Please register your attendance and interest in volunteering for ECCE 2025









IEEE IAS Electric Machines Committee

2024 Committee Meeting Phoenix, Arizona

Room 125AB, Phoenix Convention Center Tuesday October 22nd, 4:00 pm to 5:40 pm.

Chair: Prof. Rukmi Dutta







Agenda

- 1. Attendance and membership update
- 2. Review and Approval of 2023 Committee Meeting Minutes
- 3. Executive Reports
 - a. Chair: Transactions Papers Status Review
 - b. Vice-Chair: ECCE 2023 Technical Program
- 4. Subcommittee Reports:
 - a. Awards
 - b. Standards
- 5. Representatives' updates:
 - a. DEIC updates
- New Business:
 - a. 2025 Officers
 - b. Reviewing/updating of Exec officers' responsibilities the VC role
 - c. ECCE 2025
 - d. Other Upcoming Conferences IAS annual meeting 2025, IEMDC, WEMDC, SDEMPED
- 7. Other Business
 - a. Nagamori awards
- 8. Adjournment







New Member Sign-Up

NEW MEMBER SIGN-UP:

- 1. All attendees registered for this meeting will automatically become EMC members
- 2. Alternatively, new members can sign-up following the indications provided at: https://site.ieee.org/ias-emc/member-subscriptions/

Note: Formally, you must be an IAS member to vote on IAS committee business.







New Members

- To date, the roster on IEEE LISTSERV has 398 members.
- A total of 24 (4 female) new members have joined us since the last EMC meeting.
- All joined directly on IEEE LISTSERV.
- Can any new members to EMC, please raise their hands to be welcomed?







Motion is invited to accept 2023 minutes for the record!

• Minutes were distributed electronically on 24th December 2023. No corrections were requested.

Minutes were recirculated again on 14th September 2024.

 Approved minutes will be available at IAS – EMC website: https://site.ieee.org/ias-emc/meeting-minutes/







ECCE 2024 Chair's Report

AProf Rukmi Dutta







Overview of IAS Publications IAS Owned

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







Transactions Paper Review Status

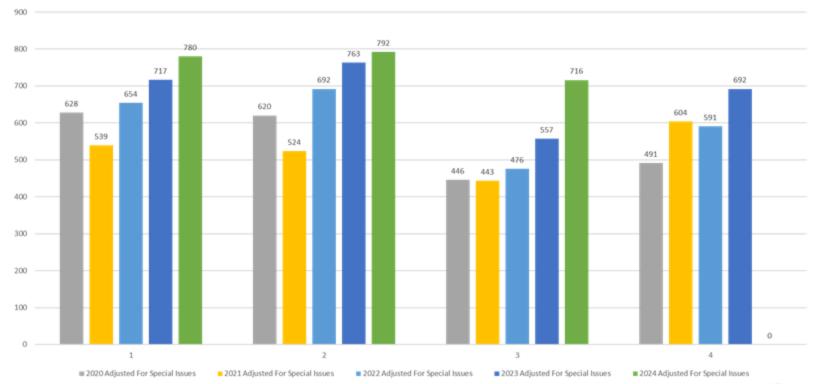






Submission to TIA

Quarterly Comparison









All Time and 12 Month Submission IPCSD

Manuscript Type	Submissions (All Time)	Submissions (12 Months) 2022-2023	Submissions (12 Months) 2023-2024
Electric Machines Committee	2,873	183	256
Industrial Drives Committee	1,408	73	112
Industrial Power Converter Committee	2,646	202	197
Power Electronic Devices and Components Committee	460	38	37
Renewable and Sustainable Energy Conversion Systems Committee	1,099	27	85
Transportation Systems Committee	564	46	81



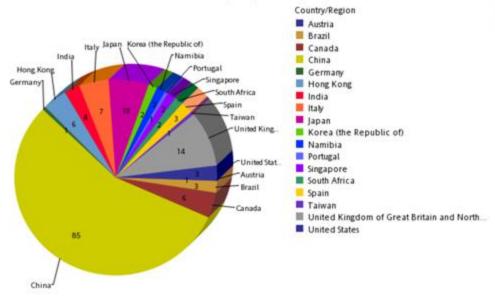




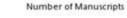
EMC paper statistics

Grouped by Country/Region Of Submission.





Country/Region of Submitting Author	Number of Manuscripts	Percentage of Total
Austria	1	0.7%
Brazil	3	2.0%
Canada	6	3.9%
China	85	55.6%
Germany	1	0.7%
Hong Kong	6	3.9%
India	4	2.6%
Italy	7	4.6%
Japan	10	6.5%
Korea (the Republic of)	2	1.3%
Namibia	2	1.3%
Portugal	1	0.7%
Singapore	2	1.3%
South Africa	2	1.3%
Spain	3	2.0%
Taiwan	1	0.7%
United Kingdom of Great Britain and Northern Ireland	14	9.2%
United States	3	2.0%
Total:	153	0.7%









Acceptance By Committee IPCSD(Last 12 Months)

Industrial Power Conversion Systems Department	Accepted in Magazine	Transactions	Reject	Acceptance Rate	Total
Electric Machines Committee	2	125	95	57.21%	222
Industrial Drives Committee		52	38	57.78%	90
Industrial Power Converter Committee	2	88	105	46.15%	195
Power Electronic Devices and Components Committee		27	11	71.05%	38
Renewable and Sustainable Energy Conversion Systems					
Committee	1	36	43	46.25%	80
Transportation Systems					
Committee		32	26	55.17%	58

IAC Total	40	702	614	51 500/	1265
IAS Total	48	703	614	51.50%	1305







Final Decision Time By Committee IPCSD (All Time and Last 12 Months)

Manuscript Type	Final Decision (12 Months) 2021-2022	Final Decision (12 Months) 2022-2023	Final Decision (12 Months) 2023-2024
Electric Machines Committee	157	174	138
Industrial Drives Committee	137	125	129
Industrial Power Converter	166	152	133
Committee			
Power Electronic Devices and	172	136	303
Components Committee			
Renewable and Sustainable Energy	144	166	149
Conversion Systems Committee			
Transportation Systems Committee	176	233	145







IPCSD	Number of AEs Per Committee	Papers Handled by the Committee in 2023-2024	Average Number of Papers Per AE
Electric Machines			
Committee	19.00	222.00	11.68
Industrial Drives			
Committee	16.00	90.00	5.63
Industrial Power			
Converter Committee	31.00	195.00	6.29
Power Electronic Devices			
and Components			
Committee	15.00	38.00	2.53
Renewable and Sustainable Energy Conversion Systems			
Committee	15.00	80.00	5.33
Transportation Systems			
Committee	13.00	58.00	4.46
IPCSD Total	109.00	683.00	6.27
IAS Total	254.00	1365.00	5.37







2024 Associate Editors

Udochukwu Bola Akuru

Gerd Bramerdorfer
Giulio De Donato

Alireza Fatemi
Matthew Gardner
Zbigniew Gmyrek
Wolfgang Gruber

Min-Fu Hsieh Takashi Kosaka

Antonio J. Marques Cardoso

Gyftakis

Gianmario Pellegrino
Eric Severson
Narges Taran
Silvio Vaschetto
Rajeev Vyas
Pinjia Zhang

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



Konstantinos





AE Appointment Process

AEs are appointed for a term of 2 years with an option to extend up to a maximum of 8 years

The selection process was based on:

- a. Ongoing work as a TC for major IAS- sponsored conferences (ECCE, IEMDC, ICEM, etc.)
- b. Performance as a reviewer for IAS TIA (EMC)
- c. Expertise alignment with EMC needs

We appointed 3 new AEs in 2024 to replace some of our outgoing AEs and add expertise in "high volume" areas. We plan to do so also in 2025.

New EMC AEs are Gmyrek Zbigniew, Wolfgang Gruber, Gerd Bramerdorfer



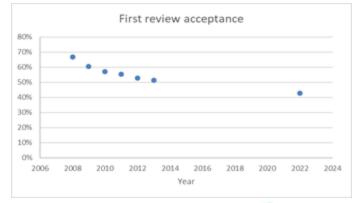




Actions

- 1. Increase the number of AEs to match society's average
- 2. Share with AEs their own statistics vs average It was done for 2023-2024
- 3. Ongoing need -reviewers to support the process

If you do receive a request for review, please respond ASAP even if you choose to decline.









Process for Prospective Authors

 To submit papers presented at an IAS-sponsored conference for IAS Transactions, you may use:

https://site.ieee.org/ias-emc/transactions-form/

For cosponsored conferences, please use the link only after receiving instructions from the TIA EiC.

- On manuscript submission, explain the differences between the conference and Transactions versions in the **cover letter**.
- For more information, visit the EMC website:

http://sites.ieee.org/ias-emc/publications/







Open Access Journal of Industry Applications



Impact factor 7.9 was released in 2024.

Web-only

If accepted, the authors must pay the article processing charge (APC).

5% discount for IEEE members.

20% discount for IAS members.

No page charge for overlength papers.

Proposals for Special Issues should be sent to:

Pericle Zanchetta (pericle.zanchetta@nottingham.ac.uk)

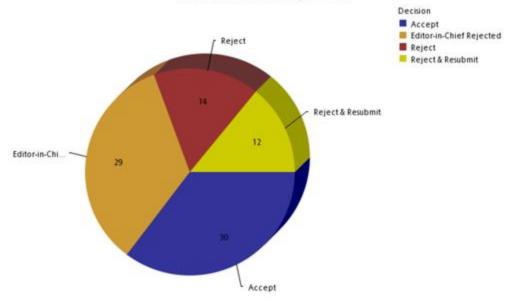






Information based on All Manuscripts, grouped by Manuscript Decision, whose submission date is Between Oct 1, 2023 and Oct 1, 2024.

Number of Manuscripts by Decision



Manuscript Decision	Number of Manuscripts	Percentage of Total
Accept	30	35.3 %
Reject	55	64.7 %
Total	85	100%

Number of Manuscripts1







EMC- Subcommittees and Representatives

- Chair Award Subcommittee: Rafal Wrobel, Newcastle upon Tyne, rafal.wrobel@newcastle.ac.uk
- Chair Standard Subcommittee: Rajesh Deodhar, England, UK; rajesh.deodhar@ieee.org
- EMC representative for IPCSD Conference Development Committee: Alireza Fatemi, Warren, US, alireza.fatemi@gm.com
- EMC representative for IPSCD Equity and Diversity Committee: Xu Yang, Michigan, US xu.yang@ieee.org







ECCE 2024 Vice-Chair's Report

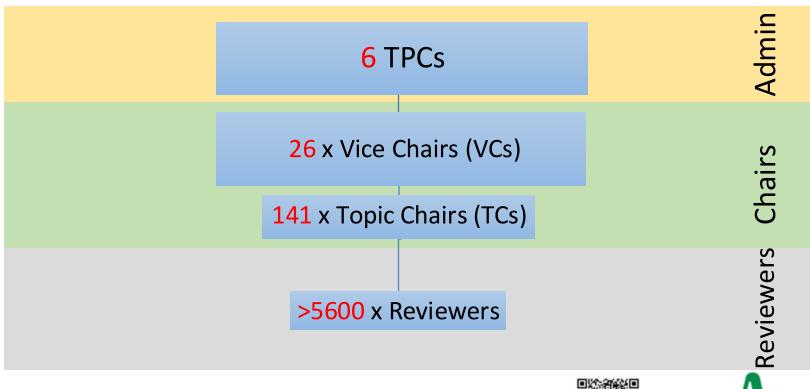






ECCE level

2024 ECCE Paper Review Management











ECCE Digest Submission Data

Edition		2 reviews	3 reviews	4 reviews	5 reviews	6 reviews	Total	Average reviews/paper
2024	Papers	7	196	688	791	2	1684*	4.3
	n. of reviews	14	588	2752	3955	12	7321	
2023	Papers	12	265	565	626	1	1585	4
	n. of reviews	24	795	2260	3130	6	6227	
2022	Papers		114	498	782		1394	4.5
	n. of reviews		342	1992	3910		6244	
2021	Papers		37	487	983	3	1510	4.6
	n. of reviews		111	1948	4915	18	6992	
2020	Papers		400	450	750		1600	4.2
	n. of reviews		1200	1800	3750		6750	
2019	Papers	8	226	572	943		1749	4.7
	n. of reviews	16	678	2288	4715		7697	
2018	Papers		79	406	1268		1753	4.7
	n. of reviews	242	756	2036	3105		6139	

^{*}Excludes Journal to conference and 2-page late submission







Review Process



- Based on an average workload of ~11 digests per Topic Chair (set by ECCE 2024 TPC, up from ~7 digests per TC in 2023), 21 TCs were selected from volunteers who expressed interest in the survey/attendance form at the EMC meeting in Nashville, 2023.
- Reviews started on 3rd of April and ended on 6th of May.
- TCs allocated 5 reviewers per paper from the ECCE database in the sci-review.com website.
- A few TCs had difficulties in fulfilling their responsibility, causing additional burden on the others.
- 98% of Track G papers received more than 3 reviews.
- 70% of Track G papers received 5 reviews.
- TPC accept/reject guideline: Digests with *wavg<=4.0 should be rejected unless the VCs/TC had strong reasons to accept. Track G cut-off was 4.2.
- Decisions by TCs by 8th May.
- Final decision by VCs by 10th May.
- Oral session organization finalized by 15th May.







2024 ECCE EMC Topic Chairs

EMC level

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G05	Lavanya Vadamodala
G06	Matthew Gardner
G06	Han Peng
G07	Federico Marcolini
G08	Konstantinos Gyftakis
G08	Maria Martinez Gomez
G09	Han Peng
G09	Federico Marcolini

G10	Takashi Kato
G11	Simone Ferrari
G11	Sara Roggia
G12	Jonathan Bird
G13	Wolfgang Gruber
G14	Vandana Rallabandi
G14	Alireza Fatemi
G15	Jonathan Bird

- G01 General
- **G02 Induction Machines**
- G03 IPMSM and Synchronous Reluctance Machines
- G04 Other Synchronous machines (PMSM and Wound Field)
- G05 Switched Reluctance and Flux Switching Machines
- **G06 Axial Flux Machines**
- G07 Actuators, Linear, non-conventional, integrated machines and transformers
- G08 Noise, Vibration, Reliability, Machine Diagnostics and Protection
- G09 Materials, Losses, Efficiency, Thermal and Manufacturing issues
- G10 Additive Manufacturing and other advanced manufacturing technologies
- G11 Modeling and Analysis Methods (including multiphysics)
- G12 Low Speed Direct Drive Machines, Magnetic Gearing
- G13 High Speed Machines, Bearingless Machines, high frequency effects
- G14 Machines for Transportation (Automotive and Aerospace)
- G15 Machines in Renewable Energy Applications

Vice-Chairs

Narges Taran Antonio Marques Cardoso Giulio De Donato

Thank you Topic Chairs!!







Electric Machines Statistics (Track G) EMC level

Year	Digest submitted	Digest accepted	Acceptance rate	Format
2024	223	163 (147*)	73% (66%*)	In-person
2023	224	158	70.5%	In-person
2022	218	143	69%	In-person
2021	218	141	65%	Online
2020	234	173	74%	Online
2019	249	183	71%	In-person
2018	252	189	75%	In-person
2017	186	140	75%	In-person
2016	245	151	62%	In-person
2015	203	141	69%	In-person

^{*} some papers were withdrawn after accepted.

5 Late breaking research paper submitted to Track G: 2 accepted and 3 rejected.





Electrical Machine Sessions



Year	Oral sessions	Poster sessions
2024	15	5
2023	15	4
2022	18 + 4 (remote sessions)	6
2021	25 (online)	
2020	21 (online)	
2019	21	
2018	23	

EMC ratio was similar to previous years.







Proposal for Updating Track G Topics

		2024 submitted
G01	General	3
G02	Induction Machines	9
G03	IPMSM and Synch Rel Mach	33
G04	Other Synch Mach	22
G05	Switched Rel and Flux Switch Mach	15
G06	Axial Flux Mach	17
G07	Actuators, linear, non conventional, integrated machines and transformers	7
G08	Noise, vibration, reliability, machine diagnostics and protection	19
G09	Materials, losses, efficiency, thermal and manufacturing issues	22
G10	Additive Manufacturing and other advanced manufacturing tech.	7
G11	Modelling and analysis methods of electrical machines (including multiphysics)	30
G12	Low speed direct drive machines, magnetic gearing	8
G13	High speed machines, bearingless machines, high frequency effects	8
G14	Machines for transportation (automotive and aerospace)	18
G15	Machines in renewable energy applications	5
	Total	223

Total	Total		
New topic	New topic title		
NG1	Permanent Magnet Synchronous Machines		
NG2	Synchronous Reluctance Machines (including PM assisted)		
NG3	Stator Excited Synchronous Machines		
NG4	Axial Flux Machines		
NG5	Traditional Electric Machines (Induction, Wound Field, etc.)		
NG6	Methodologies for Design, Optimization, Modeling, and Analysis of Electric Machines		
NG7	Noise, Vibration, Thermal, and Mechanical Issues of Electric Machines		
NG8	Reliability, Machine Diagnostics, and Protection		
NG9	Materials and Manufacturing of Electric Machines (including Additive)		
NG10	Machines for Transportation (Automotive and Aerospace)		
NG11	Unconventional Machines, Transformers, Magnetic Gears, Bearingless Machines		





ECCE Best Reviewer Recognition

- The EMC submitted two proposals to IAS Special Projects/Initiatives 2024 in February and received funding confirmation in March:
 - 1. Discount in ECCE 2024 registration for top 10 reviewers of TIA EMC papers and award certificates for three best reviewers.
 - 2. Discount in ECCE 2024 registration for top 10 reviewers of Track G papers of ECCE 2024.
- Track G TCs were asked to rate reviewers based on responsiveness and quality of reviews.
- After the EiC informed that a Transactions best reviewer prize is being organised for TIA, EMC officers decided to award the discounts to 20 ECCE reviewers rather than 10.
- 42 reviewers were shortlisted at the end of the review process and 20 were selected prioritizing early/mid career researchers, while considering geographical and gender balance.
- Awardees were provided a discount code in mid June to be used during registration to ECCE 2024.







ECCE Best Reviewer Recognition

Ahmed Hembel Joachim Van Verdeghem Milad Sadoughi

Ali Mohammadi Kyohei Kiyota Mostafa Ahmadi Darmani

Anvar Khamitov Lorenzo Perilli Rajesh Kumar

Chen-Pei Yi Matin Vatani Ravindra Bhide

Daniel Fernandez Matthew Johnson Seth Mcelhinney

Eva Teresa Serna Calvo Mbika Muteba Shovan Dey

Federica Graffeo Michiel Desmedt Giada Sala

Thank you to all the reviewers!







ECCE Best Reviewer Recognition



Industrial Power Conversion Systems Department

Electric Machines Committee

of the

IEEE Industry Applications Society

hereby recognizes

XXXX

as one of the best reviewers of manuscripts submitted to Truck G (Electric Machines) of the Energy Conversion Congress and Exposition (ECCE) 2024, The top reviewers have provided high-quality and timely reviews for multiple papers. Your expertise, time, and dedication are recognized and greatly appreciated.

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dolyn Dero Electric Machines Committee Chair IEEE Industry Applications Society



Onlyfer,2029

Awardees will be emailed a certificate after the conference.







ECCE 2024: Session Reports

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







EMC Sessions and Chairs of ECCE 2024! Thank you for serving as Chair!

Completed Oral Sessions

Sessions	Chairs
S8: Electric Machines for Transportation	Alireza Fatemi, Giulio De Donato
S19: Induction Machines	Andrea Cavagnino, Peng Peng
S20: Axial Flux Machines	Matthew C. Gardner, Greg Heins
S32: IPM and Synchronous Machines I	Nicola Bianchi, Gilsu Choi







EMC Sessions and Chairs of ECCE 2024! Thank you for serving as Chair!

Completed Poster Sessions

Sessions	Chairs
P1.9: Electric Machines 1	Alireza Fatemi
P2.7: Electric Machines 2	Greg Heins
P2.8: Electric Machines 3	Simone Ferrari
P3.9: Electric Machines 4	Silvio Vaschetto
P3.10: Electric Machines 5	Udochukwu B. Akuru







EMC Sessions and Chairs of ECCE 2024! Thank you for serving as Chair!

Remaining Oral Sessions

Sessions	Chairs
S42: IPM and Synchronous Reluctance Machines II	Narges Taran, Ian Brown
S54: Modelling and Analysis of Electrical Machines I	Prerit Pramod, Simone Ferrari
S55: Bearingless and High-Speed Machines	Eric Severson, Wolfgang Gruber
S66: Modelling and Analysis of Electrical Machines II	Shanelle Foster, Bingnan Wang
S76: Materials, Losses, Thermal and Manufacturing Issues I	Takashi Kato, Federica Graffeo







EMC Sessions and Chairs of ECCE 2024! Thank you for serving as Chair!

Remaining Oral Sessions

Sessions	Chairs
S77: Switched Reluctance and Flux Switching Machines	Kyohei Kiyota, Udochukwu B. Akuru
S88 : Diagnostics, Noise and Vibration in Electric Machines	Jose Antonino-Daviu, Antonio J. Marques Cardoso
S89: Additive Manufacturing and Other Advanced Manufacturing Technologies in Electric Machines	Rafal Wrobel, Silvio Vaschetto
S100: Wound Field and PM Machines	Fabio Giulii Capponi, Antonio J. Marques Cardoso
S101: Materials, Losses, Thermal and Manufacturing Issues II	Federico Marcolini, Juan Manuel Guerrero







Awards subcommittee report Dr Rafal Wrobel (Award committee chair)







2024 EMC Transactions Prize Paper Awards

(for Papers published in TIA in 2023)







EMC TIA prize papers

- An initiative from IPCSD that started last year.
- EMC papers are still nominated for IAS level awards, but now there are also awards dedicated for EMC TIA papers.
- Highest ranked papers from the original review process were independently reviewed by the EMC executive and ranking combined to find the best three.







Third Prize

Authors:

Zhongli Xi, Xiaoqing Zhang, Han Jiang

Paper Title:

Coupling Vibration Analytical Model and Vibration Suppression of Linear Motor Driven Free Piston Stirling Cryocoolers

Affiliation: Huazhong University of Science and Technology, Wuhan, China







Second Prize

Authors:

Chaofan Dong, Xuanyang Hu, Yuping Qian, Weilin Zhuge, Yangjun Zhang

Paper Title:

Thermal Management Integrated With Flat Heat Pipes for In-Slot Stator Windings of Electric Motors

Affiliation: Tsinghua University, Beijing, China







First Prize

Authors:

Miguel Enrique Iglesias Martinez, Jose Guerra Carmenate, Jose Antonino-Daviu, Larisa Dunai, Carlos A. Platero, J. Alberto Conejero, Pedro Fernandez de Cordoba

Paper Title:

Automatic Classification of Field Winding Faults in Synchronous Motors Based on Bicoherence Image Segmentation and Higher Order Statistics of Stray Flux Signals

Affiliation: Universitat Politècnica de València, Valencia, Spain







2024 EMC ECCE Prize Paper Awards

(for Papers presented at ECCE 2023)







Selection Process

- Top papers with highest ranking from digest review process selected for full review by the panel
- 6-member committee of distinguished reviewers
- Good mix of industry and academia
- Previous committee chairs, paper award winners, subject matter experts
 - Prof. Ion Boldea
 - Prof. Aldo Boglietti
 - Prof. Wen Soong
 - Dr. Haran Karmaker
 - Dr. Mircea Popescu
 - Dr. Rajeev Vyas







Third Prize

Authors: Yuhang Long, Zhanfeng Song, Zan Zheng

Paper Title: Research on A High Torque Density Axial-Radial Flux Permanent Magnet Machine to Avoid Stator Axial Movement

Affiliation: Tianjin University, Tianjin, China







Second Prize

Authors: Salar Koushan, Ayman EL-Refaie

Paper Title: A Study on Stator Winding Loss Distribution of Additively Manufactured Coils in Fractional Slot Concentrated Windings

Affiliation: Marquette University, Milwaukee, WI, USA







First Prize

Authors: Dominick Sossong, Daniel Zdunek, Ian P. Brown

Paper Title: Cast or Additively Manufactured Coils with End Turn Enhanced Heat Transfer Surfaces for Spray or Jet Cooling

Affiliation: Illinois Institute of Technology, Chicago, IL, USA







Standards subcommittee report

Standard sub committee Chair Dr Rajesh Deodhar







IEEE IAS EMC Standards activities

Project #1: IEEE P-11

"IEEE Std. 11: IEEE Standard for Rotating Electric Machinery for Rail and Road Vehicles"

- WG Chair: Tim Burress, burressta@ornl.gov,
- Current Version: 2006
- PAR Approved: March 2015, Extended to December 2023, additional extension request submitted
- On-going revision since June 2015
- Seeking a new WG Chair interested member please contact rukmidutta@ieee.org, or rajesh.deodhar@ieee.org
- Awaiting WG's response for an update as of Sep 2024

Project #2: IEEE P-1812

"IEEE Std. 1812: IEEE Guide for Testing Permanent Magnet Machines"

- WG Chair: Yao Duan
- Trial-use guide published: 2014
- On-going revision since August 2016
- Final version published in Jan 2024 valid until Jan 2034
- WG Chair confirmed that there are no further updates as of Sep 2024







IAS EMC Standards

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
- Awaiting WG's response for an update as of Sep 2024

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)
- PAR submitted August, 2019
- Final approval obtained in 02/2022 and published in 06/2022
- Current version valid for 10 years from publication until 2032
- WG Chair confirmed that there are no further updates as of Sep 2024







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
- Completed 1st Ballot, approval rate reached, working on addressing comment
- Interested Members contact: Yao Duan yao.duan@ieee.org
- Final version published in Sep 2022 valid for 10 years until 2032
- WG Chair confirmed that there are no further updates as of Sep 2024

Project #6: IEEE P-114

IEEE Standard Test Procedure for Single-Phase Induction Motors

PAR approved September 26, 2021

- WG Chair: Maher Al-Badri
- First WG meeting held on October 26, 2021
- On-going monthly WG meetings
- Interested Members contact: Maher Al-Badri <u>albadri@ieee.org</u>
- WG chair confirmed that they have requested a 1 year extension as of Sep 2024







IEEE-IAS IPCSD DEIC (Diversity, Equity and Inclusion Committee)

Xu Yang – EMC representative







IEEE-IAS IPCSD DEIC (Diversity, Equity and Inclusion Committee)

- Committee created in February 2023.
- Kick-off meeting in May 2023
- **Scope**: to promote and enhance DEI [Diversity, Equity and Inclusion] practices within IPCSD and its technical committees. Following the IEEE DEI guidelines, this committee will ensure that IPCSD pursues its technical objectives using the "the talents and perspectives of people with different personal, cultural, and disciplinary backgrounds".
- Chair appointed by the IPCSD Chair
- One member from each IPCSD TC
- Liaisons: Africa, India, South America, Europe







IEEE-IAS IPCSD DEIC Members

- Chair Giovanna Oriti, Naval Postgraduate School, USA
- Technical Committees Representatives:
 - Xu Yang, Key Drives LLC, USA [Electric Machines]
 - Elisabetta Tedeschi, NTNU, Norway/U. of Trento, Italy [Industrial Power Converters]
 - Maria Martinez, U. of Oviedo, Spain [Industrial Drives]
 - Akanksha Singh, DNV, USA [Renewable and Sustainable Energy Conversion Systems]
 - Majid Fard, GE Aerospace, USA [Transportation Systems]
 - Pratibha Sharma, COFAN/Violumas, Canada [Power Electronics Devices and Components]







IEEE-IAS IPCSD DEIC Members

Liaisons

- Africa: Mhret Behre Gebremariam, University of Oviedo, Spain
- India: Arnab Sarkar, Jaguar Land Rover, India
- South America:
 - Thiago Fonseca Rech, Universidade Federal de Santa Catarina, Brazil
 - Mariana (Mary) Espinola, Universidade Federal de Mato Grosso do Sul, Brazil
- Europe: Giulia Di Nezio, Universita' Roma Tre, Italy



IPCSD DEIC Activities to Date

Increasing the number of all under-represented members active within IAS-IPCSD:

- Student Design Contests in Africa, India and South America
 - In 2025 we will explicitly ask the participants to include a few words to highlight diversity in the required team description
- Travel grants
- Support for Liaisons to attend local conferences and advertise IAS IPCSD
- Collaboration with the IAS Education Department and the IAS Chapter and Membership Development Department







Student Design Contests 2024

Design topics

- · Components and systems for motor drives.
- Renewable energy power conditioning systems
- Components and systems for transportation electrification.
- Power electronics for energy efficiency and to reduce fossil fuel consumption.
- Functional apps related to motor/renewable energy/transportation electrification systems.
- loT devices.
- . 3D printings or rapid model.
- Wireless PCB prototypes.



IEEE IAS-IPCSD Engineering Student Chapter Design Contest (Africa) 2024



Application Deadline: Aug 1, 2024

iasipcsd.competition@gmail.com

Awards Announcement: Sept 1

Who can apply

All IEEE Students Members of African Student Chapters.

- Teams: 4 to 6 IEEE student/graduate members, including Team leader.
- . At least one student member of the IEEE IAS.
- · Woman lead will have preference.
- . Diverse team encouraged.
- The design must provide a practical solution and within the scope of the IEEE IAS.



for Humanity

APPLY NOW

Apply to contribute to technological advancement for humanity.

https://site.ieee.org/ias-ipcsd/scdc-africa/

Submission requirements

- Short video (max 5 minutes) and presentation in PDF format.
- A letter of recommendation from IEEE IAS Student Branch Chapter or IEEE Student Branch or IEEE IAS Section Chapter or IEEE Section.

Evaluation criteria

- . Innovation and impact on African countries.
- . Diversity of the team members.
- . Significance of the work to the scope of IAS.
- The quality of the presentation and video.

Design topics

- · Components and systems for motor drives.
- · Denewable energy power conditioning systems
- Components and systems for transportation electrification.
- Power electronics for energy efficiency and to reduce fossil fuel consumption.
- Functional apps related to motor/renewable energy/transportation electrification systems.
 IoT devices.
- . 3D printings or rapid model.
- Wireless PCB prototypes.

REE ROUSTRY Linking Research to Practice

IEEE IAS-IPCSD Engineering Student Chapter Design Contest (India) 2024



Who can apply

All IEEE Student Members of Indian Student Chapters.

- Teams: 4 to 6 IEEE student/graduate members, including Team leader.
- At least one student member of the IEEE IAS.
- . Woman lead will have preference.
- · Diverse team encouraged
- The design must provide a practical solution and within the scope of the IEEE IAS.

APPLY NOW

Apply to contribute to technological advancement for humanity.

https://site.ieee.org/ias-ipcsd/scdc-india/

Application Deadline: Aug 1, 2024
Awards Announcement: Sept 1

iasiposd.indiacomp@gmail.com



Submission requirements

- Short video (max 5 minutes) and presentation in PDF format.
- A letter of recommendation from IEEE IAS Student Branch Chapter or IEEE Student

Student Branch Chapter or IEEE Student Branch or IEEE IAS Section Chapter or IEEE Section.

Evaluation criteria

- Innovation and impact on Indian regions.
- · Diversity of the team members.
- · Significance of the work to the scope of IAS.
- . The quality of the presentation and video.

https://site.ieee.org/ias-ipcsd/scdc-india/







Student Contest Winners (India)

• Winners of the 2024 IPCSD Student Chapter Design Contest for India:

<u>Project Title:</u> Enhanced Power Management and Efficiency in Electric Bicycles using Super-Lift Converter for improved Range and Power Factor

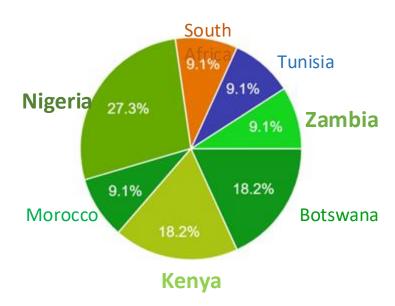
<u>Team Members:</u> Adiba Muskan. A, Rahul. A, Subiya Mehek. S, Shams Tabrez Hussain. A (B.S.Abdur Rahman Crescent Institute of Science and Technology - India)

- Ideas for expanding the publicity for student contest:
 - Include countries from the same region, such as Sri Lanka, Pakistan, Bangladesh, and Nepal, with a focus on rural and underrepresented colleges.
 - Increase engagement through social media platforms and prioritize outreach to student councils, clubs, and organizations instead of relying solely on faculty networks.
 - Promote the event in official IAS newsletters and at conferences for broader visibility.
 - Implement a two-tiered application process: start with an initial form for participants to express their intent to join, followed by a second form for full project submission later. This approach allows us to gauge the number of participants early on, without waiting until the final submission deadline.



Student Design Contest (Africa) 2024

Applicants



11 proposals from 7 countries

Winners

- AgriTracka -Machine learning-based agricultural monitoring platform,
 University of Lagos, Nigeria
- Sky Guardian Advanced Air Quality Monitoring System, Dedan
 Kimathi University of Technology, Kenya.
- 3. EcoCharge A Smart Mppt Charge Controller, University of Zambia, Zambia
- 3. An IOT-based Smart Emergency Management System,

Nnamdi Azikiwe University (UNIZIK), Nigeria

3. Lesser Waste and Cleaner Air: Bringing Sustainable Energy Solutions to

Anambra State of Nigeria, Nnamdi Azikiwe University

(UNIZIK), Nigeria

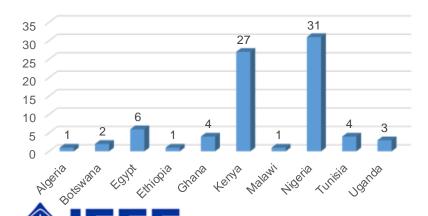






Travel Grants

- Travel Grant for 10 African students to attend the R8 SYP in Grenoble, France, July 2024.
- Ten selected, with 6 in reserve. Only four were able to attend because of visa issues. **Applicants**





IEEE IAS-IPCSD R8 SYP Grenoble Travel **Grant Africa 2024**

The IEEE IAS-IPCSD offers ten travel grants for African students to attend the IEEE R8 SYP Grenoble 2024 Congress up to - \$2000.

IEEE R8 SYP Grenoble 2024 Congress France | 15-19 July

Eligibility:

- Undergraduate, MSc, or PhD student living in Africa.
- . Interested to be a member of IEEE and IEEE IAS if selected. IEEE free membership will be offered for the 1st year (use the IASLRP code for IEEE IAS membership).
- Interested to volunteer in IEEE IAS student activities.
- Recommendation letter from your university or department.

Apply Now: Use this link Deadline: May 30, 2024

IPCSD-DEIC Liaison for Africa iasipcsd.competition@gmail.com













2025 Funds Requests

- 3 Student Design Contests
 - Africa \$6k
 - India (extend to Bangladesh, Pakistan, etc) \$6k
 - Central and South America \$6k
- Liaisons travel Grants
 - Power Africa 2025
 - Relevant 2025 conferences in South America and India
- Other ideas in the following slides
 - To be implemented in collaboration with other IAS departments including CMD (Srikanth Pillai), Diversity and Inclusion (Pia Torres) and Education Department (Pericle Zanchetta)







IPCSD DEIC New Ideas

- <u>DEIC-sponsored Best Paper award</u> encouraging female first authors to apply
 - Journal papers Transactions on IA and Open Journal on IA
 - Conference papers
 - IEEE PES/IAS Power Africa conference has the Best Paper Award in two categories: "Postgraduate students" and "Undergraduate students." Can we add best paper by a female first author?
 - ECCE has a best presentation award for everybody where female authors are strongly encouraged to participate at ECCE 2023 a female author won the award.
- <u>Mentorship Program</u> for Students and Young Engineers: virtual to connects students and young professionals, particularly female, from underrepresented regions with experienced engineers in the IEEE community. This would provide guidance, networking opportunities, and professional development support at minimal cost.
- Outstanding chapter awards with specific focus on DEI in underrepresented countries, i.e. best chapter to promote DEI







IPCSD DEIC New Ideas cont.

- Outreach: promote engineering in high schools, particularly in rural areas and lowincome neighborhoods
 - IAS has previously sponsored awards at US science fairs (grades 6-12) in the past (status today?). DEIC would like to sponsor awards specifically for female students and pre-college students in underdeveloped or rural regions
- <u>Virtual Technical Workshops and Webinars</u> for engineers in remote or underrepresented areas: low-cost, topic-specific webinars or short virtual courses led by experts in the field could help broaden access to knowledge
 - focus on practical skills, problem-solving in resource-constrained environments, or innovations in IAS topics relevant to developing countries
- <u>Open Access Technical Resources</u>: Creating a repository of open-access educational materials, technical papers, and recorded sessions specifically targeted at underdeveloped areas could provide lasting value
 - partnering with educational platforms or utilizing existing IEEE resources (IAS sister societies?)





2025 EMC Officers

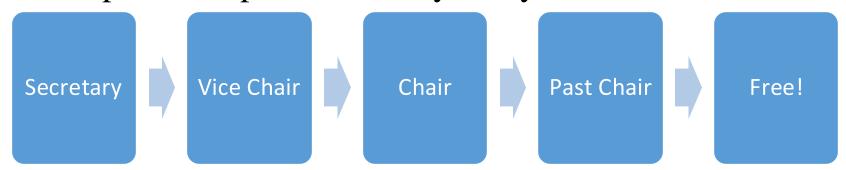






Role Rotations

• EMC promotes positions every two years



Election, Appointment and Term of Office

- 1. All Committee officers shall normally serve a two-year term of office commencing on January
- 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).







EMC Officers 2024 and motion to approve for 2025

2024 Committee Officers

Chair: Prof. Rukmi Dutta (<u>rukmidutta@ieee.org</u>)

Vice Chair: Dr. Giulio De Donato (giulio.dedonato@ieee.org)

Secretary: Dr. Narges Taran (narges.taran@ieee.org)

Past Chair: Dr. Greg Heins (gregheins@ieee.org)

No change for 2025, if the house accepts the above slate of Candidates as officers of the EMC for the Year 2025.







New Business







Motion to a slight change in operating guide

Vice Chair IAS Electric Machines Committee

The principal functions of the Vice Chair shall include:

- 1. Coordinate technical program organization for papers falling within the scope of the Electric Machines Committee at ECCE:
 - a. Attend organizational session for ECCE as Electric Machines Committee representative.
 - b. Work with appointed session organizers to define and prepare technical sessions so as to present a well balanced program.
- 2. Chair the Awards Subcommittee Planning and strategy development for the future growth of the EMC.
- 3. Succeed to the office of Chair in the event that office becomes vacant. Under such conditions the new Chair may choose to continue to exercise the duties of the Vice Chair until the term expires, or may make a temporary appointment in accordance with Section III.D.5.







Future Conference Organization









General Chair Iqbal Husain iqbal_husain@ncsu.edu

General Co-chair Giovanna Oriti giovanna.oriti@ieee.org







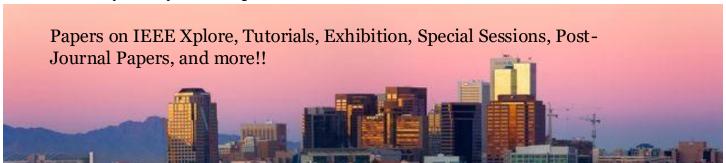




Live Philadelphia!

Join ~2000 of your closest friends

- Power Electronics, Semiconductor Devices, and Electric Drives
- Electric machines, Electric Vehicles, Electric Transportation
- Renewable Energy, Sustainable Energy
- Big Data, Machine Learning, Cybersecurity, Design Automation
- Smart Grid, Grid Modernization,
- Controls Modeling, and Optimization
- Passive Components, Materials, Energy Storage
- Many, many more topics







Philadelphia Convention Center

- An elegant conference space that is marvelously adorned with works by 52 artists including a flying design of steel and aluminum tubes
- Only 15 minutes from Philadelphia International Airport







Hotels

Four hotels contracted, all within less than a mile from the convention center:

- Canopy Hilton
- Hilton Garden Inn
- Le Meridian
- Wyndham Historic District







Many Attractions in Philadelphia

- Independence Hall: Birthplace of the United States
- Famous Love Sculpture
- Benjamin Franklin Parkway: Philadelphia most artistic mile
- Reading Terminal Market: One of America's oldest farmers market and food paradise
- Authentic Philly Cheesesteak
- Longwood Gardens
- Delaware River Waterfront
- Checking out Philly prior to World Cup 2026
- Rocky Steps and Rocky Statue
- and many others...













Important Dates

- Mar. 2nd, 2025 Deadline for Digest, Tutorial and Special Sessions
- May 25th, 2025 Digest, Tutorial and Special Sessions decision
- Jun. 15th, 2025 –Post-Journal Online Form Submission Due
- Jun. 20th, 2025 Final papers and Tutorial Materials due
- Jul. 6th, 2025 Post-Journal Author Notification

IAS/PELS technical committees to nominate Vice-Chairs

For details visit our website: https://www.ieee-ecce.org/2025/





Organizing Committee

General Chair: Iqbal Husain

Co-General Chair: Giovanna Oriti

Finance Chairs: Dong Cao, Sanjida Moury

TPCs: Xiaonan Lu, Andrea Cavagnino, Shanelle Foster, Jiangbiao He, Giacomo Scelba

Tutorial Chairs: Luca Zarri, M A Awal

Special Session Chairs: Grant Pitel, Anant Singh, Sarif Islam

Publicity Chairs: Mhret Gebremariam, Helen Cui

Publication Chairs: Brian Welchko, Silvio Vaschetto

Local Chair: Liang Du

Exhibit Chairs: David Morrison, Kris Eberle

Industry Partnership Chairs: Avoki Omekanda, Mazharul Islam, Xu She

Plenary Session Chair: Tomy Sebastian, Brad Lehman

Student Activities Chair: Sandun Kuruppu

Women in Engineering Chair: Vandana Rallabandi, Sneha Narasimhan

Webmaster: Anant Singh, Chaitanya Jaolekar, Akshat Nigam

Awards Chair: Mohammad Islam, Uday Deshpande

Representatives from Academia, Industry and US National lab





See you in October 2025 - in Philly!!





2025 IEEE Industry Applications Society (IAS) Annual Meeting

Incorporating The

Industrial & Commercial Power Systems (I&CPS)-Asia Conference



Hilton Taipei Sinban, in New Taipei, Taiwan, June 15-20, 2025

General Chair

Dr. Avoki Omekanda

avoki.omekanda@ieeee.org







Conference Topics

- Industrial Power and Energy Systems, Smart Grids, Energy Storage Systems, Carbon-neutral Power and Energy Systems.
- Best practice for Data Centers, including their design, analysis, monitoring, maintenance, safety, and operation.
- Industrial Power Conversion, including Electric machines, Industrial drives, Electrified Transportation Systems and Renewable and Sustainable Energy Conversion Systems.
- Topologies, Modeling, and control of Power Electronic converters, devices and components.
- Industrial Lighting Systems, including Sources, Display Technologies, and Drivers.
- Fundamentals and Industrial Applications of Electrostatics, including Electro-hydrodynamics, Electrostatic Measurements, Computation Electrostatics, Electrostatic Precipitation and Separation, Coronas and Gas Discharges.
- Smart Manufacturing, Intelligent Process Control, and Factory Automation.
- Industry 4.0 and Best Practices in Industrial Automation and Control.
- Regulation and Utilization of Electricity for the Control of Industrial Process including machinery, heating and electrical safety. Industrial applications in continuous process
- industries, including metal production, mining, petrochemical, and others.

https://ias-am.ieee.org/2025/author-information/







Important Dates & Papers Submission

IMPORTANT DATES

Deadline of Digests Submission Feb. 28, 2025

Notification of Paper Acceptance April 15, 2025

Deadline for submitting a camera-ready PDF of the Full Paper May 15, 2025

> Author Registration Due May 15, 2025

> > Conference Dates June 15-20, 2025

- All paper submissions must be made in English. One author must be selected as the corresponding author, and an email address must be provided for that individual.
- Accepted papers from the main technical program will be published in IEEE Xplore. Papers that are scheduled for presentation but are not delivered will not be included in IEEE Xplore.
- The final manuscripts for the Conference Record will be submitted electronically via the Scholar One Manuscripts website.

For details visit our website:

https://ias-am.ieee.org/2025/





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Organizing Committee

- General Chair: Avoki Omekanda, USA
- Industry Chair: Min-Fu Hsieh, Taiwan
- Treasurer: Tamas Ruzsanyi, Hungary
- Event Manager: Michelle Measel, USA
- International Advisor: Andy Knight, Canada
- TPCs: Luca Solero (Italy), Xiaodong Liang (Canada), Saleh Saleh (Canada)
- IEEE IAS Annual Meeting Local Chair: Min-Fu Hsieh, Taiwan
- I&CPS Asia Local Chair: Allen Wu Yuan-Kang, Taiwan
- Local Committee International Advisor: Wei-Jen Lee, USA
- Local Organizing Committee (LOC) Team: 22 Members (see next slide)
- Society Organizing Team: Patrick McCarren, Kimberly Borini, Andrea M. Sadlowski





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Local Organizing Committee (LOC)



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Yu-Chen Su	National Tsing Hua University	ycsu@ee.nthu.edu.tw
Chin-Chung Wu	Taiwan Power Company	u850899@taipower.com.tw
Tung-Sheng Zhan	National Kaohsiung University of Science and	tszhan1109@nkust.edu.tw





AO # 85



See You in June 2025 in Taipei, Taiwan





International Electric Machines And Drives Conference **IEMDC 2025**



• Location: Houston, TX, USA

• Date: May 18 – 21, 2025

Website: https://www.iemdc.org/

• Important dates:

- Nov. 17, 2024: Digest submission deadline
- Dec. 1, 2024: Tutorial proposal deadline
- Dec. 1, 2024: Special session proposal deadline
- Jan 15, 2025: Student demo application deadline
- Jan. 27, 2025: Notification of acceptance
- Mar. 31, 2025: Final submission of accepted paper



About Houston, TX, USA

- 4th largest city in US
- Major airline hub
- Energy capital
- Space city
- Concentration of companies and research universities for electrical machines and drives
- Have not held a machine &drive conference for many years



















CONFERENCE SCHEDULE

- May 18 (Sunday): tutorial, welcome reception
- May 19 (Monday): Plenary, Oral/Special, Expo reception, Student demo
- May 20 (Tuesday): Plenary, Oral/Special, Expo, Poster, Banquet
- May 21 (Wednesday): Oral/Special, Lightening

VOLUNTEER NEEDED

- Track/session chairs contact Organizing committee
- Reviewers sign up at www.iemdc.org
- Student volunteers





Workshop on Electrical Machines Design, Control and Diagnosis 2025

WEMDCD'25

09 - 10 April 2025

Co-Chairs: Michael Galea (Malta) Stefano Nuzzo (Italy)

Venue -The University of Malta - Valletta Campus

wemdcd2025@um.edu.mt

https://www.um.edu.mt/events/wemdcd2025/

L-Università ta' Malta



WEMDCD 2025, Malta

2 Days Conference

- O 2 keynote speeches (Ferrari Spa and Albertax Ltd)
- O 7 oral sessions
- 2 poster sessions

Sessions to cover

- Electrical Machine Design and Modelling
- O Electrical Drives and their Control
- O Electrical Drives Reliability and Monitoring
- O Sustainable Machines and Drives for Industrial and Transport Applications

Awards

- O WEMDCD Alessandro Costabeber Best Student Paper Award
- O The Women in Transport Best Paper Award

Key dates

- O Submission of papers opens: 15 September 2024
- O Submission of papers deadline: 15 December 2024
- O Notification of acceptance: 14 February 2025
- O Final full papers and conference forms: 10 March 2025
- O Deadline for registration: 15 March 2025





The only International Symposium entirely devoted to the diagnostics of electrical machines, power electronics and drives.



IEEE SDEMPED 2025

IMPORTANT DATES:

- All Submissions Open: December 2, 2024
- Tutorial/Special Session Proposals: January 31, 2025
- Manuscripts Submission Deadline: March 31, 2025
- Final Acceptance Notification: May 18, 2025
- Final Paper Submissions: June 15, 2025



www.ieee-sdemped.org

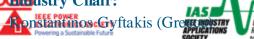




ORGANIZING COMMITTEE

- General Chair:
- Ali Bazzi (USA)
- Technical Program Chairs:
- JiangBiao He (USA)
- Giacomo Scelba (Italy)
- Publication Chair:
- Yeonho Jeong (USA)
- Treasurer:
- Weigiang Chen (USA)
- Plenary Session Chair:
- Jose Antonino-Daviu (Spain)
- Tutorial Chair:
- Taner Goktas (Turkey)
- Local Chair:
- Harish Krishnamoorthy (USA)







8. Other Business









Our Mission:

Nagamori Foundation

Support research and development engineers in the technical fields of motors, power generators, actuators, and related technologies.

Nagamori Awards:

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



Application Guideline for the 11th 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. Entry to mid-career – normally defined as no more than 30 years of research after obtaining the Bachelor's degree.
Application method	Self-nomination or nomination from academic institution are accepted. A recommendation letter by an expert in the field covered by the Awards, or a senior member of your Academic Society, organization, research department, etc. must be submitted.
Application period	November 01, 2024 - January 31, 2025 Applications must be postmarked on, or before, January 31, 2025
Application condition	Documents must be submitted in either English or Japanese.
Awards & prizes	Nagamori Awards will be given to approximately 6 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 11th Nagamori Awards Ceremony will be held on September 7, 2025, in Kyoto, Japan



Winners of the 10th Nagamori Awards

Affiliation and title: as of the day of winning the Award

Makoto Hagiwara

Associate Professor, Dept. of Electrical and Electronics Engineering, School of Engineering, Tokyo Institute of Technology

"Application of multilevel power conversion technologies to industrial drives and DC-DC converters for moving vehicles"



Christopher H. T. Lee

Associate Professor, School of Electrical and Electronic Engineering,
Nanyang Technological University

"For contributions to advancements in vernier motor drives and their

industrial applications "



Kenii Nakamura

Professor, Department of Management Science and Technology, Graduate School of Engineering, Tohoku University

"Research and development on high-performance contactless magnetic gears and magnetic-geared

machines"



Allison Okamura

Richard W. Weiland Professor in the School of Engineering, Department of Mechanical Engineering and, by courtesy, Department of Computer Science, Stanford University

"Soft growing robot actuation for navigation and exploration in constrained environments"



Sara Roggia

Head of magniDrive Project,
Power Electronics Department, magniX

"Taking to the skies electric motors and propulsion units for electric aviation"



Peter Sergeant

Full Professor, Department of Electromechanical, Systems and Metal Engineering, Ghent University/ Core Lab MIRO, FlandersMake@ UGent

"Design of sustainable axial and radial flux synchronous electric machines"



Grand Award



From The 10th Nagamori Awards Ceremony

September 8, 2024 @Hotel Okura in Kyoto, Japan



9. Motion to Adjourn







Please register your attendance and interest in volunteering for ECCE 2025







