



IEEE Industry Applications Society Electric Machines Committee (EMC) 2024 Annual Meeting Minutes

Room 125AB, Phoenix Convention Center, Phoenix, Arizona
Tuesday, October 22, 2024, 4:00 p.m. to 5:40 p.m.

Call to Order

EMC Chair Dr. Dutta called the meeting to order at 4:00 p.m. and welcomed the attendees.

1. Attendance and New Members (slides 4-5)

Members were requested to register their attendance and interest in volunteering for ECCE 2025 via QR codes shown in the presentation. It was reminded that attendees must be IAS members to vote on EMC business.

The recent status of the membership was provided and the new members were acknowledged.

2. Approval of the 2023 Meeting Minutes (slide 6)

The minutes of the 2023 meeting were circulated electronically prior to the meeting (December 24th 2023, and September 14th 2024, and October 21st 2024). A motion to accept the minutes was moved by Prof. Antonio Marques Cardoso and seconded by Dr. Philippe Wendling. The motion was carried unanimously.

3. Executive Reports

a. Chair Report, Prof. Rukmi Dutta

Prof. Dutta reported on the status of three publications governed by IAS, namely, Transactions on Industry Applications, Industry Applications Magazine, and Open Journal of Industry Applications.

a.1. Transactions on Industry Applications and Industry Applications Magazine

- **Paper submission statistics (slides 8-14):** Total number of submissions and EMC level submissions are increasing. The distribution of the countries that submit to TIA were summarized with China having nearly 50% of the submissions, followed by the UK, Japan, and Italy. The US has the lowest number of submissions. The acceptance rate is 57.2% which is higher than that of other societies. EMC has improved the length of time it takes for a final decision per submission.

- **Associate Editors** (slides 15-17): EMC AEs' workload is higher than other committees. Therefore, more AEs are being added and interested members can get in touch with Prof Dutta. The AEs in attendance were acknowledged and thanked. Three new AEs were appointed in 2023 (Gmyrek Zbigniew, Wolfgang Gruber, Gerd Bramerdorfer). The AE appointment process was outlined.
- **Other Actions** (slide 18): The chair requested that the members respond more quickly to review requests.
- **Paper submission Process** (slide 19): For major conferences (ECCE, IEMDC, etc.) all papers are eligible for submission for Transactions, provided that at least a 30% change is implemented. A submission link must be requested. If the paper is from an IAS technically co-sponsored conference, first, an invitation from the Editor in Chief needs to be obtained, and then the submission link can be requested.

a.2. Open Journal of Industry Applications, a new initiative (slides 20-21)

This journal has the highest impact factor among open access journals in IEEE (reported 2024). While accepted papers need to pay a fee for publication, IEEE and IAS members can get a discount.

a.3. EMC subcommittee updates (slide 22)

This year some updates were implemented in EMC subcommittees: Dr. Rafal Wrobel and Dr. Rajesh Deodhar were appointed as Chairs for the Award and the Standard Subcommittees, respectively. Dr. Alireza Fatemi was appointed as the EMC representative for IPCSD Conference Development Committee, and Dr. Xu Yang was re-appointed as the EMC representative for IPCSD Equity and Diversity Committee.

b. Vice Chair report, Prof. Giulio De Donato

b.1. ECCE 2024 (slides 23-29)

Three vice chairs worked on Track G in ECCE 2024: Giulio De Donato, Antonio Marques Cardoso, and Narges Taran.

The number of Topic Chairs (21 for track G) was reduced compared to previous years (about 33), therefore, the workload increased from 7 papers per TC to 11. The time to complete tasks was also shorter.

223 digests were submitted to Track G in ECCE 2024 with an acceptance rate of 66%.

Other ECCE 2024 statistics were discussed. The Vice Chair thanked the Topic Chairs for their hard work.

b.2. Updates for Track G Topics (slide 30)

The IPCSD department asked EMC officers for potentially updating the Track G topics, which are currently 15. Based on the number of papers submitted and arising technologies in our field in recent years, the topics were re-categorized and reduced to 13. The new proposal was presented and feedback from attendees was as follows:

- Dr. Hassan Eldeeb inquired about the Induction Machines topic. The Vice Chair responded that it is proposed to fall under the Traditional Electric Machines category, in NG5.

- Prof. Gianmario Pellegrino requested that NG7 be called Induction and Wound Field Machines, eliminating the wording “Traditional”.
- Prof. Ali Bazzi commented that the Track G is also co-managed by PELS-TC3 and is not a pure IAS Track, and whether this proposal was discussed with them. The Vice Chair responded that this is a proposal in progress and has not been discussed with TC3 yet. There is no deadline set yet to finalize the proposal.
- Prof. Ionel asked if the size of the committee matters, noting TC3 has about a third of the members of IAS EMC. The Vice Chair noted that regardless of the number of members, the two committees will be in agreement.
- Dr. Eric Severson asked about the reason behind combining transformers with electric machines in NG11. The Vice Chair responded that the idea was to group the topics that are receiving a limited number of submissions to rationalize the management of the topics. However, we will consider this comment.
- Prof. Iqbal Husain noted that transportation should include rails and ships as well, not just automotive
- Prof. Elena Lomonova asked about actuators classification. The Vice Chair responded that even though we have not been receiving many papers on actuators, we can include them in NG11. Prof. Lomonova also asked about the classification of “high voltage” applications. The Vice Chair responded it would be a new category, and the comment will be taken into account.
- Prof. Gianmario Pellegrino commented that the keywords “computation” and “simulation” are missing.
The Vice Chair noted that this proposal will be shared with EMC members, giving them sufficient time to reflect and get back to the officers before finalizing the proposal.

b.3. ECCE best reviewers’ recognition, a new initiative, (slide 31-33)

The proposal submitted to IAS Special Projects/Initiatives was approved to provide a discount for top 10 TIA EMC reviewers and top 10 Track G ECCE reviewers. Since Transactions best reviewers’ recognition is separately being organized for TIA, all 20 discounts were then dedicated to ECCE top reviewers. The selected top reviewers present at the meeting were acknowledged. After the conference, a recognition certificate will be sent to all 20 top ECCE Track G reviewers.

Professor Ojo asked about the details of the discount. The vice chair explained it is a \$100 conference registration discount, and in case a selected reviewer does not attend the conference, the discount can be awarded to other top reviewers. The initiative was to both encourage higher quality reviews and also to encourage early/mid career researchers to attend the conference.

The initiative was positively received by the department and is going to be adopted by other committees as well.

b.4. ECCE2024 Session Reports (slides 33-38)

- Dr. Alireza Fatemi, the session chair for S8—Electric Machines for Transportation, provided the following feedback: About 150-200 people attended. All papers were

followed by engaging discussion. Dr. Fatemi also chaired the poster session in the afternoon of Monday, similarly with good traffic and well-received papers.

- Prof. Andrea Cavagnino, the session chair for S19—Induction Machines: the session ran smoothly. There were about 50-55 attendees. All the speakers presented as planned and answered questions from the audience.
- Dr. Matthew Gardner, the session chair for S20—Axial Flux Machines: the session was held as planned with good discussion and questions from the audience.
- Prof. Nicola Bianchi, session chair for S32—IPM and Synchronous Machines I, also reported positively on the presentation and participation.

The Vice Chair thanked all the session chairs.

4. **Subcommittee Reports**

a. Awards subcommittee (slide 39-49)

Dr. Rafal Wrobel, the Award Subcommittee Chair, introduced himself. Then he gave an overview of the procedure for prize paper selection in the two categories within EMC (Transactions and ECCE prize papers). The awardees are as follows:

EMC Transactions on Industry Applications Prize Paper Awards 2024

- **First Prize:** “Automatic Classification of Field Winding Faults in Synchronous Motors Based on Bicoherence Image Segmentation and Higher Order Statistics of Stray Flux Signals”, by Miguel Enrique Iglesias Martinez, Jose Guerra Carmenate, Jose Antonino-Daviu, Larisa Dunai, Carlos A. Platero, J. Alberto Conejero, Pedro Fernandez de Cordoba, Universitat Politècnica de València, Valencia, Spain; received by Prof. Jose Antonino-Davi
- **Second Prize:** “Thermal Management Integrated With Flat Heat Pipes for In-Slot Stator Windings of Electric Motors”, by Chaofan Dong, Xuanyang Hu, Yuping Qian, Weilin Zhuge, Yangjun Zhang, Tsinghua University, Beijing, China. Received by Dr. Lu Zhao (on behalf of the authors),
- **Third Prize:** “Coupling Vibration Analytical Model and Vibration Suppression of Linear Motor Driven Free Piston Stirling Cryocoolers”, by Zhongli Xi, Xiaoqing Zhang, Han Jiang, Huazhong University of Science and Technology, Wuhan, China, received by Prof. Ronghai Qu (on behalf of the authors)

EMC ECCE Prize Paper Awards 2024 (for Papers presented at ECCE 2024)

- **First Prize:** “Cast or Additively Manufactured Coils with End Turn Enhanced Heat Transfer Surfaces for Spray or Jet Cooling”, by Dominick Sossong, Daniel Zdunek, Ian P. Brown, Illinois Institute of Technology, Chicago, IL, USA. Received by Prof. Ian Brown
- **Second Prize:** “A Study on Stator Winding Loss Distribution of Additively Manufactured Coils in Fractional Slot Concentrated Windings”, by Salar Koushan, Ayman EL-Refaie, Marquette University, Milwaukee, WI, USA. Received by both the authors

- **Third Prize:** “Research on A High Torque Density Axial-Radial Flux Permanent Magnet Machine to Avoid Stator Axial Movement”, by Yuhang Long, Zhanfeng Song, Zan Zheng, Tianjin University, Tianjin, China. Received by Jian Xiong from southeastern university, on behalf of the authors, who received the certificates after the meeting was concluded.

b. Standards subcommittee (slides 50-53)

The EMC Chair presented the Standards Report on behalf of the Standards Subcommittee Chair, Dr. Rajesh Deodhar. Currently there are six Standards in progress under IAS EMC. Their status was reviewed. The “IEEE Std. 11: IEEE Standard for Rotating Electric Machinery for Rail and Road Vehicles” is looking for a new chair and interested members can reach out to Dr. Deodhar and Prof. Dutta.

5. **Representatives’ Updates:** DEIC (Diversity, Equity and Inclusion Committee (slides 54-65))

The EMC Chair represented the report on behalf of Dr. Xu Yang.

6. **New Business**

6.a. 2025 Officers (slide 68)

The motion to approve the following slate of officers for 2025, similar to 2024, was moved by Prof. Fabio Giulii Capponi and seconded by Dr. Eric Severson and Prof. Akira Chiba, simultaneously. The motion was carried unanimously.

The approved EMC officers are as follows: Chair, Prof. Rukmi Dutta, Vice Chair, Prof. Giulio De Donato, Secretary, Dr. Narges Taran.

6.b. Reviewing/updating of Exec officers’ responsibilities – the VC role (slide 70)

Dr. Greg Heins (past chair) explained that the high workload on the executive officers has been an issue. One of the solutions is to appoint sub-committees, which has been very helpful in spreading the load. The Executive Officers are now proposing to make a slight change in the operating guidelines: removing the responsibility of chairing the Awards subcommittee (which has already been assigned to Dr. Wrobel) and instead adding planning and strategy development for the future growth of the EMC.

Prof. Dan Ionel asked if this change requires a new appointee. Dr. Heins clarified that there is no addition to the officers. One responsibility is removed from the Vice Chair and replaced by another. The motion was made by Dr. Hassan Eldeeb and seconded by Dr. Dean Patterson. The motion was carried unanimously.

6.c. ECCE 2025 (slides 72-80)

Prof. Iqbal Husain (general chair of ECCE 2025) presented the conference, which will be held in Philadelphia, PA, from the 19th to the 23rd of October 2025.

6.d. Other Upcoming Conferences – IAS annual meeting 2025, IEMDC, WEMDC, SDEMPED (slides 80-95)

- Dr. Avoki Omekanda, the general chair, presented the 2025 IAS Annual meeting, which will be held in New Taipei, Taiwan, June 15-20, 2025.

- Dr. Yao Duan, the general chair, presented IEMDC 2025, which will be held in Houston, TX, May 18 – 21.
- Dr. Giulio De Donato, on behalf of the organizers, presented WEMDCD 2025, which will be held in the University of Malta - Valletta Campus, 09 - 10 April 2025.
- Dr. Ali Bazzi, the general chair, presented SDEMPED 2025, which will be held in Dallas, Texas, 24-27 August 2025.

7. Other Business: Nagamori awards (slides 97-100)

Dr. Nishimura introduced the 11th Nagamori Awards and explained the application guidelines. The application period is from the 1st of November 2024 to 31st of January 2025. More information can be found at:

<https://www.nidec.com/en/nagamori-f/awards/applicatioguidelines.html>.

He then announced the 10th Nagamori Awards winners.

8. Adjournment

The chair asked the members if there was any further business or questions to be raised. Prof. Ionel asked about the period shown in the previous slides during which three papers from the US were submitted to TIA. The Chair clarified that the period was from October 2023 to October 2024. Prof. Ionel also asked whether Ph.D students were accepted as reviewers and that this would put them in peer status to the group of authors. The Chair and Vice Chair confirmed that this was the case.

A motion to adjourn the meeting was made by Dr. Ali Bazzi and seconded by Dr. Philippe Wendling. The motion was carried unanimously.

Submitted by Dr. Narges Taran
Secretary, IEEE IAS Electric Machines Committee
20th of December 2024