machines*"
- **Prof. Silverio Bolognani**

- Members Elevated to IEEE Fellow (class of 2020), “for contributions to permanent magnet synchronous motor technology”
- **Dr. David Torrey**
  - Members Elevated to IEEE Fellow (class of 2020), “for contributions to modeling, design, and control of electric machines and drives”

### EMC IAS Transactions Papers Status Review - 2019

The current Associate Editors and reviewers were recognized and thanked for their service. The Associate Editors are:

- |                              |                  |
|------------------------------|------------------|
| • Antonio J. Marques Cardoso | Portugal         |
| • Akira Chiba                | Japan            |
| • Giulio De Donato           | Italy            |
| • Yao Duan                   | USA              |
| • Greg Heins                 | Australia        |
| • Rukmi Dutta                | Australia        |
| • Haran Karmaker             | USA              |
| • Gianmario Pellegrino       | Italy            |
| • Alberto Tessarolo          | Italy            |
| • Rajeev Vyas                | USA              |
| • Katsumi Yamazaki           | Japan            |
| • Luca Zarri                 | Italy (Retiring) |
| • Ronghai Qu                 | China            |
| • Zhang Pinjia               | China            |
| • Parsa Leila                | USA              |
| • Silvio Vaschetto           | Italy            |
| • Min-Fu Hsieh               | Taiwan           |
| • Peter Wung                 | USA              |

#### **Submission statistics**

- 208 Original submissions
- Several invitations pending
- EMC has highest all-time paper submissions of any IAS committee (1824)
- *Further information is available in the meeting slides on EMC website*

#### **Decision statistics**

- EMC Manuscripts submitted on or after Jan 1, 2018: Acceptance 55%
- *Further information is available in the meeting slides on EMC website*

#### **Process for prospective authors**

- EMC Members who wish to submit papers presented at an IAS sponsored conference for transactions
- Send Email to
  - Current Chair of EMC ([eagamloh@ieee.org](mailto:eagamloh@ieee.org)) – up to Dec 31, 2019
  - Incoming Chair, Akira Chiba, ([chiba@ee.e.titech.ac.jp](mailto:chiba@ee.e.titech.ac.jp)) – from January 1, 2020

- Include in your email:
  - Details of their paper, including the following information:
  - Corresponding author's first name and last name;
  - Corresponding author's email address (used for manuscript central account) and Affiliation
  - Title of manuscript
  - Conference name, and date of the conference where the paper was presented
- For more information visit EMC website:
- <http://sites.ieee.org/ias-emc/publications/>

*ECCE 2019 Technical Program Vice-Chairs Report (Prof. Akira Chiba)*

The Track G Chairs were recognized and thanked:

	18	19			
G01. General	10	6	Vyas, Rajeev	Wang, Yukai	
G02. Induction machines	12	19	Ma, Cong	Vaschetto, Silvio	
G03. IPMSM and Synchronous Reluctance Machines	30	29	Bianchi, Nicola	Dutta, Rukmi	Raminosoa, Tsarafidy
G04. Other Synchronous machines (PMSM and Wound Field)	22	29	Mese, Erkan	Rahman, Khwaja	Roggia, Sara
G05. Switched Reluctance and Flux Switching Machines	20	19	Deodhar, Rajesh	Kosaka, Takashi	
G06. Axial Flux Machines	5	9	De Donato, Giulio		
G07. Actuators, Linear, non-conventional, integrated machines and transformers	16	10	Antonino-Daviu, Jose	Ruddy, Bryan P.	
G08. Noise, Vibration, Reliability, Machine Diagnostics and Protection	19	27	Islam, Rakib	Foster, Shanelle	
G09. Materials, Losses, Efficiency, Thermal and Manufacturing, Converter issues	28	26	Bramerdorfer, Gerd	Leonardi, Franco	Munoz, Alfredo
G10. Modeling and Analysis Methods (including multi-physics)	20	20	Asama, Junichi	Husain, Tausif	Yamazaki, Katsumi
G11. Low Speed Direct Drive Machines, Magnetic Gearing	12	10	Qu, Ronghai	Lyra, Renato	
G12. High Speed Machines, Bearingless Machines, high frequency effects	17	16	Gruber, Wolfgang	Severson, Eric	
G13. Machines for Transportation (Automotive and Aerospace)	15	26	Andrea Cavagnio	Choi, Gilsu	Kato, Takashi
G14. Machines in Renewable Energy Applications	9	3	Arthur Wagner, J.		
total	235	249			

ECCE Group G Vice Chairs are generally Secretary and Vice Chair in EMC. In this year, Julia was nominated by ECCE Chairs and she joined as Group G Vice Chairs. In this year, new ECCE Chairs' policy is one Vice Chair for 100 digest submission.

### *ECCE review process*

- Topic Chairs were selected from volunteers who gave name cards in the last EMC meeting in ECCE. They were contacted to find their preference of G01-G14.
- Topic Chairs selected reviewers in the web system with five reviewers for each 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 you cannot review digests, please let us know in advance.
- One good practice: **If one is not well informed on topic of digest, please provide “Neutral” rather than “Reject”.**

### *EMC statistics:*

- **249** digests submitted.

(252 (2018), 186(2017), 245(2016), 203(2015), 201(2014)).

- **183** digests are accepted.

(189(2018), 140(2017), 151(2016), 141(2015), 137(2014))

- Acceptance ratio: **71%**

(75%(2018), 75%(2017), 62%(2016), 69%(2015))

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

The electric machines sessions were summarized:

- 21 Oral Sessions( 23 in 2018, 20 in 2017, 18, 19) 86 Papers
  - 4 sessions on Monday
  - 2 sessions Tuesday
  - 8 sessions Wednesday
  - 7 sessions Thursday
- 3 Poster Sessions 97 Papers (95 in 2018)
  - 1 Session: Monday
  - 2 Sessions: Tuesday

### **3. Old Business**

#### **Awards committee nominations**

It was noted that the EMC needs Awards Committee Volunteers.

Please contact EMC Vice Chair (Dr. Greg Heins [gregheins@ieee.org](mailto:gregheins@ieee.org)) for more information.

The Awards that are relevant to the EMC are:

- 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)

#### **Winners of 5th Nagamori Awards**

- ***Radu Bojoi (Romania) Professor, Politecnico di Torino***
- ***Ayman M. EL-Refaie (USA) Professor, Marquette University***
- ***Mohammad S. Islam (USA) Chief Scientist –Halla Mechatronics***
- ***Takashi Kato (Japan) Senior Manager, Nissan Motor Co., Ltd.***
- Jianxin Shen (China) Professor, Zhejiang University
- Bram Vanderborght (Belgium) Professor, Vrije Universiteit Brussel and Flanders Make

***Italic names are members of IAS EMC.***

The Nagamori award is for researchers in fields of motors, actuators and power generators, and their control methods, application technologies, etc.

It is open to mid-career researchers or development engineers no more than 30 years after the Bachelor's degree. Highlighted names are members of IAS EMC.

#### **4. Subcommittee reports**

##### **Prize Paper Awards Presentation,**

The following selection process was used for the ECCE prize paper awards:

- Eight top papers with the highest rankings from digest review process were selected for full review by panel.
- The panel included six-member committee of distinguished reviewers: balanced mix of industry (3) and academia (4), previous committee chairs, paper award winners
  - Prof. Akira Chiba
  - Dr. Bruno Lequesne
  - Prof. Sang Bin Lee
  - Dr. Mircea Popescu
  - Prof. Z-Q Zhu
  - Prof. Wen Soong
  - Dr. Haran Karmaker

The winning papers were:

##### ***First Prize***

*"Estimation of PWM-Induced Iron Loss in IPM Machines Incorporating the Impact of Flux Ripple Waveshape and Nonlinear Magnetic Characteristics"*, Le Chang, Thomas Jahns and Rolf Blissenbach. University of Wisconsin, Madison; GM Global Propulsion Systems

##### ***Second Prize***

*"Investigation of Efficiency Enhancement of an Ultra-high-speed Bearingless Motor at 100,000 r/min by High Switching Frequency Using SiC-MOSFET"*, Yu Fu, Masatsugu Takemoto, Satoshi Ogasawara and Koji Orikawa, Hokkaido University

##### ***Third Prize***

*"Design of an Electric Machine for a 48-V Mild Hybrid Vehicle"*, Alireza Fatemi, Thomas Nehl, Xiaofeng Yang, Lei Hao, Suresh Gopalakrishnan, Avoki Omekanda and Chandra Namuduri General Motors R&D

The recipients were recognized at the meeting and certificates were handed out to them.

##### **Standards update**

Dr. Emmanuel Agamloh suggested that working on standards is a good way (particularly for new members) to get involved with experienced members and the EMC needs members to be involved.

On-going projects:

- 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: Prof. Dan Ionel.
  - Trial-use guide published: 2015.
  - On-going revision since August 2016.

#### Upcoming Standards Projects

- IEEE P252 –IEEE Standard Test Procedure for Polyphase Induction Motors Having Liquid in the Magnetic Gap.
- IEEE P620 –IEEE Guide for the Presentation of Thermal Limit Curves for Squirrel Cage Induction Machines.
- PARs submitted August 31, 2018.
- Interested Members please contact:
  - Dr. Yao Duan [yao.duan@ieee.org](mailto:yao.duan@ieee.org)
  - Emmanuel Agamloh [eagamloh@ieee.org](mailto:eagamloh@ieee.org)

#### **5. ECCE Session Chair Reports (2019 ECCE sessions completed as of meeting time)**

Several session chairs and attendees reported on the sessions.

Some issues raised were

- Dr. Emmanuel Agamloh requested that we need to have senior members reviewing to keep the ECCE standards high.
- Dr. Renato Lyra suggested that we should avoid having session chairs that are presenting.
- Prof. Zi-Qiang Zhu asked if we can review which machines sessions were on the first day.
- An issue that a microphone was missing in one session was also raised

#### **6. New Business:**

##### **2020 Officers –EMC Past Chair Nominates Slate of Officers (Prof. Andy Knight)**

In his position as EMC Past-Chair, Prof. Andy Knight nominated the following officers of the Committee for 2020:

- 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: Dr Rukmi Dutta ([rukmidutta@ieee.org](mailto:rukmidutta@ieee.org))
- Past Chair: Prof. Emmanuel Agamloh ([eagamloh@ieee.org](mailto:eagamloh@ieee.org))

A motion to accept the nominations was moved by Prof. Pragasen Pillay and seconded by Prof. Joseph Olorunfemi Ojo. This motion was carried unanimously.

### IAS Publications - OJIA Process (Prof. Andy Knight)

Prof. Andy Knight presented information about the new Open Journal on Industrial Applications. It will be a Web Only Journal with no conference requirement.

The Editor in Chief is Pericle Zanchetta

#### ***How does it work?***

- Scope covers the entire scope of IAS
- Papers are open access – everyone can read them without firewall
- Anyone can submit, without conference requirements
  - Like most other journals
- Very fast response time
  - Papers will be accepted, accepted with minor changes, or rejected
  - Goal is to have papers on Xplore 7-8 weeks from submission date

#### ***Why are we launching this?***

- Response to EU “Plan S” and other funding agency open access mandates
- Potential to bring IAS to a wider global audience of readers and authors

#### ***Open Access Fees***

- If paper is accepted, authors must pay an Article Processing Charge (APC)
- Standard IEEE APC is \$1750 USD
- IEEE Members get a 5% discount
- IAS Members get a 15% discount: \$1487.50 per paper fee
- There are no page charges for overlength papers

#### ***Governance***

Editorial Board so Far

- 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



#### Steering Committee

- Prof. Andy Knight, (Publications Dept Chair, IEEE IAS)
- Prof. Pericle Zanchetta (Editor in Chief)
- Prof. Luca Solero (Deputy Editor in Chief)
- Prof. Fernando Briz
- Prof Jean Luc Schanen

#### *Next Steps*

- Need an Editor from IACC, MSDAD, I&CPSD
  - Based on Transactions submission types
  - Not sure of PID interest in open access
- Manuscript Central is Open
  - [mc.manuscriptcentral.com/oj-ia](http://mc.manuscriptcentral.com/oj-ia)

#### *ECCE 2019 Update (ECCE 2019 General Chair)*

The general chair (Prof. Yan-Fei Liu) did not attend. Dr. Yilmaz Sozer (technical program chair) provided a verbal report that the conference was going well and referred to some of details in the slides in the vice-chairs report (*see meeting slides on EMC website*).

#### *ECCE 2019 –Preparation for ECCE 2019 (Dr. Emmanuel Agamloh)*

Dr. Greg Heins and Dr. Rukmi Dutta will be ECCE 2019 TPC Vice-Chairs.

Dr. Emmanuel Agamloh requested volunteers to serve as Topic & Session Chairs for ECCE 2019.

Many members volunteered to serve. The committee thanks all prospective volunteers.

#### *Other Upcoming Conferences and Awards*

##### ***ICEM (Prof. Aldo Boglietti)***

International Conference on Electric Machines (ICEM) Gothenburg, Sweden, August 23-26 2020 (<https://icem2020.se/>)

##### ***ICEMS (Prof. Shu Yamamoto)***

International Conference on Electric Machines and Systems (ICEMS), Hamamatsu, Japan, November 24 – 27 2020 (<https://www.icems2020.com/>)

##### ***SLED (Prof. Bulent Sarlioglu)***

11th SLED 2020 - Madison, WI USA - Tentative date after ECCE: Oct 16th -17th, 2020

##### ***Nagamori Award (Yasushi Nishimura)***

Application period - November 01, 2019 - January 31, 2020 (<http://www.nagamori-f.org/en/>)

### Necrology – Prof. Bob Lorenz (presented by Prof. Tom Jahns)

Prof. Tom Jahns showed a presentation of photos of Prof. Bob Lorenz. He highlighted some things about Prof. Bob Lorenz in four main themes:

#### ***Service***

- Strong supporter of IAS and EMC (past chair).
- He was a regular traveler and supported colleagues throughout the world.

#### ***Technical***

- Many technical achievements (covered in special papers presented in technical sessions).

#### ***Community***

- Humanitarian missions in Africa in Guatemala.
- Habitat for humanity – long history of building houses for those less fortunate.

#### ***Personal***

- Wonderful wife to Sally and a very devoted father and grandfather.
- Meant so many things to so many people, our whole society and our whole world has been enriched.
- His spirit lives on and will do so for many years to come.

### **7. Adjournment**

A motion to adjourn the meeting was moved by Dr. Nabeel Demerdash and seconded by Dr. Michael Harke. This motion was carried unanimously.

Submitted by

Dr. Greg Heins

Secretary, IEEE IAS Electrical Machines Committee

October 19, 2019