

# Transportation Systems Committee (TSC) Meeting

October 17, 2020  
Virtual Online Meeting

# Bulent Sarlioglu

## University of Wisconsin-Madison

### *Chair*

# Agenda

## **A. IAS TSC Presentation (Committee Officers)**

1. Introduction
2. 2020-2021 Committee Officers
3. Committee Activities
4. Transactions Paper Review
5. Prize Papers, ECCE 2020
6. Conference Activities
7. TEC Update
8. Committee Update

## **B. ECCE 2021 (Giovanna Oriti)**

## **C. Transportation Electrification Community Updates (Bruno Lequesne)**

## **D. Nagamori Awards (Mr. Yasushi Nishimura, Secretary General, Nagamori Foundation)**

# Committee Officers – 2020-2021

**Chair** Dr. Bulent Sarlioglu  
University of Wisconsin-Madison

**Vice Chair (Papers)**  
Dr. Mohammad Anwar  
General Motors

**Vice Chair (Conferences)**  
Dr. Mithat Kisacikoglu  
The University of Alabama

**Secretary**  
Dr. Rakib Islam  
Dura Automotive Systems

**Past Chair**  
Dr. Mohammad Islam  
Halla Mechatronics

# Rakib Islam

## Dura Automotive Systems

### *Secretary*

# Introduction / Improvements on TSC Website

- ❑ Website: <https://site.ieee.org/ias-tcs/ias-transportation-systems-committee/>
- ❑ This year we plan to update our website. Work is underway.

The screenshot displays the IEEE IAS Transportation Systems Committee website. The header features the text "IEEE IAS Transportation Systems Committee" and the IEEE logo. Below the header is a navigation menu with tabs for "About", "Officers", "Meetings", "Pictures", "Operating Guide", and "Publication Procedure". A search bar is located below the navigation menu, with the text "Search IEEE IAS Transportation Systems Committee" and a "Search" button. To the right of the search bar are social media icons for Facebook, Twitter, YouTube, and LinkedIn, along with a "Share" button. The main content area shows the "About" page, which includes a breadcrumb trail "Home > About", a section titled "About", and a paragraph describing the Transportation Systems Committee (TSC) as a sub-committee of the Industrial Power Conversion Systems Department (IPCSD) within the Industry Applications Society (IAS) of the Institute of Electrical and Electronic Engineers (IEEE). The paragraph states: "The scope of the TSC is to emphasize the electrification of the transportation industry, including components, systems, and infrastructure, and encompassing all modes of transportation (e.g. road vehicles, aero-space vehicles, rail-road and water transports etc.) for people and goods and to treat all these within the scope of the IAS." Below the paragraph is a link to "Edit this entry."

# Committee Updates

- IEEE IAS TSC has a new active website at - <http://sites.ieee.org/ias-tcs/>
- We seek volunteer to be the webmaster of the TSC website
- Total members as of 2020 is > 225.
  - Some members e-mails need to be updated as a result of the changes in their affiliation
  - Please send your updated information's to [rakibulislam2000@gmail.com](mailto:rakibulislam2000@gmail.com)
    - 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. Rakib Islam at [rakibulislam2000@gmail.com](mailto:rakibulislam2000@gmail.com)

# Committee Updates

- **TSC Webpage Contents:**

- About/Home: Brief statement about the TSC
- Operating guide of the TSC
- Journal paper submission guidelines
- Upcoming conferences that TSC members can participate
- Award / recognition of the TSC members
- Link to join as a member to TSC

- **Subcommittees:**

- Executive Subcommittee Composed of the Officers listed in III.A of the operating guide, plus the Committee Immediate Past Chairman.
- Advisory Committee: Comprised of Past Chairman of TSC and other IPCSD committees.

- **Nominating Subcommittee**
- **Standards Subcommittee**
- **Awards Subcommittee**

**Options for future as the committee grows**



# Where are our Members from?

```
*
*
* Country                Subscribers
* -----
* Australia              3
* Austria                1
* Canada                 13
* China                  5
* France                 9
* Hong Kong              2
* Italy                  5
* Japan                  4
* Malaysia               1
* Netherlands            2
* Republic of Korea      8
* Singapore              1
* Spain                  1
* United arab emirates   1
* United kingdom         5
* United states          165
*
*
* Total number of users subscribed to the list:    226
* Total number of countries represented:           16
* Total number of local host users on the list:    0
*
```

## Most members from USA

- Need to encourage members from other Regions / Countries

# Mohammad Anwar

## General Motors

### *Vice Chair - Papers*

# Transaction Paper Review

- TSC started reviewing papers for IA transactions/magazines since 2012
- **TCPRC**: Dr. Mohammad Anwar– Vice Chair (Papers)
- **Associate Editors**
  1. Dr. Bilal Akin, University of Texas, Dallas, TX
  2. Dr. Mithat Kisacikoglu, Univ. of Alabama, Tusc., AL
  3. Dr. Veda Galigekere, Oak Ridge National Lab, TN
  4. Dr. Rakib Islam, Dura Automotive, MI
  5. Dr. Yingjie Li, Hyperloop One, CA
  6. Dr. Jason Pries, Booz Allen Hamilton, VA
  7. Dr. Subrata Saha AISIN AW Co. LTD.
  8. Dr. Jiangbiao He, University of Kentucky, US
- Decision is based on at least 2 reviews
- Reviewers/members database is evolving
- Term is two years, but it can be extended

***We appreciate our Associate Editors for their kind voluntary work***

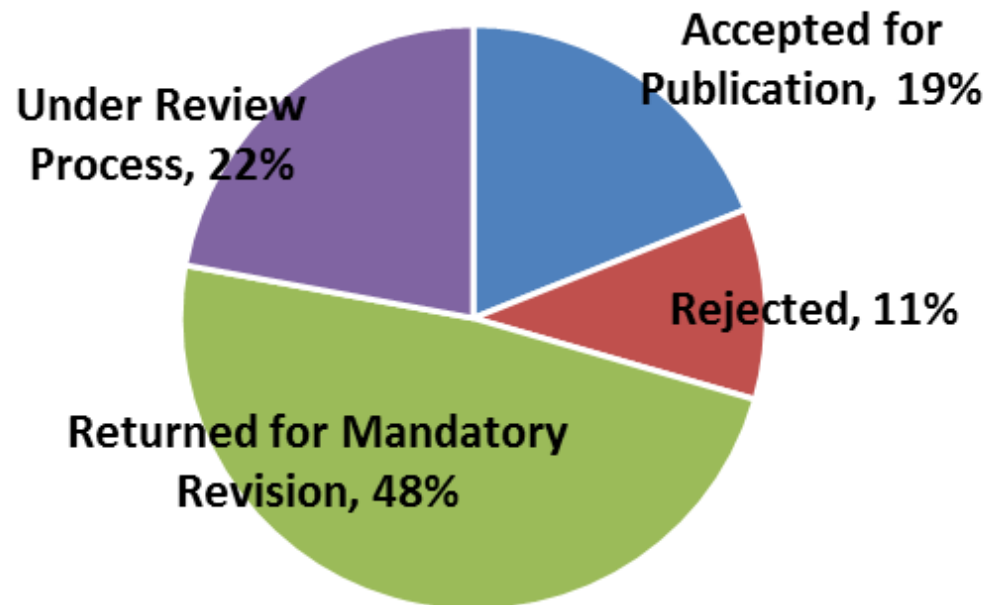
# TSC Transaction Paper Review

Manuscript Status	01/01/2020	01/01/2019
	10/10/2020	01/01/2020
Manuscripts Submitted	95	48
Accepted for Publication	18	13
Rejected	10	2
Returned for Mandatory Revision	46	25
Under Review Process	21	8

**Note: Number of manuscripts submitted got doubled**

# Transaction Paper Review

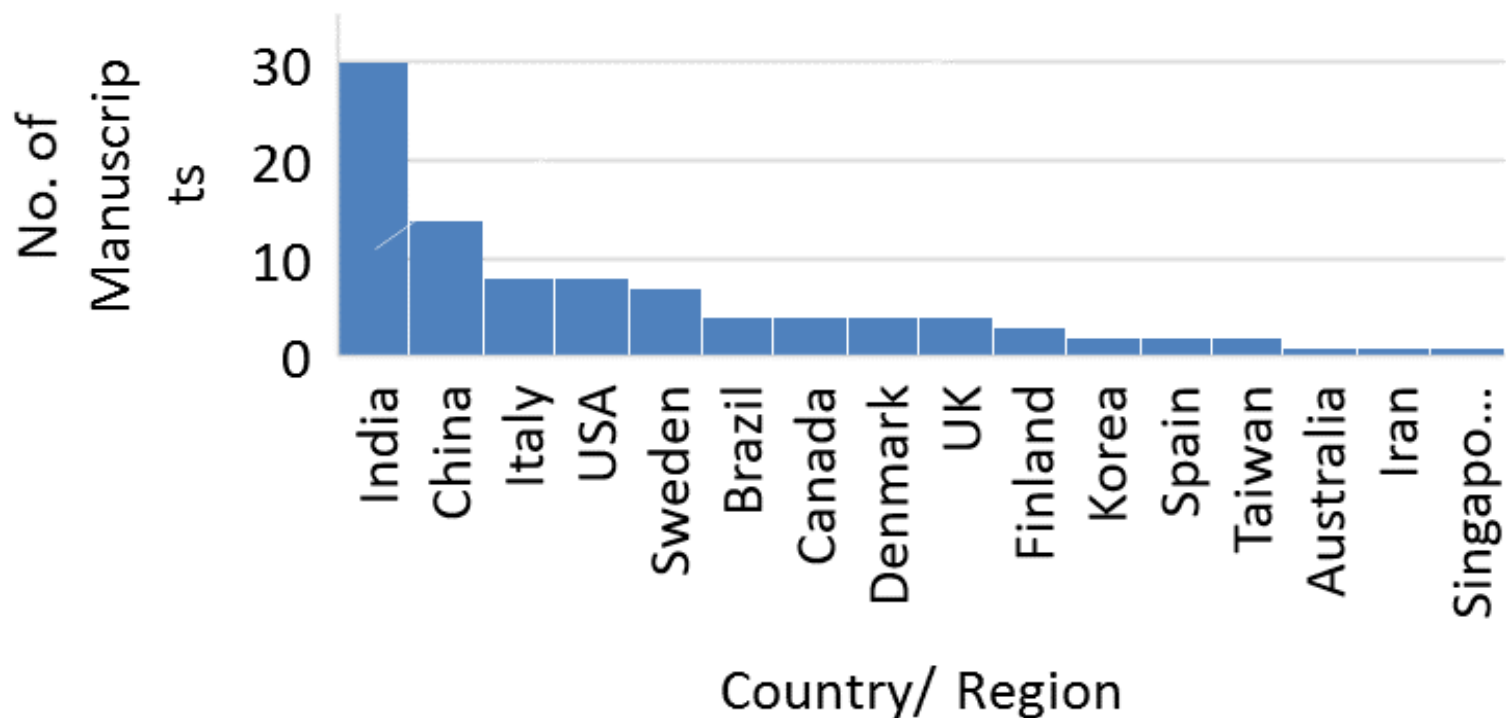
## Manuscript Status: Jan'2020 to Oct'2020



**Note: AEs and Reviewers are maintaining a quick turnaround**

# Transaction Paper Review

Global Submission: Jan'20 to Oct'20  
(Total = 95)



# TSC Prize Paper Award - 2020

## Award Committee

Chair – Dr. Mohammad Anwar

## Committee Members:

1. Dr. Manuel Arias Perez de Azpeitia, Universidad de Oviedo
2. Dr. Wencong Su, University of Michigan
3. Dr. Mahshid Amirabadi, Northeastern University
4. Dr. Mahesh Krishnamurthy, IIT, Chicago

The award committee evaluated 7 top ranked digests from ECCE 2019 Track D - Transportation System Applications.

# TSC Prize Paper Award - 2020

## 1<sup>st</sup> Prize

### Title

Reduction of AM Radio Noise of VVVF Inverter for Rolling Stock and the Simulation Model of the Noise Current

### Authors

Satoshi Azuma, Daisuke Itoh, Takahito Ishida, Kengo Sugahara and Shigeo



# TSC Prize Paper Award - 2020

## 2<sup>nd</sup> Prize

### Title

Study on Parasitic Capacitances Effect in High Power Inductive Power Transfer System

### Authors

Ying Mei, Jiande Wu, Hua Zhang, Fei Lu and Xiangning He

# TSC Prize Paper Award - 2020

## 3<sup>rd</sup> Prize

### Title

Development of a 100kW SiC Switched Tank Converter for Automotive Applications

### Authors

Ze Ni, Yanchao Li, Chengkun Liu, Mengxuan Wei and Dong Cao

# Mithat Kisacikoglu

## The University of Alabama

### *Vice Chair - Conferences*

# ECCE 2020 – Transportation Electrification Applications

## Session topics:

- Inductive power transfer
- Other charging techniques
- Batteries and battery management
- Infrastructures, fuel cell systems
- Electric drivetrains
- Applications of electric traction/propulsion
- Other topics in transportation electrification applications

# ECCE 2020 – Transportation Electrification Applications

**Mithat Kisacikoglu** served as a vice-chair for this track.

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

- **Di Pan**, GE Global Research
- **Gilsu Choi**, Inha University, Korea
- **Jason Pries**, Booz Allen Hamilton, Knoxville, TN

	Oral	Poster	Withdrawn	Rejected	Total	Acceptance Rate
ECCE 2018	25	48	26		99	73.7%
ECCE 2019	25	32	7	23	87	65.5%
ECCE 2020	34	33	10	37	114	58.8%

# ECCE 2020 – Transportation Electrification Applications

<u>Session Name</u>	<u>Session Chair1</u>	<u>Session Chair2</u>	<u>Paper Count</u>
Wireless Power Transfer in Transportation	Burak Ozpineci	Salman Harasis	8
Converters for Electric Vehicles	Yilmaz Sozer	Mohamed Badawy	6
Battery Management Systems	Jaber Abu-Qahouq	Sheldon Williamson	8
Electric Drivetrains	Pramot Prerit	Taehyung Kim	12
EV Charging Infrastructure	Khorshed Alam	Rashmi Prasad	14
Transportation Electrification and Battery Management Systems	Hassan Eldeeb	Rafal Wojda	19
			67

Yellow - Oral Presentations

Orange – Poster Presentations

# ITEC Global Series

- **ITEC North America (60% PELS, 20% IAS, 20% PES)**
  - ITEC'12: June 18-20, 2012, Dearborn, MI, USA
  - ITEC'13: June 16-19, 2013, Dearborn, MI, USA
  - ITEC'14: June 15-18, 2014, Dearborn, MI, USA
  - ITEC'15: June 14-17, 2015, Dearborn, MI, USA
  - ITEC'16: June 27-29, 2016, Dearborn, MI, USA
  - ITEC'17: June 22-24, 2017, Navy Pier, Chicago, IL, USA
  - ITEC'18: June 13-15, 2018, Long Beach, CA, USA
  - ITEC'19: June 19-21, 2019, Metro Detroit, MI, USA
  - ITEC'20: June 19-21, 2020, Navy Pier, Chicago (Virtual), USA
  - **ITEC'21: June 23-25, 2021, Chicago, USA**
- **ITEC Asia & Pacific (36% IAS, 12% PELS, 12% PES, 40% Others) – Led by IAS**
  - Aug. 31-Sept. 3, 2014, Beijing, China
  - June 1-4, 2016, Busan, Korea
  - August 2-5, 2017, Harbin, China
  - June 6-9, 2018, BITEC, Bangkok, Thailand
  - May 8-11, 2019, Seogwipo-si, Jeju, Korea
  - **2020: Cancelled.**
  - **Nov 11-12, 2021: Halong, Vietnam**
  - **2022: Zhejiang University, China**

# ITEC Global Series

- **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 2021: New Delhi, India (Dates TBD)**
- **ESARS-ITEC Europe**
  - November 2-4, 2016, Toulouse, France
  - November 7-9, 2018, Nottingham, UK
  - **2020 conference is moved to 2022, Venice, Italy**



# ITEC 2020: June 23-26, 2020, Virtual Conference

- Co-Sponsored by IEEE-PELS (60%), IAS (20%), and PES (20%)
- Virtual conference (ON24+Zoom+Whova), June 23-26, 2020

## Virtual tools:

- **ON24:** virtual platform, broadcast pre-recorded presentations:
  - One-to-many live streaming (June 23-26)
  - On-demand service (June 27-July 17)
- **Zoom:** live sessions (Q&A and industry sessions)
- **Whova:** main entrance/main hall, online networking

## Key data:

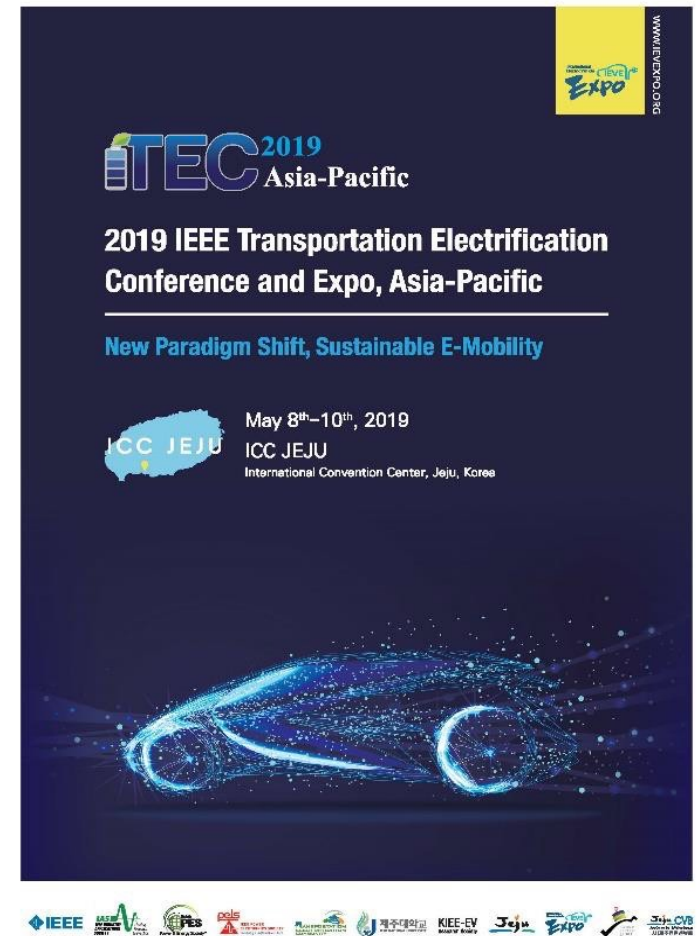
- **365 digests submitted and reviewed**
- **227 reviewers/1321 reviews:** every paper reviewed by 3+ reviewers
- **208 papers presented:** only pre-recorded oral presentations (no poster)
- **36 technical sessions**
- **8 keynotes, 6 from industry and 1 from ANL**
- **28 proposals for tutorials, 8 accepted, 6 from industry**
- **8 discussion panels planned (cancelled due to COVID-19)**
- **500+ registrations**

# ITEC 2020 Leadership

- **General Chair:** Babak Nahid-Mobarakeh, McMaster University, Canada
- **General Co-Chair:** Sanjaka G. Wirasingha, Valeo, USA
- **Program Chair:** Srdjan Lukic, North Carolina State University, USA
- **Program Co-Chair:** Matthias Priendl, Columbia University, USA
- **Assistant Program Chair:** Phillip Kollmeyer, McMaster University, Canada
- **Publication Chair:** Fei Gao, UTBM, France
- **Publication Co-Chair:** Liang Du, Temple University, USA
- **Tutorials Chair:** Srdjan Lukic, North Carolina State University, USA
- **Panels Chairs:** Jiangbiao He, University of Kentucky, USA  
Mohammad Toulabi, Fiat Chrysler Automobiles, USA
- **Exhibition Chair:** Brij Singh, John Deere, USA
- **Exhibition Co-Chair:** Cong Li, GE Global Research
- **Awards Chair:** Ali Bazzi, University of Connecticut, USA
- **WIE Chair:** Jennifer Bauman, McMaster University, Canada
- **Registration Chair and Conference Coordinator:** Rebecca Krishnamurthy, RNA Associates, USA

# ITEC 2019 Asia-Pacific, May 8-11, 2019, Jeju, Korea

- 28 Sessions
- 9 Keynote Speeches
- 3 Invited Lectures
- 153 Papers
- General Chairs: **Gae-Myoung Lee**  
**Young-il Lee**  
**Woong-Chul Choi**



# ITEC 2019 India, Dec. 17-19, 2019, Bangalore, India



3<sup>rd</sup> EDITION  
**ITECINDIA** 2019  
*e-Mobility Solutions for Community*



# Upcoming Conferences

TSC will be involved in various conferences in 2021 at various capacities.

- **IEMDC 2021**, Hartford, CT
- **ECCE Asia 2021**, Singapore
- **APEC 2021**, Phoenix, AZ
- **ITEC 2021**, Chicago, IL
- **SDEMPED 2021**, Dallas, TX
- **ECCE 2021**, Vancouver, BC Canada
- **ITEC Asia-Pacific 2021**, Halong, Vietnam
- **SLED 2021**, Korea (TBD)



# IEMDC 2021, May 2021, Hartford, CT

**General Chair:** Ali Bazzi, University of Connecticut

- Rotating Electrical Machines
- Electrical Drives
- Special Machines, Electromagnetic Actuators and Sensors
- Thermal, Materials and Efficiency Issues
- Condition Monitoring, Fault Diagnosis and Prognosis
- Transportation Applications
- Energy and Grid-Connected Applications



## IMPORTANT DATES

**13 DECEMBER 2020** | DIGEST SUBMISSION DEADLINE

**21 FEBRUARY 2021** | DECISION NOTIFICATION

**04 APRIL 2021** | FINAL SUBMISSION OF ACCEPTED PAPERS

**04 APRIL 2021** | EARLY BIRD REGISTRATION DEADLINES



# ECCE Asia 2021, May 24-27 2021, Singapore

**Organizing Chair:** Sanjib Kumar Panda, National University of Singapore, Singapore

Due to uncertainties caused by COVID-19, ECCE Asia 2021 organizing committee has decided that the conference will be conducted in hybrid / virtual format. More details will be announced later.

The rate to participate virtually is expected to be around 60% of the in-person rate. Final registration rates would be confirmed in January, 2021.

**Dates of the Conference: 24th - 27th May 2021**

## ◆ DIGEST SUBMISSION

**Deadline for Digest Submission: ~~30th Sep. 2020~~ 21st Oct. 2020**

**Notification of Acceptance: 1st Jan. 2021**

**Deadline for Final Manuscript Submission: 15th Feb. 2021**

# APEC 2021, June 9-13, 2021, Phoenix, AZ

The Applied Power Electronics Conference (APEC) and its sponsors, the IEEE Power Electronics Society (PELS), the IEEE Industry Applications Society (IAS) and the Power Sources Manufacturers Association (PSMA) are pleased to announce that APEC 2021 will now be held from June 9-13, 2021 in Phoenix, AZ. The conference and exposition had previously been scheduled to take place in March. Additionally, the exposition will take place at the start of the conference rather than in the middle as it has been in years past. The location of APEC 2021 will remain, as originally planned, at the Phoenix Arizona Convention Center.

<http://apec-conf.org/news/apec-2021-announces-new-dates/>



## In process:

- Technical submissions process will re-open - more details to follow on revised deadlines
- Reset the review schedule and other dates by approx. 8-10 weeks
- E-mail communication to stakeholders
- Revised schedule (Wednesday to Sunday event, instead of Saturday to Thursday)

### Option: Hybrid event, June

Working plan is for “in-person” event June

Considering if/how to supplement this with virtual support

### Option: Fully virtual event

If broad Covid restrictions remain in place, we are planning for a pivot to a Fully Virtual event



# ITEC 2021, June 23-25, 2021, Chicago, IL

- **General Chair:** Srdjan Lukic, North Carolina State University
- **General Co-Chair:** Long Wu, John Deere
- **Program Chair:** Matthias Priendl, Columbia University
- **Program Co-Chair:** Phillip Kollmeyer, McMaster University
- **Assistant Program Chair:** Mohammad Sedigh Toulabi, University of Windsor

## EACH PAPER PROPOSAL MUST INCLUDE:

- Technical track name, number, paper title.
- An abstract of maximum 100 words and a digest of maximum five pages (single-column, double spaced, including figures and tables). References may continue onto a sixth page if necessary

## KEY DATES

Abstract Submission Date:  
December 1st, 2020

Notification of Acceptance:  
February 26th, 2021

Final Paper Submission Date:  
April 30, 2021

Early Bird Registration:  
May 15, 2021

# SDEMPD 2021 IEEE International Symposium on Diagnostics for Electric Machines, Power Electronics and Drives

22-25 Aug 2021. Dallas, TX

<https://www.ieee-sdemped.org/>

- 1. Electrical machines:** Failure detection and location/vibration, audible noise, electrical or mechanical variables, sensors, insulation failures, electrical, mechanical and thermal models
- 2. Power electronics:** Diagnostics / input-output monitoring, thermal and/or electrical measurements on power semi-conductors, control supervision, signal processing
- 3. Adjustable speed drives :** Monitoring and diagnostics for ASDs using electrical machines, power converters and control systems, computer-based signal processing and data analysis
- 4. Methods and tools for diagnostic and prognostic:** neural networks, fuzzy logic, AI, genetic algorithms, expert systems, identification, signal processing techniques, observers...
- 5. Materials for electrical machines:** Insulating and magnetic materials, RUL models, ageing tests
- 6. Tests for predictive maintenance:** Partial discharge analysis and tests, new instruments for diagnostics
- 7. Fuel Cells and Electrolyzers :** models for diagnostic or ageing, tests
- 8. Power Systems and Power Networks, Embedded Systems, Emerging Applications**

## Important Dates

All Submissions Open:	October 1, 2020
Tutorial and Special Session Proposal Deadline:	January 15, 2021
Manuscripts Submission Deadline:	March 1, 2021
Final Acceptance Notification:	April 30, 2021
Final Draft Submissions:	June 1, 2021



# **SDEMPD 2021 IEEE International Symposium on Diagnostics for Electric Machines, Power Electronics and Drives**

22-25 Aug 2021. Dallas, TX

## **GENERAL CO-CHAIRS**

Bilal Akin,	USA	University of Texas, Dallas
G�rard-Andr� Capolino,	France	University of Picardie

## **HONORARY CO-CHAIRS**

Thomas Habetler,	USA	Georgia Tech
Hamid Toliyat	USA	Texas A&M University

## **TECHNICAL PROGRAM CO-CHAIRS**

Antonio J. M. Cardoso,	Portugal	University of Beira Interior
Huai Wang,	Denmark	Aalborg University
Jos�-A. Antonino-Daviu,	Spain	Universitat Polit�cnica de Val�ncia
Sang Bin Lee,	Korea	Korea University

# ECCE 2021, Oct.10-14, 2021 Vancouver, Canada

**General Chair:** Giovanna Oriti, Naval Postgraduate School, USA

## DIGEST SUBMISSION

Digest Submission Deadline: January 15, 2021

Author Notification: May 1, 2021

Final Papers With IEEE Copyright Forms: June 30, 2021

IEEE-ECCE 2021

## *Vancouver, Canada*

*Oct. 10 – 14, 2021*

IEEE-ECCE 2021 is a five-day immersion into the latest innovations in the electrical and electromechanical energy conversion field. Experience the exhibit hall with industry's latest innovations, hands-on demos, technical presentations and excellent food.

# ITEC-AP 2021, Nov.11-12, 2021, Ha Long Bay, Vietnam

**General Chair:** Anh-Tuan Le, Hanoi University of Science and Technology, Vietnam

**Technical Program Chair:** Van-Sang Pham, Hanoi University of Science and Technology, Vietnam

**Venue:** Halong Vinpearl Resort in Quangninh province. The conference venue has a unique signature, extremely well-known, and world heritage

**Digest submission deadline:** TBD

**Final paper Submission deadline:** 08/31/2020



# Giovanna Oriti

## *ECCE 2021 General Chair*

# Bruno Lequesne

## *Transportation Electrification Community (TEC) Chair*



# TEC Standards Update

- IPCSD now has an active standards committee
  - TSC is represented by Bruno Lequesne
- No activity in 2020 from IAS TSC
- TEC however has an active standard committee with the following updates:
  - Survey planned for this month with the following objectives:
    - a. Obtain an understanding of present standards or guidelines being used by utilities and industry in the Transportation Electrification areas
    - b. Determine areas of high interest for developing standards
    - c. Determine any immediate needs (or gaps) that can be covered in 2021
  - A couple of recent initiatives:
    - P2023 - Standard for Digital Transformation Architecture and Framework (sponsored by IES)
    - Work being started about system issues involving grid/vehicle interface (sponsored by PES)



# TEC (Transportation Electrification Community) Update



- TEC federates a number of IEEE societies to promote transportation within IEEE
  - Society sponsors: IAS, IES, ITSS, PELS, PES, SA, AESS, RS, Systems Council
- Promotes any society activities (conferences, etc)
- Program of webinars, tutorials, student competitions, etc.
- Major sponsor of Electrification Magazine (after PES)
- Newsletter expected to grow early 2011 (January issue focused on truck and bus electrification)
- Sponsorship AIAA/IEEE Electric Aircraft Technologies Symposium (EATS) (in August)
- Individual membership is **FREE for IAS members**



# Yasushi Nishimura

*Nagamori Foundation  
Secretary General*

# Bulent Sarlioglu

## University of Wisconsin-Madison

### *Chair*

# Committee Officers – 2020-2021

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## Secretary

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Dura Automotive

## Past Chair

Dr. Mohammad Islam  
Halla Mechatronics

**1. If you have any changes in your contact information and/or affiliations**

**2. If you want to become a session chair or topic chair for ECCE 2021 please text on the chat box, or if you are a new member please email your name and contact info to:**

**rakibulislam2000@gmail.com**

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

**Please join TSC**

**rakibulislam2000@gmail.com**