

Please register your attendance and interest in volunteering for ECCE 2024



Backup form - MS forms



IEEE IAS

Electric Machines Committee

2023 Committee Meeting
Nashville Tennessee

Room 201 AB, Music City Center
Tuesday the 31st of October, 4:00 pm to 5:30 pm.

Chair: Greg Heins



Agenda

1. Attendance
2. Review and Approval of 2022 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. ECCE Session Chair Reports (2023 ECCE sessions completed as of meeting time)
6. New Business:
 - a. 2024 Officers – EMC Past Chair Nominates Slate of Officers
 - b. Publications Update and IAS Sponsored Conferences
 - c. ECCE 2023 – Preparation for ECCE 2024
 - d. Other Upcoming Conferences
 - e. Photo request for new EMC website
7. Other Business
 - a. Nagamori award
8. Adjournment



Please register your attendance and interest in volunteering for ECCE 2023



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 register at list <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 404 emails.
- A total of 8 (1 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 2022 Minutes for the Record !

- Minutes were distributed electronically on 29th November 2022. No corrections were requested.
- Minutes were recirculated again on 9th September 2023.
- Approved minutes will be available at IAS – EMC website:
<https://site.ieee.org/ias-emc/meeting-minutes/>



ECCE 2023 Chair's Report

Dr. Greg Heins



Transactions Paper Review Status



2023 Associate Editors

Udochukwu Bola Akuru
Giulio De Donato
Alireza Fatemi
Matthew Gardner
Konstantinos Gyftakis
Min-Fu Hsieh
Takashi Kosaka
Antonio J. Marques Cardoso
Gianmario Pellegrino
Ronghai Qu
Eric Severson
Narges Taran
Silvio Vaschetto
Rajeev Vyas
Fan Wu
Pinjia Zhang

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



AE appointment process

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

To replace some of our outgoing AEs and to add expertise in “high volume” areas we have appointed 2 new AEs in 2023.

The selection process was based on:

- a. Ongoing work as a TC for ECCE
- b. Performance as a reviewer for IAS TIA (EMC)
- c. Expertise alignment with EMC needs

New EMC AEs are:

Matthew Gardner, Udochukwu Bola Akuru



Overview of IAS Publications

IAS Owned

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



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

Manuscript Type	First Decision (12 Months) 2021	First Decision (12 Months) 2022
Electric Machines Committee	74	75
Industrial Drives Committee	57	63
Industrial Power Converter Committee	85	76
Power Electronic Devices and Components Committee	79	76
Renewable and Sustainable Energy Conversion Systems Committee	72	76
Transportation Systems Committee	82	75



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

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



Acceptance By Committee IPCSD(Last 12 Months)

IAS Publications 2023 Total	Magazine Acceptance Percentage	Transactions Acceptance Percentage	Rejection Percentage	Returned for Revision Percentage
Electric Machines Committee	0.00%	32.80%	16.80%	50.40%
Industrial Drives Committee	0.00%	25.45%	28.18%	46.36%
Industrial Power Converter Committee	0.54%	29.38%	23.72%	46.36%
Power Electronic Devices and Components Committee	1.67%	33.33%	16.67%	48.33%
Renewable and Sustainable Energy Conversion Systems Committee	1.34%	28.19%	20.81%	49.66%
Transportation Systems Committee	0.00%	34.23%	16.22%	49.55%
IAS Publications 2023 Total	12.20%	53.25%	44.46%	50.00%



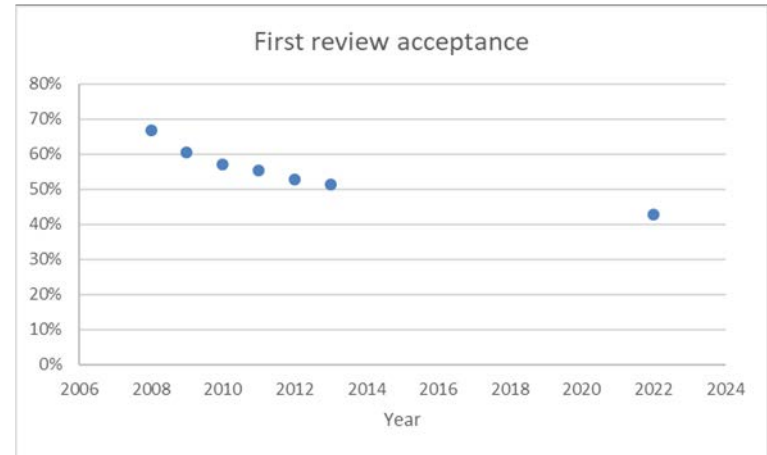
Committees	Number of AE	Number of Papers Submitted between October 2022-October 2023	Average Number of Papers handled Per AE
Cement Industry	1	18	18.00
Codes and Standards	1	1	1.00
Electric Machines	15	374	24.93
Electrical Safety	1	44	44.00
Electrostatic Process	6	34	5.67
Energy System	11	196	17.82
Industrial Automation and Controls	26	427	16.42
Industrial Drives	10	123	12.30
Industrial Lighting and Display	1	10	10.00
Industrial Power Converter	24	374	15.58
Metal Industry	1	22	22.00
Mining Industry	1	5	5.00
Petroleum and Chemical Industry	3	107	35.67
Power Electronic Devices and Components	7	66	9.43
Power Systems Engineering	22	455	20.68
Power Systems Protection	9	50	5.56
Pulp and Paper Industry	1	6	6.00
Renewable and Sustainable Energy Conversion Systems	5	132	26.40
Rural Electric Power (No Activity)			
Transportation Systems Committee	8	104	13.00
IAS Average			16.29



Actions

1. Increase the number of AEs to match society average
2. Share with AEs their own statistics vs average
3. Ongoing need to reviewers to support the process

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



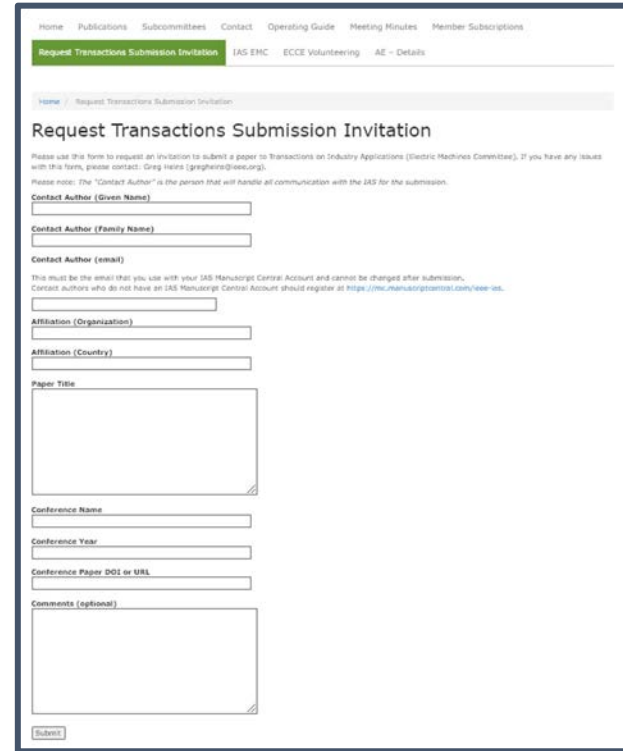
Process for Prospective Authors

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

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

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

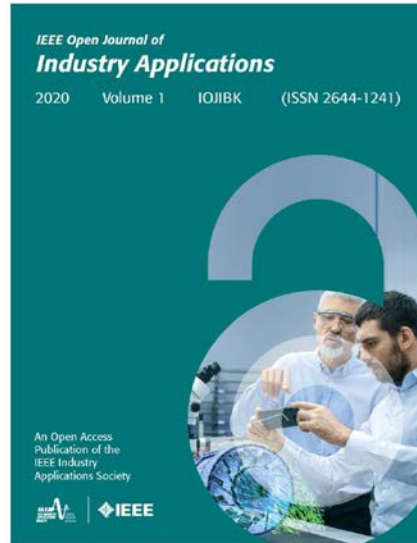
<http://sites.ieee.org/ias-emc/publications/>



The screenshot shows a web browser window displaying the 'Request Transactions Submission Invitation' form. The page has a navigation bar at the top with links for Home, Publications, Subcommittees, Contact, Operating Guide, Meeting Minutes, and Member Subscriptions. Below the navigation bar is a green header with the text 'Request Transactions Submission Invitation' and 'IAS EMC ECCE Volunteering AE - Details'. The main content area is titled 'Request Transactions Submission Invitation' and contains instructions for authors. The form fields include: Contact Author (Given Name), Contact Author (Family Name), Contact Author (email), Affiliation (Organization), Affiliation (Country), Paper Title, Conference Name, Conference Year, Conference Paper DOI or URL, and Comments (optional). A 'Submit' button is located at the bottom of the form.



Open Access Journal of Industry Applications



EiC: Prof. Pericle Zanchetta

Editorial Meeting

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Steering Committee

- Prof. Ayman El Refaie
 - (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



Open Access Journal of Industry Applications

Information

- Web Only Journal
- No Conference Requirement
- 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



Open Access Fees (2023)

- If paper is accepted, authors must pay an Article Processing Charge (APC)
- Standard IEEE APC is \$1995 USD
- IEEE Members get a 5% discount
- IAS Members get a 20% discount: | \$1596 per paper fee
- There are no page charges for overlength papers



Open Access Journal of Industry Applications

Impact factor will be available at end of 2023

Proposals for Special Issues should be sent to:

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

with a special issue proposal, including title, description and guest editor(s) CV



JESTPE Special Issues

- JESTPE is IAS-PELS joint publication
- IPCSD Technical Committees are required to be more active in Special Issue proposals

IPCSD Proposal

- Let's try to have every 2 years 1 proposal coming from each TC
- During the year the IPCSD Vice-Chair sends emails to TC Chairs and TC Publication Chairs to invite them to submit proposals, which can be also joint proposals from 2 or more TCs
- TCs officers lead the process of preparing the proposals



JESTPE Special Issues

When you prepare the proposal

- ❖ Select a topic and a title capable of attracting submission of about 50 papers. It must be different from the other Special Issues (<https://www.ieee.org/publications/jestpe>, <https://ias.ieee.org/publications/joint-publications/jestpe.html>).
- ❖ 2-3 Guest Editors well recognized as experts and having a corresponding history of working in the field. Citations, h-factor, are also things to consider.
- ❖ 8-10 Associate Editors with history that shows they have expertise in the area. AEs should also have a good review or editorial history. AEs should be very motivated people.
- ❖ Look at recent CfP of JESTPE Special Issues in order to prepare the proposal. ❖ Luca Zarri, IAS representative at JESTPE Steering Committee, and Luca Solero, IAS IPCSD vicechair, can help in preparing the proposals, as well we can give feedback on proposals before they are submitted to the editorial board.



ECCE 2023 Vice-Chairs' Report

Prof Rukmi Dutta



2023 ECCE EMC Topic Chairs

G01	Rajesh Deodhar
G01	yao duan
G01	Silvio Vaschetto
G02	Nicola Bianchi
G02	Hao Ding
G02	Lavanya Vadamodala
G03	Zhongze Wu
G03	Lakshmi Varaha Iyer
G03	Maria Martinez Gomez
G04	Roy McCann
G04	Udochukwu Bola, Akuru

G05	Matthew Gardner
G06	Renato Lyra
G06	Kyohei Kiyota
G07	Hassan Eldeeb
G07	Jose Antonino-Daviu
G07	Konstantinos Gyftakis
G08	Adam Skorek
G08	Andrea Cavagnino
G08	Rashmi Prasad
G9	Fan Wu
G9	Luigi Alberti

G10	Prerit Pramod
G10	Simone Ferrari
G11	Avoki Omekanda
G11	Hossein Ehya
G12	Wolfgang Gruber
G12	Eric Severson
G13	Takashi Kato
G13	Alireza Fatemi
G13	Gerd, Bramerdorfer
G14	Athanasios Karlis
G14	Wei Xu

G01 General

- G01 Induction Machines
- G02 IPMSM and Synchronous Reluctance Machines
- G03 Other Synchronous machines (PMSM and Wound Field)
- G04 Switched Reluctance and Flux Switching Machines
- G05 Axial Flux Machines
- G06 Actuators, Linear, non-conventional, integrated machines and transformers
- G07 Noise, Vibration, Reliability, Machine Diagnostics and Protection
- G08 Materials, Losses, Efficiency, Thermal and Manufacturing issues
- G9 Additive Manufacturing and other advanced manufacturing technologies
- G10 Modeling and Analysis Methods (including multiphysics)
- G11 Low Speed Direct Drive Machines, Magnetic Gearing
- G12 High Speed Machines, Bearingless Machines, high frequency effects
- G13 Machines for Transportation (Automotive and Aerospace)
- G14 Machines in Renewable Energy Applications

Vice-Chairs

- Rukmi Dutta
- Narges Taran
- Giulio De Donato

Thank you Topic Chairs!!

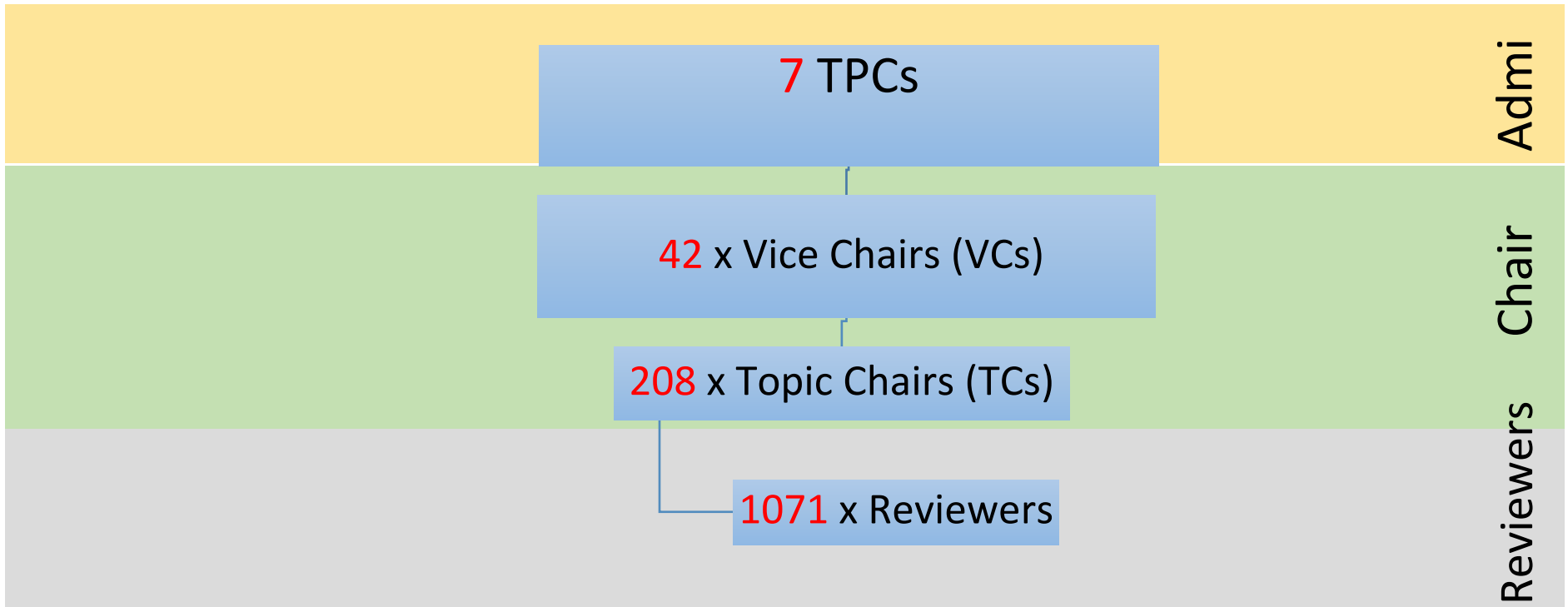


Review Process

- Topic Chairs were selected from volunteers who expressed interest in the survey/attendance form at EMC meeting in Detroit, 2022.
- The selected list of TC was provided to ECCE 2023 TPC via the IPCSD chair Fernando Briz as we required approval from TPC this year for selected TPC and VCs.
- The TPC allocated TCs and VCs to the specific tracks.
- Track G01 General was dropped by TPC this year.
- TCs allocated the 5 reviewers per paper from the ECCE database
- 95% of Track G papers received more than 3 review evaluations. We attempted to achieve **5 evaluations for majority of the papers**.
- 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. Reviewers can modify their preferred area in the web system.



2023 ECCE Paper Review Management



ECCE Digest Submission Data

ECCE level

Edition		2 reviews	3 reviews	4 reviews	5 reviews	6 reviews	Total	Average reviews/paper
2023	Papers	12	265	565	626	1	1585*	4
	n. of review	24	795	2260	3130	6	6227	
2022	Papers		114	498	782		1394	4.5
	n. of review		342	1992	3910		6244	
2021	Papers		37	487	983	3	1510	4.6
	n. of review		111	1948	4915	18	6992	
2020	Papers		400	450	750		1600	4.2
	n. of review		1200	1800	3750		6750	
2019	Papers	8	226	572	943		1749	4.7
	n. of review	16	678	2288	4715		7697	
2018	Papers		79	406	1268		1753	4.7
	n. of review		237	1624	6340		8201	
2017	Papers	121	252	509	6211		1503	4.1
	n. of review	242	756	2036	3105		6139	

*Excludes Journal to conference and 2-page late submission



Electric Machine Statistics (Track G)

Year	Digest submitted	Digest accepted	Acceptance rate	Format
2023	224	158	70.5%	In-person
2022	218	155 (143*)	71%(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
2014	201	137	68%	In-person

* Final submissions and acceptance rate- some papers were withdrawn after accepted.

In even years, digest submission is usually higher because IEMDC is in odd years.



Electrical Machine Sessions

Year	Oral sessions	Poster sessions
2023	15	4
2022	18 + 4 (remote sessions)	6
2021	25 (online)	
2020	21 (online)	
2019	21	
2018	23	
2017	20	

EMC ratio was similar to previous years - total number of oral sessions was reduced for 2023.



Subcommittees

1. Executive Subcommittee

(Its membership shall consist of all elected officers and the immediate Past Chair)

2. Nominating Subcommittee

(The Nominating Subcommittee Chair will normally be the immediate Past Chair of the Committee)

3. Awards Subcommittee

(Sub-committee Chair position open for nominations)

4. Standards Subcommittee

(Sub-committee Chair position open for nominations)



Awards subcommittee report

Prof Rukmi Dutta



Member recognitions

IEEE NIKOLA TESLA AWARD RECIPIENTS

2024 – ALDO BOGLIETTI

Professor, Department of Energy,
Politecnico di Torino, Torino, Italy

“For contributions to the magnetic and thermal modeling, design, and characterization of electrical machines.”



IEEE Fellows - EMC members

Bilal Akin, USA

for contributions to control, diagnosis and condition monitoring of AC drives

Marko Hinkkanen, Finland

for contributions to sensorless control of industrial motor drives

Yilmaz Sozer, USA

for contributions to the design and control of electric machine drives

Fellow nominations due by Feb 7 2024

[2023 NEWLY ELEVATED FELLOWS](#)



2023 EMC Transactions Prize Paper Awards

(for Papers published in TIA in 2022)



EMC TIA prize papers

New initiative from IPCSD. EMC papers are still nominated for IAS level awards but now there are also awards dedicated for EMC IAS 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:

*Daniel Ludois; Kevin Frankforter; Sarah Behringer;
Finn Roberts*

Paper Title:

*Double Layer Capacitive Power and Heat Transfer in
Rotating Machinery*



Second Prize

Authors:

Hui Wen; Yang Shi; Lijian Wu; Yidong Du; Youtong Fang

Paper Title:

Improving Combined Flow and Thermal Network Accuracy for Radially Air-cooled Generators by Considering the Non-linear Resistance Characteristics of T-junction Flow



First Prize

Authors:

Emir Pošković; Luca Ferraris; Nicola Bianchi

Paper Title:

Different Approaches in the Use of Ferrites in Assisted Reluctance Machines



2023 EMC ECCE Prize Paper Awards

(for Papers presented at ECCE 2022)



Selection Process

- 6 top papers with highest ranking from digest review process selected for full review by the panel
- 5-member committee of distinguished reviewers
 - Good Mix of industry and academia
 - Previous committee chairs, paper award winners, subject matter Experts
 - **Prof. Nicola Bianchi**
 - **Prof Wen Soong**
 - **Dr. Haran Karmaker**
 - **Dr. Mircea Popescu**
 - **Dr. Rajeev Vyas**



Third Prize

Authors: Ryan Collin, Alex Yokochi and Annette von Jouanne

Paper Title: *EDM Damage Assessment and Lifetime Prediction of Motor Bearings Driven by PWM Inverters*

Affiliation: Baylor University



Second Prize

Authors: Yaser Chulaee, Donovan Lewis, Greg Heins, Dean Patterson and Dan M. Ionel

Paper Title: Winding Losses in Coreless Axial Flux PM Machines with Wave and Spiral PCB Stator Topologies

Affiliation: University of Kentucky and Regal Rexnord, Australia



First Prize

Authors: Yuto Yamada, Hiroya Sugimoto and Kazuhito Imae

Paper Title: *Efficiency Improvement of Permanent Magnet Synchronous Machines With High Slot Fill Aluminum Winding*

Affiliation: Tokyo Denki University and Aster Co., Ltd, Japan



Awards - call for nominations

- Andrew W. Smith Outstanding Young Member Achievement Award (Deadline: April 1)
- Outstanding Young Member Service Award (Deadline: April 1)
- Distinguished Service Award (Deadline: April 1)
- Outstanding Achievement Award (Deadline: April 1)
- Kliman Award (Deadline: June 1)
- IAS Distinguished Lecturers (Deadline: ?)
- IEEE Fellow (Deadline: March 1)

IAS
members
<35 years
old

(Approximate deadline)

We can see 2022 recipients in IAS website

<https://ias.ieee.org/awards.html>, <https://ias.ieee.org/chapters-membership/distinguished-lecturer-program.html>, <https://www.ieee.org/membership/fellows/steps.html>



Awards subcommittee

Traditionally the Vice Chair but the operating guide allows for other nomination.

Please contact Greg Heins (gregheins@ieee.org) if you are interested in this role.



Standards subcommittee report

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, Extended to December 2023, additional extension request submitted](#)
 - On-going revision since [June 2015](#)
 - Seeking a new WG Chair
-
- Contact: burresta@ornl.gov

[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](#)
- PAR extended until 2023
- Final approval obtained in 07/2023
- Currently under editor review to be published



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**

[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



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
- Final approval obtained in 12/2022 and published in 08/2023

[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 albadri@ieee.org



Standards subcommittee

Dr. Haran Karmaker has stepped down so we are looking for a replacement.

Please contact Greg Heins (gregheins@ieee.org) if you are interested in this role.



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

- Committee newly 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
- Three Liaisons: Africa, North Africa and South America



IEEE-IAS IPCSD DEIC Members

- Chair – Giovanna Oriti, NPS
- TC Representatives:
 - Xu Yang, Wisk Aero, 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]
 - Sara Roggia, magniX, USA [Transportation Systems]
 - Yushan Liu, Beihang Univ., China [Power Electronics Devices and Components]
- Liaisons:
 - Africa: Mhret Behre Gebremariam, U. of Oviedo, Spain
 - North Africa: Donia Ammami, Renault, Tunisia
 - South America: Diana Lopez-Caiza, Univ. Andres Bello, Santiago, Chile



IPCSD DEIC Activities

Launched Student Design Contest (Africa)
<https://site.ieee.org/ias-ipcspd/scdc-africa/>

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.
- IoT devices.
- 3D printings or rapid model.
- Wireless PCB prototypes.



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



\$2000 each (three awards)

Application Deadline: Nov 15
Awards Announcement: Dec 20

CONTACT US: Mhret Berhe
IPCSD-DEIC Liaison for Africa
mhret.berhe@ieee.org

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.

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.

APPLICATION WILL OPEN SOON
Apply to contribute to technological advancement for humanity.
<https://site.ieee.org/ias-ipcspd/>





Other Projects

- Collaboration with the IAS Education Department and the IAS Chapter and Membership Development Department
- Sponsor Africa Liaison's participation to Power Africa conference
- Student Design Contest for global participation
- IAS Mid-Career Awards
- Support South American students
- **Ideas and Suggestions are welcome!**

Xu Yang, Wisk Aero, USA [Electric Machines]
xu.yang@ieee.org



ECCE 2023: Session Reports

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



EMC Sessions and Chairs of ECCE 2023!

Thank you for serving as Chair!

Completed Sessions

Sessions	Chairs
S8: Induction Machines	Silvio Vaschetto, Md Sariful Islam
S9: Electric Machines for Transportation	Alireza Fatemi, Gerd Bramerdorfer
S10: Diagnostics, Noise and Vibration in Electric Machines	Hassan Eldeeb, Jose Antonino-Daviu
S31: Axial Flux Machines	Matthew C. Gardner, Giulio De Donato
S32: Modelling and Analysis of Electrical Machines I	Prerit Pramod, Ali Safayet
S33: Materials, Losses, Thermal and Manufacturing Issues I	Andrea Cavagnino, AK Arafat



EMC Sessions and Chairs of ECCE 2023!

Thank you for serving as Chair!

Remaining Sessions

Sessions	Chairs
S43: Switched Reluctance and Flux Switching Machines	Roy McCann, Udochukwu B. Akuru
S44: Bearingless and High-Speed Machines	Eric Severson, Wolfgang Gruber
S52: IPM and Synchronous Reluctance Machines I	Nicola Bianchi, Gilsu Choi
S53: Additive Manufacturing in Electric Machines	Luigi Alberti, Fan Wu
S63: Materials, Losses, Thermal and Manufacturing Issues II	Antonio Griffo, Sandro Rubino
S64: Wound Field and PM Machines I	Zhongze Wu, Lakshmi Varaha Iyer
S82: IPM and Synchronous Reluctance Machines II	Ramakrishnan Raja, Lavanya Vadamodala
S83: Modelling and Analysis of Electrical Machines II	Avoki Omekanda, Hossein Ehya
S94: Wound Field and PM Machines II	Shuvajit Das, Wei Xu



SPECIAL SESSION NOTE REQUEST

Wednesday

Special Sessions • 10:40AM – 12:20PM				
209C	201A	205C	205A	102A
SS15: Battery Tech vs. Charging Infrastructure: Driving Towards a Sustainable e-mobility Future	SS19: Part 1: Bidirectional Switches are Coming. Are You Ready?	SS13: Part 1: Transient and Dynamic Modeling and Control of Large-Scale, Resilient Distribution Systems with High Penetration of Inverter-based Distributed Energy Resources and Loads	SS14: Part 2: The Role of Power Hardware-in-the-Loop Simulation in the Successful Rollout of New Power Electronics Solutions	SS8: Future of EM Design-Manufacturing Advancements

EMC members are coordinating three special sessions on the future of electric machine design (Manufacturing, Materials, Comutation)

Special Sessions • 2:00PM – 3:40PM				
202A	205C	201A	209B	102A
SS17: Transmission Expansion Planning Models for Offshore Wind Energy in the U.S.	SS13: Part 2: Transient and Dynamic Modeling and Control of Large-Scale, Resilient Distribution Systems with High Penetration of Inverter-based Distributed Energy Resources and Loads	SS19: Part 2: Bidirectional Switches are Coming. Are You Ready?	SS22: Part 1: Challenges and Opportunities for Aviation Electrification and ARPA-E Aviation-class Synergistically Cooled Electric-Motors with Integrated Drive Program (ASCEND)	SS18: Future of Electric Machines Design Materials Advancement

To disseminate the outcomes of these panels more widely, the plan is to summarise the discussion for potential inclusion in an IAS magazine article.

Thursday

Special Sessions • 8:30AM – 10:10AM				
205C	209C	202B	205A	
SS5: Future of Electric Machines Design-Computational Advancements	SS6: Part 1: Design Automation for Power Electronics – from Device to Systems Design, Verification and Certification	SS16: Emerging Applications of Inductive Power Transfer Technology	SS24: Part 1: Finger on the Pulse: Sustainable & Robust Data Centers	

EMC volunteers are requested to take brief notes and forward them to Pete Wung (pwung@earthlink.net)



New Business – 2023 EMC Officers

Prof. Akira Chiba (EMC past chair)



EMC Officers 2024

2023 Committee Officers

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

• **Vice Chair:** Prof. Rukmi Dutta (rukmidutta@ieee.org)

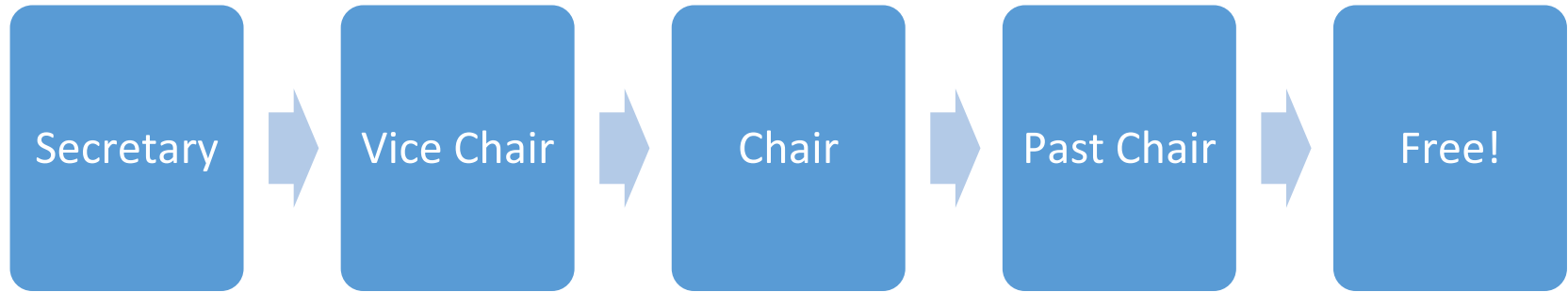
• **Secretary:** Prof. Giulio De Donato (giulio.dedonato@ieee.org)

• **Past Chair:** Prof. Akira Chiba (chiba@ee.e.titech.ac.jp)



Role Rotations

- EMC promotes positions every two years



C. 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).



Nominating Subcommittee operation guide

- The **Nominating Subcommittee Chair** will normally be the Immediate Past Chair of the Committee.
- The Nominating Subcommittee shall propose one or more candidates for each Committee Office who are able and willing to serve. When considering potential candidates, consideration will be given to ensure a balance **of geographical, academic and industry** representation. It has become common practice to alternate between academic and industry backgrounds
- 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



Nominating Subcommittee

- Members: Prof. Akira Chiba, Chair, Dr. Pete Wung, Dr. Avoki Omekanda, Prof. Aldo Boglietti, Dr. Mircea Popescu, Prof. Andy Knight, Dr. Emmanuel Agamloh, Dr. Greg Heins, Prof Rukmi Dutta, Prof. Giulio De Donato
- Traditionally only **past chairs** were members, however, **current Executives** were also included after carefully checked IAS EMC operation guide.
- Base on the current Executives, preference is **for Industry and North America**. Six candidates submitted CVs by two months before the EMC meeting in ECCE.
- On September 8, 2023, a zoom meeting was held and seven members attended. Candidate list was presented. All six candidates were from industry, five were from the North America, one was female. CVs were presented one by one and attendees provided their comments to the candidates. ECCE topic chair experience, Transaction AE experiences male/female are discussed. After checking the all CVs, members voted.
- Five members voted one candidate, one voted other person, Chair did not vote to be neutral. Attendees agreed the one candidate. The minutes was circulated and absent members also agreed.



Proposed Candidate for Secretary

Dr. Narges Taran

- PhD 2019, Univ of Kentucky, USA.
- 2021- Ford Motor Company, Dearborn, Michigan, USA.
- 2019-2021 Borg Warner Inc.
- ECCE Vice Chair Track G, Electric Machines, in 2023
- ECCE Topic Chair during 2019-2022
- IAS Transaction Associate Editor since 2022.
- ECCE session chair during 2020-2022
- Eight papers in IEEE IAS Transactions, three papers in IEEE MAG Transactions.



Video link



Motion to Approve Slate of Officers

2024 Committee Officers

Chair: Prof. Rukmi Dutta (rukmidutta@ieee.org)

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)

It is hereby moved that the house accepts the above slate of Candidates as officers of the EMC for the Year 2024



Future Conference Organization





IEEE ENERGY CONVERSION CONGRESS & EXPO PHOENIX, ARIZONA, USA ☀️ OCT. 20-24

ECCE 2023 Steering Committee Meeting

General Chair, Rolando Burgos (rburgos@ieee.org)

General Co-Chairs, Sudip Mazumder & Pedro Rodriguez



October 31, 2023



IEEE ECCE 2024 — Phoenix

(Conference record #55643)



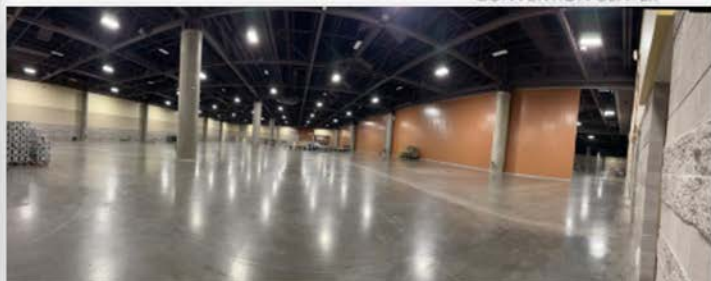
- Convention Center:
<https://www.phoenixconventioncenter.com/>



- Exhibit Hall: 102,080 sq.ft.
- Ballroom: 2,024 people, 22,000 sq.ft.
- Ballroom foyer: 15,000 sq.ft.



IEEE ECCE 2024 Convention Center



- Meeting Rooms (100 Level, ECCE)
 - 21 x 1,500 sq.ft. rooms (144 people theatre style)
 - 4 x 4,360 sq.ft. rooms (220 people theatre style)
- Meeting Rooms (200 Level, IAS)
 - 24 x 1,500 sq.ft. rooms (144 people theatre style)
 - 2 x 4,360 sq.ft. rooms (220 people theatre style)



IEEE POWER
ELECTRONICS SOCIETY
Powering a Sustainable Future

Oct. 31, 2023

IEEE ECCE 2024 – Phoenix

(Conference record #55643)



- Convention Center:
<https://www.phoenixconventioncenter.com/>



- Exhibit Hall: 102,080 sq.ft.
- Ballroom: 2,024 people, 22,000 sq.ft.
- Ballroom foyer: 15,000 sq.ft.



IEEE ECCE 2024 – HOTELS



Hyatt Regency Phoenix



Renaissance Phoenix Downtown Hotel

Organizing Committee (Thus Far...)

- **General Treasurer**
 - Xiu Yao, University at Buffalo
- **General Co-Chairs**
 - Sudip Mazumder, University of Illinois Chicago
 - Pedro Rodriguez, Luxembourg Institute of Science and Technology
- **TPC**
 - Pericle Zanchetta, University of Nottingham, UK (TPC Head)
 - Luca Solero, University Roma Tre, Italy
 - Helen Li, Florida State University
 - Maryam Saeedifard, Georgia Tech
 - Kevin Bai, University of Tennessee, Knoxville
- **Publicity Chair**
 - Helen Cui, Tianjin University, China
 - Gen Li, Aalborg University, Denmark

Organization Update

- Logo competition winner:
 - Hitesh Kumar!
- Submission deadlines:
 - March 8, **digests**
 - March 8, **tutorial proposals**
 - April 1, **special session proposals**
 - June 7, **late breaking research briefs**



ICEM 2024





Politecnico
di Torino

ICEM

International Conference on Electrical Machines

Torino 2024



SEPTEMBER 1-4, 2024
POLITECNICO DI TORINO, TORIN,
ITALY



TORINO



ART & CULTURE

MUSEUMS

THE CITY BOASTS 42 MUSEUMS, FROM THE EGYPTIAN MUSEUM TO THE NATIONAL MUSEUM OF CINEMA, PASSING THROUGH MANY MUSEUMS DEDICATED TO CONTEMPORARY ART

ROYAL RESIDENCES

TORINO AND PIEMONTE BOAST THE AMAZING CIRCUIT OF THE "CROWN OF DELIGHTS", CONSTITUTED BY THE 15 SAVOY RESIDENCES DECLARED A WORLD HERITAGE SITE BY UNESCO IN 1997

CONTEMPORARY ART

MUSEUMS, FOUNDATIONS, GALLERIES, EXHIBITION SITES INCLUDING OPEN-AIR SHOWS NOW BRING TOGETHER THE LEGACY OF ARTISTIC MOVEMENTS THAT BEGAN AND FLOURISHED IN AND AROUND THE PROVINCE'S CAPITAL FROM THE EARLY 1900S



CAPITAL OF TASTE

FOOD AND WINE

EATING WELL IN TORINO IS AN ART, A TRADITION OF EXCELLENCE THAT SPANS FROM WINE TO CHEESE, AND FROM COFFEE TO APERITIFS

APERITIF

A BEFORE-DINNER DRINK ACCOMPANIED BY COUNTLESS NIBBLES IS A RITE THAT CAN'T BE MISSED

CHOCOLATE

THE HISTORY OF CHOCOLATE IS STRICTLY CONNECTED TO TORINO AND PIEMONTE, WHERE THE VERY FIRST HOT CHOCOLATE, CHOCOLATE HOUSES AND THE "GIANDUIOTTO" - THE TYPICAL TURIN CHOCOLATE MADE OF COCOA AND HAZELNUT — WERE INVENTED



ICEM 2024 ON CAMPUS



**Politecnico
di Torino**



For over 160 years, Politecnico di Torino has been one of the most prestigious public institutions at international and national levels in education, research, technology transfer and services in architecture and engineering

CONFERENCE FACILITIES



**THE AUDITORIUM
MAIN CAMPUS
452 SEATS**

THE CONFERENCE FACILITIES



LECTURE ROOMS
CAMPUS CITTADELLA
4 X 150 SEATS, 4 X 100 SEATS,
3 X 80 SEATS ROOMS



CALL FOR PAPERS

50TH ANNIVERSARY EDITION!



September 1-4, 2024

The **International Conference for Electrical Machines** is the reference meeting for specialists of electrical machines and drives from industry and academia

Held every two years since 1974, it is the 26th and 50th anniversary edition

Presented papers will be published in the IEEE Xplore Digital Library

Post-conference submission follows the rules of the respective IEEE journals; detailed information is on our website www.icem.cc/2024

TOPICS / TECHNICAL TRACKS



T1 Rotating Machines

T2 Design Issues
(Optimization, Modeling,
Simulation)

T3 Special and Linear
Machines, Actuators, Sensors

T4 Thermal and Loss Issues,
Magnetic and Insulation
Materials

T5 Electrical Drives

T6 Diagnostics and Condition
Monitoring

T7 E-machines and Drives for
Sustainable Transportation

T8 E-machines and Drives for
Renewable Energy

TECHNICAL PROGRAM COMMITTEE



General Chairs: Gianmario Pellegrino and Aldo Boglietti

Technical Program Chairs

Radu Bojoi

Antonio Cardoso

Giulio De Donato

Marko Hinkkanen

Shafiqh Nategh

INFORMATION



Call for Tutorials

high-quality tutorials by recognized experts

Call for Special Sessions

any candidate SS organizer, upon contacting the SS co-chairs, is asked to organize a **6-paper** Special Session

Exhibition and Industry Forum

visit the booths of ICEM 2024 industrial sponsors. **Presentation-only sessions** dedicated to industry

Student Forum

poster competition for students to present their work to industry and academia

Social Events

Gala dinner at MAUTO, National Museum of Automobile, with visit include



**M
AU
TC** MUSEO DELL'AUTOMOBILE DI TORINO



<https://www.museoauto.com/en/>



DEADLINES



Special Sessions Proposals

Dec 1, 2023

Tutorials Proposals

Feb 1, 2024

Full Paper Submission

Feb 1, 2024

Full Paper Notification

May 1, 2024

Final Paper Upload

June 1, 2024



Politecnico
di Torino

ICEM

International Conference on Electrical Machines



VISIT WWW.ICEM.CC/2024

Torino 2024



SEE YOU IN TORINO!
SEPTEMBER 1-4, 2024

Photo request for new EMC website

In 2024 we will migrate our EMC website to a new site set up by IEEE

One requirement is that we need some nice banner images of electric machines

If you have any images that you are willing to share for this purpose, please send them to

giulio.dedonato@ieee.org



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 **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**.
- Applicants must be **entry to mid-career researchers and engineers**.



Application Guideline for the 10th 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. <u>Entry to mid-career – normally defined as no more than 30 years of research after obtaining the Bachelor's degree.</u>
Application method	Self-nomination or nomination from academic institution are accepted. <u>A recommendation letter</u> 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 Guideline for the 10th Nagamori Awards

Application period	November 01, 2023 - January 31, 2024 Applications must be postmarked on, or before, January 31, 2024
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 <u>The Grand Nagamori Award will be announced during the Awards ceremony.</u> 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 10th Nagamori Awards Ceremony will be held on September 8, 2024, **in Kyoto, Japan**

Nagamori Foundation :
<https://www.nidec.com/en/nagamori-f/>



Winners of The 9th Nagamori Awards



Ke-Horng Chen	Chair Professor Department of Electronics and Electrical Engineering/ Institute of Electrical and Control Engineering, National Yang Ming Chiao Tung University
Juri Jatskevich	Professor Department of Electrical and Computer Engineering, Faculty of Applied Science, The University of British Columbia
Sangbae Kim	Professor Department of Mechanical Engineering, Massachusetts Institute of Technology
Nobuyuki Kurita*	Associate Professor Department of Surgery, Baylor College of Medicine/ Congenital Heart Surgery, Texas Children's Hospital
Sheldon Williamson	Professor and NSERC Canada Research Chair Department of Electrical, Computer, and Software Engineering; Faculty of Engineering and Applied Science; Ontario Tech University
Junming Zhang	Professor,

9. Motion to Adjourn



Please register your attendance and interest in volunteering for ECCE 2023



Back-up QR code

