

Transportation Systems Committee (TSC) Annual Meeting

October 11, 2022
15:00-16:00PM EST, 140C

TSC Chair: Mohammad Anwar, Ph.D.
General Motors

Agenda

A. TSC Business Report

1. Introduction
2. 2022-2023 Committee Officers
3. Committee Activities
4. Transactions Paper Review
5. Prize Papers, ECCE 2021
6. Conference Activities

B. TEC - Move to IEEE Council

C. TSC Related 2023 Conferences

1. ECCE-2023
2. IEMDC-2023
3. ITEC-2023

D. ECCE-2022 Updates

E. Nagamori Award Program

F. Adjourn

Committee Officers – 2022-2023

Chair

Dr. Mohammad Anwar
General Motors

Vice Chair (Papers)

Dr. John Kisacikoglu
National Renewable Energy Laboratory

Vice Chair (Conferences)

Dr. Rakib Islam
American Axle & Manufacturing

Secretary

Dr. JiangBiao He
University of Kentucky

Past Chair

Dr. Bulent Sarlioglu
University of Wisconsin-Madison

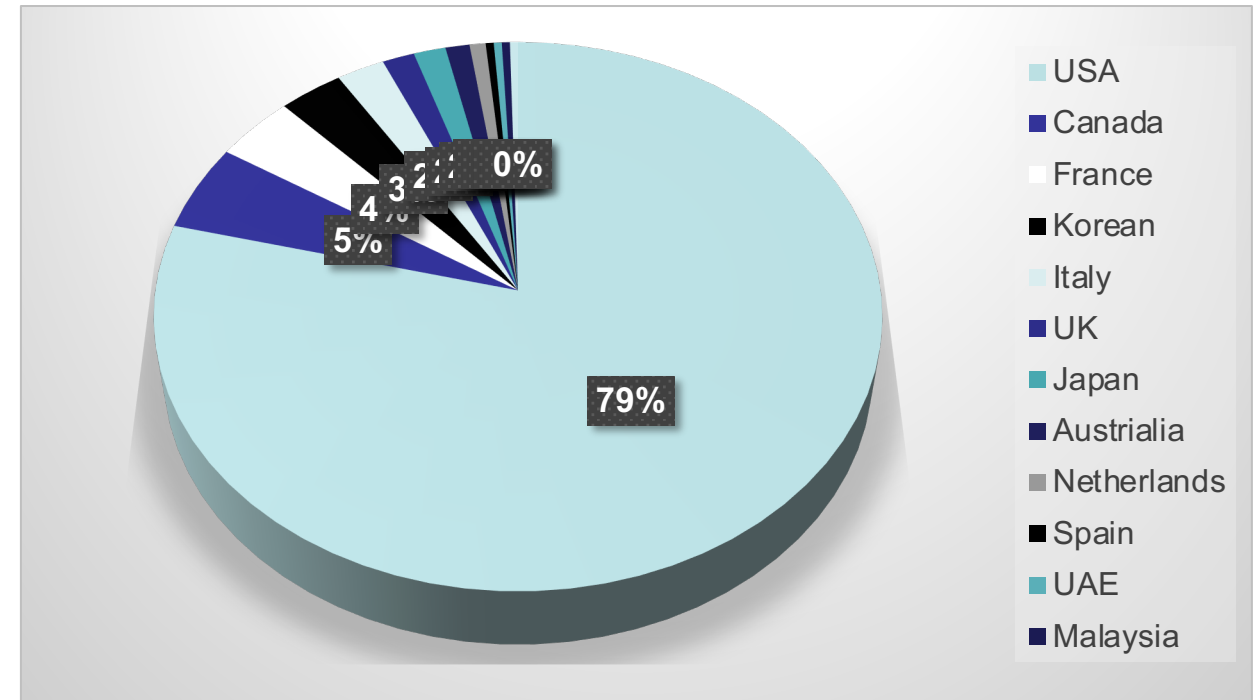
JiangBiao He, Ph.D.
University of Kentucky
Secretary

Committee Membership Updates

- IEEE IAS TSC has an active website at - <http://sites.ieee.org/ias-tcs/>
- Total members as of Sept. 30 2022 is **266** (*increased from 226 members in Dec 2022*).
 - Some members' e-mails may need to be updated as a result of the changes in their affiliations.
 - Please send your updated information's to jiangbiao@ieee.org
 - Include First & Last Name, Affiliation and e-mail address when sending updated details
- If you want to be a member, please send your contact information to Dr. JiangBiao He at jiangbiao@ieee.org

Where are our TSC Members from?

* Country	Subscribers
* Australia	3
* Austria	1
* Canada	13
* China	9
* France	10
* Italy	6
* Japan	4
* Malaysia	1
* Netherlands	2
* Republic of Korea	8
* Singapore	1
* Spain	1
* United Arab Emirates	1
* United Kingdom	4
* United States	202
* Total number of users subscribed to the list:	266
* Total number of countries represented:	15



- 79% of the TSC members are from USA.
- We encourage more members from other regions or countries.

Call for TSC Volunteers

- The roster sheet will be circulated around to update your affiliation and contact info, as well as mark your volunteer interest to serve for TSC at various positions.
- We seek a volunteer to be the webmaster of the TSC website.
- We also seek volunteers to lead the standards subcommittee and regional liaisons.

	A	B	C	D	E	F	G	H	I	J	K	L
	Last Name	First Name	Affiliation	Country	Email	Attendance at ECCE 2018	Attendance at ECCE 2019	Attendance at ECCE 2022	Session Chair for ECCE 2023	Topic Chair for ECCE 2023	TSC Reviewer	TSC AE
1												
234												
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John Kisacikoglu, Ph.D.
National Renewable Energy Laboratory
Vice Chair - Papers

IAS Transaction Paper Review

TSC Transaction Paper Submission Process:

- TSC started reviewing papers for IA transactions/magazines since 2012
- First conference policy
- You request for invitation to submit a paper to be considered by TSC
- At least 20% of change is expected
- Reach out to VC-Papers (john.kisacikoglu@nrel.gov) to request an invitation

Topic areas for TSC include:

- transportation systems analysis (mobility, routing, etc.)
- power electronics (traction, charging, etc.)
- electric motors for transportation
- grid integration analysis and solutions (low power, high power, wired, wireless, etc.)
- energy storage systems used in transportation (battery, hydrogen and other alternative sources)
- cyber/physical security applications that focus on transportation systems.

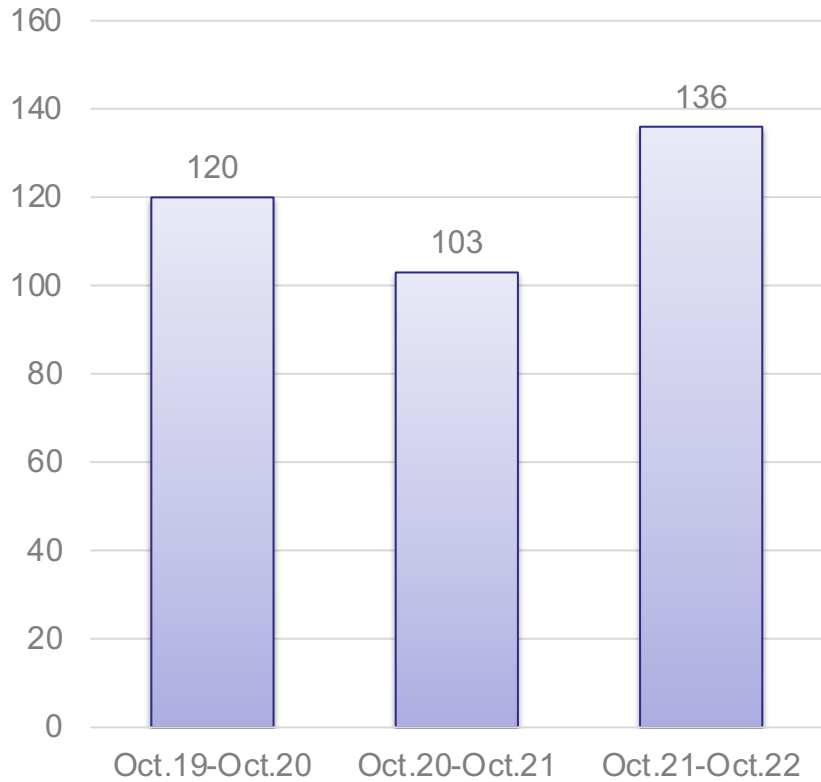
IAS Transaction Paper Review

- TSC started reviewing papers for IA transactions/magazines since 2012
- **TCPRC:** Dr. John Kisacikoglu– Vice Chair (Papers)
- **Associate Editors**
 1. Prof. Bilal Akin, University of Texas at Dallas, TX
 2. Prof. Mohamed Badawy, San José State University, CA
 3. Prof. Yue Cao, Oregon State University, OR
 4. Prof. Woongkul (Matt) Lee, Michigan State University, MI
 5. Dr. Jianlin Li, Oak Ridge National Laboratory, TN
 6. Dr. Ramakrishnan Raja, Halla Mechatronics, MI
 7. Prof. Deepak Ronanki, Indian Institute of Technology Roorkee, India
 8. Dr. Subrata Saha, Aisin Corporation, Japan
 9. Prof. Xiaofeng Yang, Beijing Jiatong University, China
 10. Prof. Jin Ye, University of Georgia, GA
- Reviewers/members database is evolving
- Official term is two years.

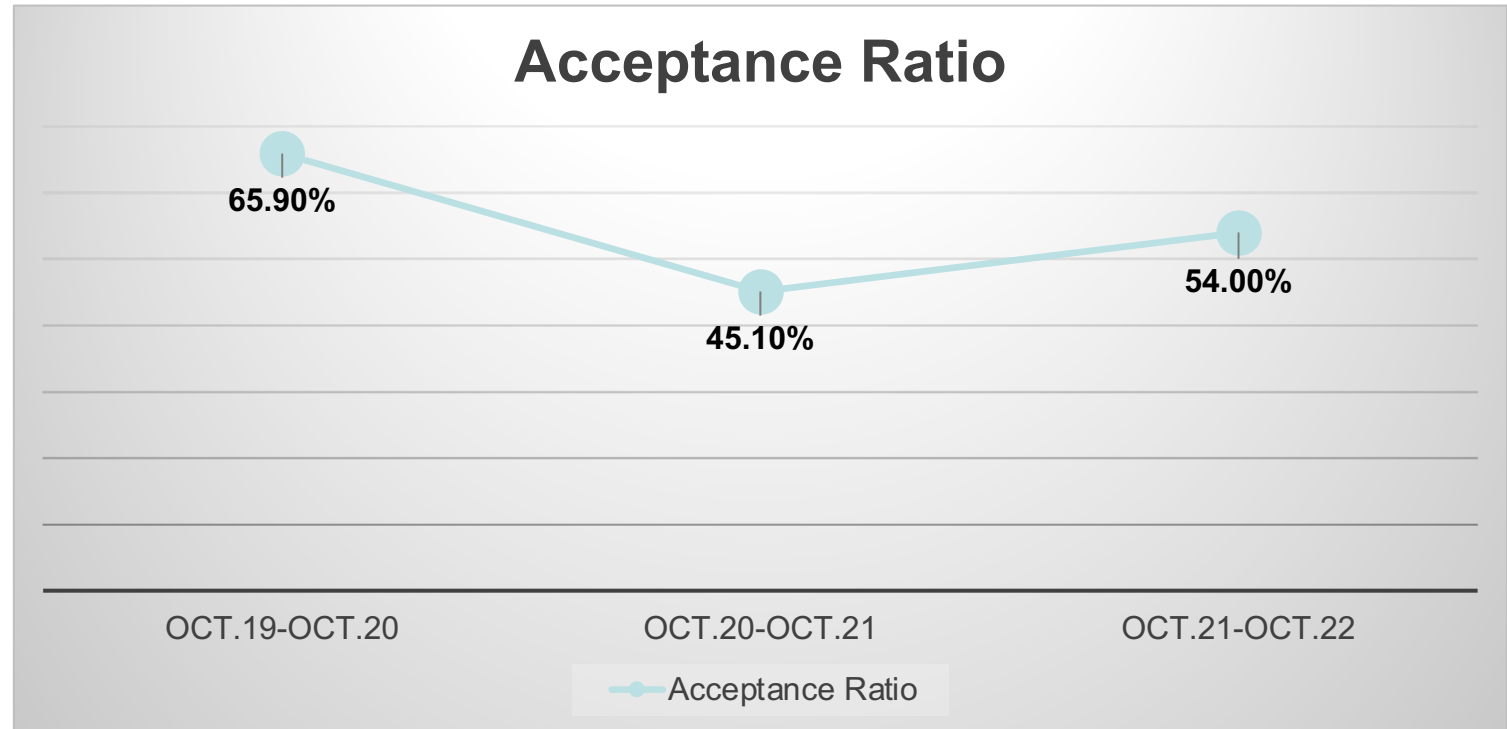
*If you are interested in being a reviewer or **associate editor** for TSC, please send your info to TSC secretary at jiangbiao.he@uky.edu or put your info on the print-out.*

We appreciate our Associate Editors for their kind voluntary work

Transaction Paper Review: Manuscript Status (Last Three Years)

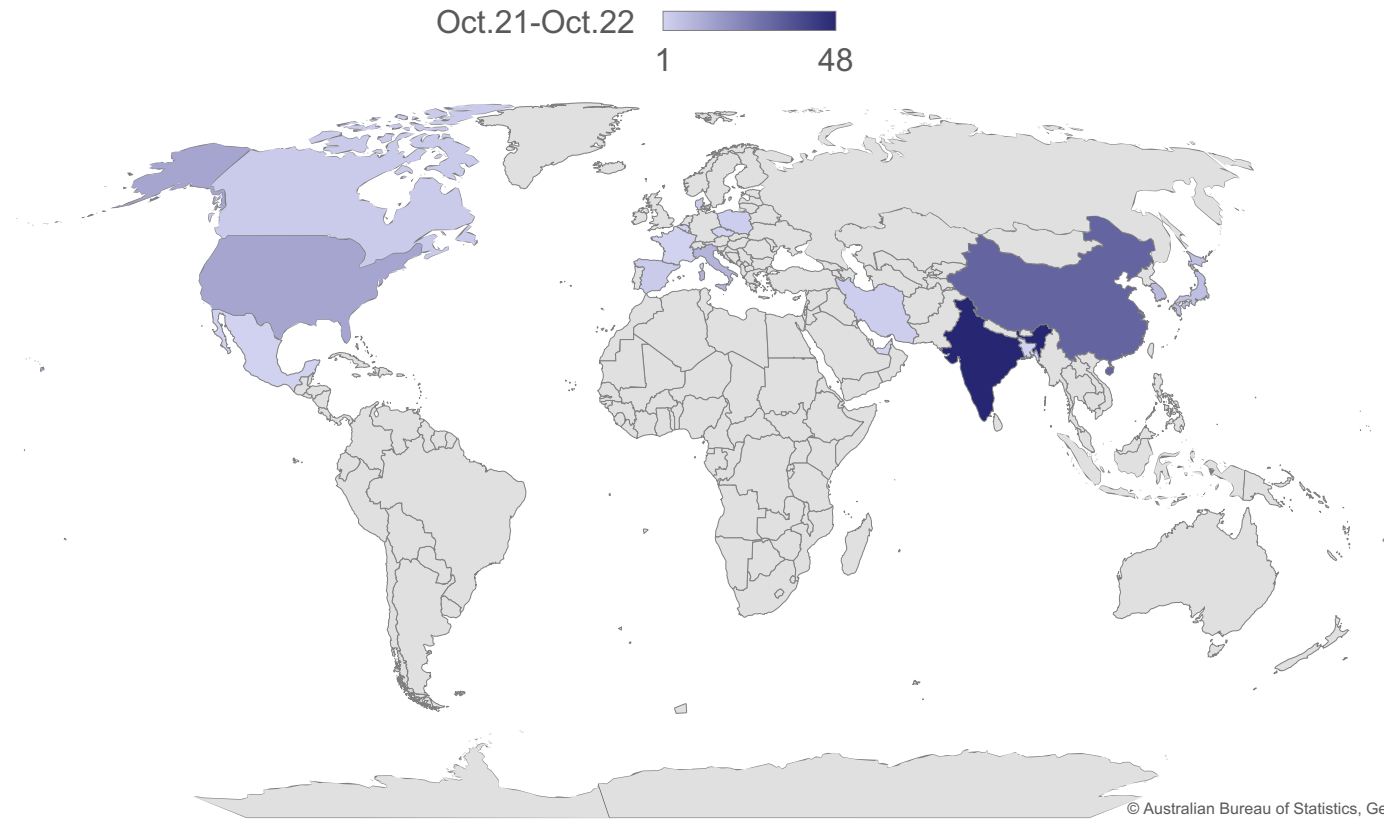


No of Submissions



Number of manuscripts submitted increased
AEs and Reviewers are maintaining a quick turnaround

Transaction Paper Review: Manuscript Status (Last Year)



India	48
China	31
USA	13
Italy	9
Korea	7
Japan	6
Canada	3
Denmark	3
Spain	3
Iran	2
Poland	2
Sweeden	2
Belgium	1
Czech Republic	1
France	1
Mexico	1
Singapore	1
UAE	1
Bangladesh	1
Total	136

TSC Prize Paper Award Types

What is a prize paper? How many awards are available?

ECCE Paper awards:

- Papers sponsored by TSC presented at previous year ECCE becomes eligible for the award.
- 7-10 papers are selected based on the reviewer score they receive from ECCE.
- Award subcommittee reviews papers based on (i) novelty of the idea, (ii) feasibility of the proposed approach, and (iii) supporting evidence for experimental work.
- Three papers are selected for the award

IAS Transaction paper awards

- Any paper sponsored by TSC published in IAS Transactions the previous year becomes eligible.
- It is not required that the paper was presented at ECCE.
- Manuscript central M-scores are used to select the papers to be evaluated for awards.
- Number of papers for this award under TSC will depend on the published papers.
- The award process is still under development.

Awards Subcommittee Formation for 2023-2025

We are seeking a volunteer for the awards subcommittee chair position for 2023-2025 prize paper awards activities.

Awards Subcommittee Chair

- responsible for coordinating ECCE prize paper awards and IAS transaction paper awards
- selects five members for the awards subcommittee and handles the review process
- maintains diversity within the committee
- organizes the award ceremony at the annual committee meeting

Term Duration

- two years (starting January 2023)
- after two years a new chair is appointed.
- next appointment will be in 2025

If you are interested in being chair for awards subcommittee, please send your info to jiangbiao.he@uky.edu or indicate this in the attendance sheet.

TSC Prize Paper Award - 2022

Award Committee

Chair – Dr. John Kisacikoglu

Committee Members:

Name	Affiliation
Dr. Bilal Akin	University of Texas at Dallas
Dr. Hassan Eldeeb	BorgWarner Inc.
Dr. Rakib Islam	American Axle & Manufacturing
Dr. Mehdi Farasat	Louisiana State University
Dr. Subrata Saha	Aisin Corporation



Bilal Akin



Hassan Eldeeb



Mehdi Farasat



Rakib Islam



Subrata Saha

The award committee evaluated **7 top ranked** digests from ECCE 2021 Track D - Transportation System Applications. Total number of accepted papers under Track D was 48.

TSC Prize Paper Award - 2022

Award Winners: Third Prize

Electrical Insulation Design and Qualification of a SiC-based Generator-Rectifier Unit (GRU) for High-Altitude Operation

Lakshmi Ravi¹, Jiewen Hu¹, Xingchen Zhao¹, Dong Dong¹, Rolando Burgos¹, Sriram Chandrasekaran², Saeed Alipour² and
Richard Eddins³

Email: lravi@vt.edu

¹Center for Power Electronics Systems, Virginia Tech, Blacksburg, USA

²Raytheon Technologies, Dallas, Texas, USA

³GE Aviation, Pompano Beach, Florida, USA



TSC Prize Paper Award - 2022

Award Winners: Second Prize

DAB Converter with Trapezoidal Wave Heating Capability for Lithium-Ion Battery of Electric Vehicles



Yuta Sasama

Department of Electrical and Electric Engineering

Ibaraki University

Ibaraki, Japan

20nm624r@vc.ibaraki.ac.jp

Masatoshi Uno

Department of Electrical and Electric Engineering

Ibaraki University

Ibaraki, Japan

masatoshi.uno.ee@vc.ibaraki.ac.jp



TSC Prize Paper Award - 2022

Award Winners: First Prize

Impact of Current Profiling For NVH Mitigation On Switched Reluctance Machine Drive Accessories

Shuvajit Das¹
Yilmaz Sozer¹

Anik Chowdhury¹
David Colavincenzo²

Md. Ehsanul Haque¹
Fernando Venegas²

Md Tawhid Bin Tarek¹
Jeffrey Geither²

¹The Department of Electrical and Computer Engineering, The University of Akron, Akron, OH, USA

²Bendix Commercial Vehicle Systems Elyria, Ohio, USA



Regional Liaison Subcommittee Formation for 2023-2025

We are seeking interested volunteers for the regional liaison subcommittee for 2023-2025 activities.

Regional Liaison Subcommittee Officers

- Europe, Asia, Africa, and South America
- Help increase membership base for TSC
- Help publicize TSC activities within their regions
- Stay engaged with regional IAS activities

Term Duration

- two years (starting January 2023)
- after two years a new liaison officer is appointed.
- next appointment will be in 2025

If you are interested in being liaison officer positions, please send your info to jiangbiao.he@uky.edu or indicate this in the attendance sheet.

Dr. Rakib Islam
American Axle & Manufacturing
Vice Chair - Conferences

ECCE 2022 – Transportation Electrification Applications

IAS TSC Vice chair Rakib Islam served as a vice-chair for this track.

Topic Chairs selected from our members based on their voluntary interest:

- **Rashmi Prasad**, General Motors.
- **Md Sariful Islam**, Halla Mechatronics
- **Woongkul Lee**, Michigan State University
- **Shuvajit Das**, Nexteer Automotive
- **Aparna Saha**, General Motors.
- **Rakib Islam**, American Axle & Manufacturing



	Oral	Poster	Withdrawn	Rejected	Total	Acceptance Rate
ECCE 2019	25	32	7	23	87	65.5%
ECCE 2020	34	33	10	37	114	58.8%
ECCE 2021	44		3	21	68	64.7%
ECCE 2022	46	9	4	19	78	70.5%

ECCE 2022 – Transportation Electrification Applications

Session topics:

1. Inductive power transfer and traction applications—(1 session)
2. EV charging—(1 session)
3. Battery charging system—(1 session)
4. Battery system—(1 session)
5. EV Powertrain I&II—(2 sessions)
6. Transportation Electrification Applications—(1 session)
7. Electrified Air Vehicles—(1 session)
8. Electrified Transportation Systems—(1 session)
9. Wireless Chargers—(1 session)
10. Electrification of Rail, Sea and Air Transportation Systems—(1 session)

ITEC Global Series

- **ITEC North America (60% PELS, 20% IAS, 20% PES)**
 - ITEC'19: June 19-21, 2019, Metro Detroit, MI
 - ITEC'20: June 19-21, 2020, Virtual
 - ITEC'21: June 23-25, 2021, Virtual
 - ITEC+'22: June 15-17, Anaheim, CA
 - ITEC+'23: June 20-23, Downtown Detroit, MI
- **ITEC Asia & Pacific (36% IAS, 12% PELS, 12% PES, 40% Others) – Led by IAS**
 - May 8-11, 2019, Seogwipo-si, Jeju, Korea
 - 2020: Cancelled.
 - 2021: Cancelled
 - Oct 28-31, 2022: Zhejiang University International Campus, Haining, China
- **ITEC India & Middle East – Led by IAS in Partnership with SAEINDIA**
 - August 27 – 29, 2015, Chennai, India
 - December 13-15, 2017, Pune, India
 - December 17-19, 2019, Bangalore, India
 - December 16-18, 2021: Gurugram, India
 - **2023: N/A**
- **ESARS-ITEC Europe**
 - November 2-4, 2016, Toulouse, France
 - November 7-9, 2018, Nottingham, UK
 - 2020 conference is cancelled
 - March 29-31, 2023, Venice, Italy

Other Future Conferences

TSC will be involved in various conferences in 2022 & 2023 at various capacities:

- ICEMs 2022, November 29-December 2, Chiang Mai, Thailand
 - Full paper submission date: Aug 31, 2022
- APEC 2023, March 19-23, Orlando, FL, USA
 - Final accepted paper submission date: Nov 25, 2022
- ECCE 2023, October 29-November 02, Nashville, TN, USA
 - Digest submission date: TBD (ESTIMATED: Jan 15, 2023)
- ECCE Asia 2023, May 22-25, Jeju, S. Korea
 - Digest submission date: Oct 21, 2022
- ACEMP-OPTIM 2023, September 1-3, Ardahan, Turkey
- IEMDC 2023, May 14-17, San Francisco, CA, USA
- ITEC 2023, June 21-23, Detroit, MI, USA
 - Digest submission date: Dec 1, 2022
- ICEM 2024, Torino, Italy

TEC – Move to IEEE Council

Bruno Lequesne, Ph.D.
(Chair, TEC Steering Committee)

Introduction of ECCE-2023

Giovanna Oriti, Ph.D.
(Plenary Chair, ECCE-2023)

Introduction of IEMDC-2023

Leila Parsa, Ph.D.
(General Chair, IEMDC-2023)

Introduction of ITEC-2023

*Philip Kollmeyer, Ph.D.
(General Chair, ITEC-2023)*

ECCE 2022 Updates

*Emmanuel Agamloh, Ph.D.
General Chair, ECCE-2022*

Nagamori Award Program

Yasushi Nishimura

*Nagamori Foundation
Secretary General*

**It is an exciting time for
transportation electrification!**

**Please join TSC
Contact: jiangbiao@ieee.org**