

# Transportation Systems Committee (TSC) Meeting

## ECCE 2018

Portland, Oregon  
September 25, 2018

# Agenda

- Introduction
- 2018-2019 TSC Committee
- Committee Update
- Transactions Paper Review
- TSC Prize Papers
- Conference Activities
- Future Conferences

# Committee Officers – 2018/19

## **Chair:**

Mohammad Islam

Halla Mechatronics

## **Vice Chair (Papers):**

Bulent Sarlioglu

University of Wisconsin-Madison

## **Vice Chair (Conferences):**

Mohammad Anwar

General Motors

## **Secretary:**

Mithat Kisacikoglu

University of Alabama

## **Past Chair:**

Burak Ozpineci

Oak Ridge National Laboratory

# Committee Update

- IEEE IAS TSC has a new active website at <http://sites.ieee.org/ias-tcs/>
- This is a new website and we will keep this website updated with information on our committee meetings and related committee news.
  - If you have suggestions for the content, please let us know.
- We sent out around 10 e-mails annually to our members to keep them updated regarding our society/committee related activities.
- Total members as of 2018 is ~230.
- If you want to be a member, please send your contact information to Dr. Mithat Kisacikoglu at [mkisacik@ua.edu](mailto:mkisacik@ua.edu)

# Transaction Paper Review

- TSC started reviewing papers for IA transactions/magazines since 2012
- TCPRC: Dr. Bulent Sarlioglu – Vice Chair (Papers)
- Associate Editors:
  - Dr. Bilal Akin, University of Texas, Dallas, TX
  - Dr. Mithat Kisacikoglu, University of Alabama, Tuscaloosa, AL
  - Dr. Veda Galigekere, Oak Ridge National Lab, TN
  - Dr. Rakib Islam, Dura Automotive, MI
  - Dr. Jagadeesh Tangadu, UTRC, CT
  - Dr. Yingjie Li, Hyperloop One, CA
- Reviewers/members database is evolving
- Decision is based on at least 2 reviews

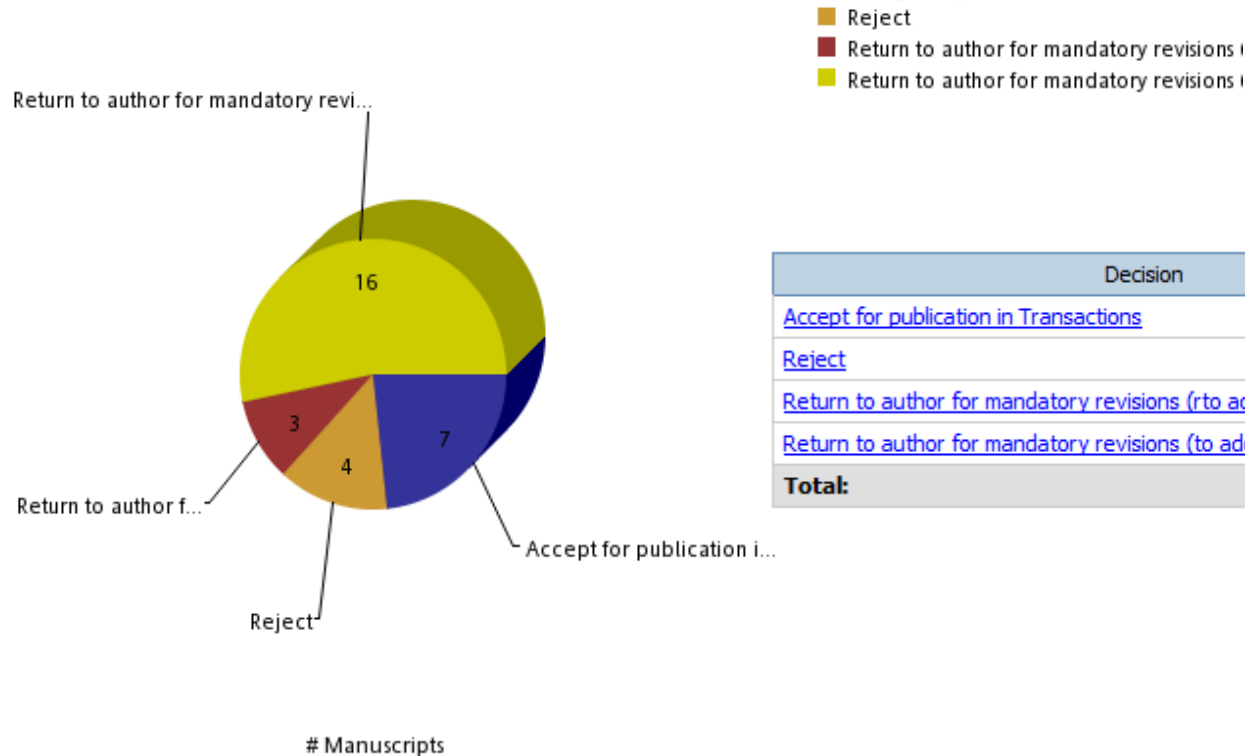
# Transaction Paper Review

## Transactions Papers (01/01/2017-Present):

- 37 Manuscripts submitted for review
- 7 Accepted for publication
- 19 Returned for mandatory revisions
- 4 Rejected
- 7 Under review process

# Transaction Paper Review

## Final Decisions Received (01/01/2017-Present)

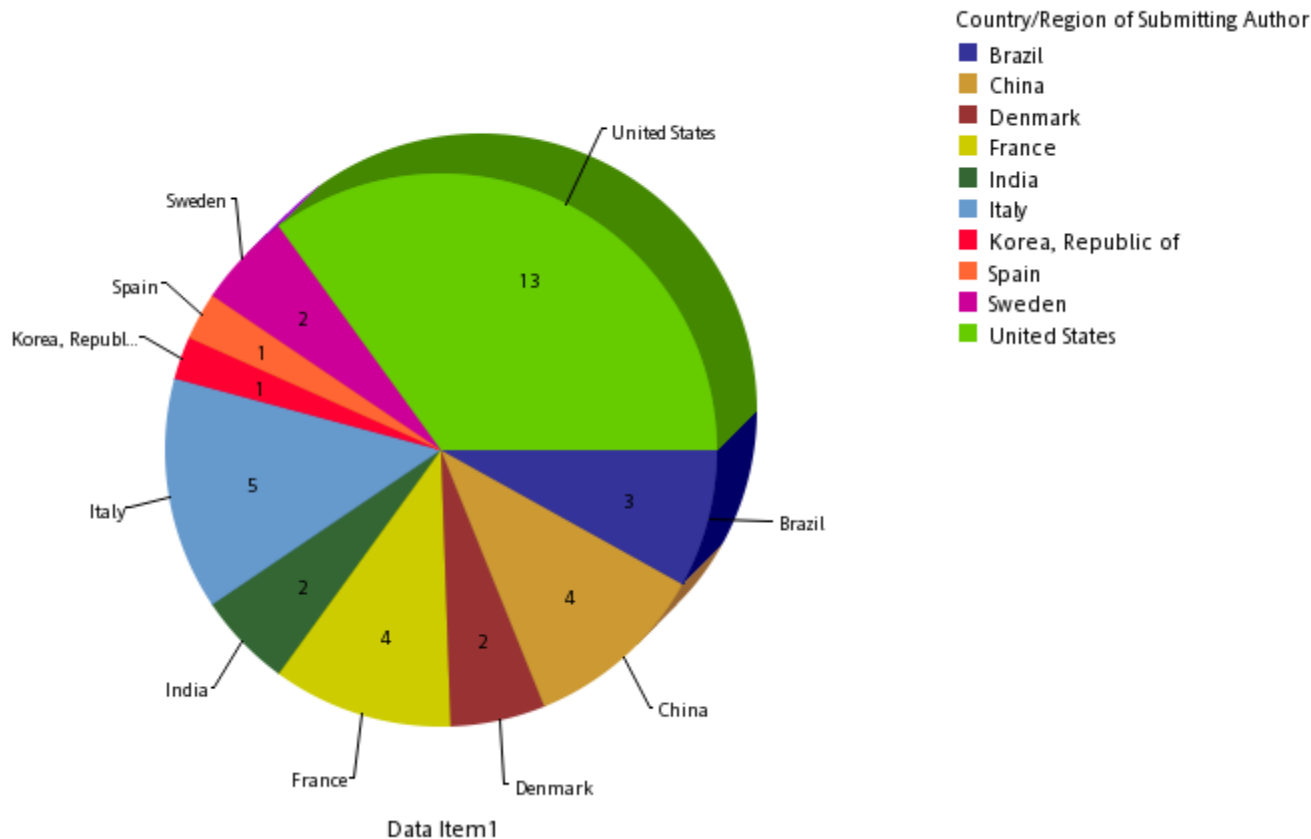


Decision	# Manuscripts	Percentage
<a href="#">Accept for publication in Transactions</a>	7	23.33%
<a href="#">Reject</a>	4	13.33%
<a href="#">Return to author for mandatory revisions (rto address reviewer comments)</a>	3	10.00%
<a href="#">Return to author for mandatory revisions (to address reviewer comments)</a>	16	53.33%
<b>Total:</b>	<b>30</b>	<b>100.00%</b>

# Transaction Paper Review

## Global Submission (01/01/2017 - Present)

Number of Manuscripts by Country/Region





# AE Appreciation

- TCPRC: Dr. Bulent Sarlioglu
  - Associate Editors:
    - Dr. Bilal Akin, University of Texas, Dallas, TX
    - Dr. Mithat Kisacikoglu, University of Alabama, Tuscaloosa, AL
    - Dr. Veda Galigekere, ORNL, TN
    - Dr. Rakib Islam, Dura Automotive, MI
    - Dr. Jagadeesh Tangadu, UTRC, CT
    - Dr. Yingjie Li, Hyperloop One, CA

# TSC Prize Paper Award - 2018

## Award Committee:

Chair – Bulent Sarlioglu

## Committee Members:

- Manuel Arias Perez de Azpeitia
- Wencong Su
- Dong Cao
- Antonio J Marques Cardoso
- Mahshid Amirabadi
- Ali Bazzi

The award committee evaluated 6 top ranked digests from ECCE 2017 Track D- Transportation System Applications

# TSC Prize Paper Award - 2018

1<sup>st</sup> Prize

**Title:**

An Analytical Method to Calculate Winding Resistance for Planar Coil with Ferrite Plate and Litz Wire in Inductive Power Transfer

**Authors:**

Ming Lu and Khai D. T. Ngo

# TSC Prize Paper Award - 2018

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

### Title:

Maximum Efficiency Control Strategy of PM Traction Machine Drives in GM Hybrid and Electric Vehicles

### Authors:

Brian Gallert, Gilsu Choi, Kibok Lee, Xin Jing, and Yochan Son

# TSC Prize Paper Award - 2018

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

### Title:

A Compact Unified Methodology via a Recurrent Neural Network for Accurate Modeling of Lithium-Ion Battery Voltage and State-of-Charge

### Authors:

Ruxio Zhao, Phillip J. Kollmeyer, Robert D. Lorenz, and Thomas M. Jahns

# ECCE 2018 – Transportation Applications

- 99 digest submitted
- Significant increase in digest submission than past years
- Acceptance rate 73.7%
- 25 papers are distributed in 6 oral sessions
- 48 papers are presented in poster sessions

# ECCE 2018 – Transportation Applications

<u>ID</u>	<u>Session Name</u>	<u>Count</u>	
<b>ORAL</b>		<b>#papers</b>	
D1	Inductive power transfer	4	Completed
D2	Batteries modelling and management 1	4	
D3	Batteries modelling and management 2	4	Completed
D4	Electric Drivetrains	4	
D5	Applications of electric propulsion	4	
D6	Transportation electrification applications	5	Completed
		<b>25</b>	
<b>POSTER</b>		<b>acceptance=</b>	<b>25%</b>
DP1	Inductive Power Transfer & Charging Techniques	15	
DP2	Batteries Management & Infrastructures	16	
DP3	app.	17	
		<b>48</b>	
		<b>acceptance=</b>	<b>48%</b>

# 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 Asia & Pacific (36% IAS, 12% PELS, 12% PES, 40% Others) – Led by IAS**
  - August 31 – September 3, 2014, Beijing, China
  - June 1-4, 2016, Busan, Korea
  - August 2-5, 2017, Harbin, China
  - June 6-9, 2018, BITEC, Bangkok, Thailand
- **ITEC India & Middle East – Led by IAS in Partnership with SAEINDIA**
  - August 27 – 29, 2015, Chennai, India
  - December 13-15, 2017, Pune, India
- **ESARS-ITEC Europe**
  - November 2-4, 2016, Toulouse, France
  - November 7-9, 2018, Nottingham, UK



# ITEC 2018

- General Chair: Bulent Sarlioglu, University of Wisconsin-Madison
- General Co-Chairs:
  - Tom Stricker, Toyota Motor North America, Inc.
  - Nick Nagel, Triumph Aerospace, USA
  - Gary Parker, Cummins Inc, USA
  - Kent Wanner, John Deere, USA
- Program Co-Chairs:
  - Sanjaka Wirasingha, Valeo
  - Ryan Ahmed, General Motors

# ITEC 2018

- Co-Sponsored by IEEE-PELS (60%), IAS (20%), and PES (20%)
- June 13-15, 2018
- Long Beach, CA
- Conference/Exhibition Coordinator: RNA Associates, Inc.
- Registration: IEEE Meeting & Conference Management (IEEE MCM)
- Account: IEEE Concentration Banking

# ITEC 2018

- 435 paid registrations
- 301 Author/non-author registration
- 75 Exhibitors
- 35 One day pass
- 75 keynote speakers/short-course and tutorial organizers/panel organizers-moderators-panelists/exhibitors
- ~15 student volunteers
- 39/40 Booth sold
- ~250k revenue

# ITEC 2018

## 12 Keynote speaks:

**Frede Blaabjerg**  
Professor, Villum Investigator at  
Aalborg University, Denmark

**Sean Clarke**  
X-57 Principal Investigator,  
NASA Armstrong  
Flight Research Center

**Rachael Nealer**  
Program Manager at  
US Department of Energy

**Dan Ludois**  
CSO, C-Motive Technologies  
and WEMPEC

**Ali Emadi**  
President and CEO, Enedym, Inc  
Professor, McMaster University

**Alireza Khaligh**  
Professor at University of Maryland  
and Expert at National Science  
Foundation

**Evgeni Ganev**  
Chief Engineer,  
Honeywell

**Peter Savagian**  
Senior Vice President,  
Product Development,  
Faraday Future



# ITEC 2018 – Short Courses

1. **“Power Semiconductors for Vehicle Traction Inverters: From Discrete to Power Modules, from Silicon to Wide Band Gap Devices ,”** Andrea Christmann, Infineon
2. **“Developing Battery Models for System Level Simulation and Control Design,”** Javier Gazarri, MathWorks
3. **“Trade-Off Analysis Including Motor Type, Winding Type, Material and Cooling Type Selection,”** James Goss and David Alan Staton, Motor-Design Ltd.
4. **“Hardware in the Loop (HIL) Utilization for Power Electronics control development,”** Long Wu, Sumit Dutta, and Scott Johnson, John Deere Electronic Solutions
5. **“Impact of Electrification to Passenger Vehicles on Traditional Mechanical Design and Integration,”** Joe Palazzolo, GKN Driveline

# ITEC 2018 - Tutorials

1. **“Highly reliable System Level Design and Simulation Platform for (H)EV,”** Emmanuel Rutovic, Powersys
2. **“Fundamental Criteria for E-motor Testing Process,”** Lucia Arcaleni, and Vincenzo Luca Fiengo, Khalifa University of Science and Technology, Loccioni
3. **“Experimental Study and Performance Evaluation of Energy Management Strategies for FCHEVs Using Power Hardware-in-the-Loop Platform,”** Ahmed Al Durra, and Imad Matraji, Khalifa University of Science and Technology
4. **“Thermal Design of Power Electronics,”** Lauren Boteler, U.S. Army Research Laboratory
5. **“Primer on Magnetically Suspended Motor Shafts for Transportation Applications,”** Eric Severson, University of Wisconsin-Madison

# ITEC 2018 – Panel Sessions

1. **“Power Electronics – Application of Si, SiC, GaN,”** Elie Naim, AVL Electronics
2. **“Electrification Opportunities and Challenges for Off the Road and Heavy Duty Vehicle Industry,”** Long Wu, John Deere Electronic Solutions
3. **“Multiphase Machines for Traction Drive Systems,”** Omid Beik, Magna Powertrain
4. **“E-motor - Rotational Elements, Bearings for Bell start Generator,”** Hossein Dadkhah & Beijing Wang, Fiat Chrysler Automobiles
5. **“Architecture of Electric Driveline Systems for Future Automotive: Low Voltage (36~48Vdc) Versus High Voltage (400~850Vdc) ,”** Joe Palazzolo & Dhafar Al-Ani, Fiat Chrysler Automobiles
6. **“Flying Cars and Electric Aircraft,”** Kaushik Rajashekara, University of Houston
7. **“Electro-Mechanical Automotive Accessory Systems – Current Challenges”**  
Bruno Lequesne, E-Motors Consulting

# ITEC Asia Pacific - 2018

- Sponsored - IAS, PELS, PES, & Electric Vehicle Association of Thailand (EVAT) June 6-9, 2018, BITEC, Bangkok, Thailand
- Expo had 35 EV exhibitors presenting EV chargers, electric tuk-tuks and other products
- The expo itself saw over 25,000 visitors from 40 countries
- 90 participants for the iTEC main track
- 50 technical presentations from 12 countries
- 200 people for the tutorials
- Keynote speeches - Prof. Hori (Japan), Prof. Pickert (UK), Mr. Mckerracher (UK), and Dr. Wongpiromsarn (Singapore)
- Next ITEC Asia-Pacific, to be held on Jeju island, Korea, May 8-10, 2019.



# ITEC India - 2017

- Led by IAS in Partnership with SAE-INDIA
  - December 13–15, 2017, Pune, India
- Total no. of Delegates 800+
- Organized 19 Keynote Speeches and 14 Plenary Sessions
- No. of papers submitted 318
- No. of track chairs 48
- No. of reviewers 300
- No. of accepted/presented papers 120 (38%)
- The next ITEC India 2019 will take place in Bangalore, India

# ITEC 2019

**June 19-21, 2019, Detroit, MI, USA**

- General Chair:  
Jin Ye, University of Georgia
- Program Chair:  
Babak Nahid-Mobarakeh, Université de Lorraine
- Program Co-Chair:  
Srdjan Lukic, North Carolina State University
- Assistant Program Chair:  
Fei Gao, University of Technology of Belfort-Montbéliard
- Publication Chair:  
Phillip Kollmeyer, McMaster University
- Panels Chair:  
Long Wu, John Deere
- Panels Co-Chair:  
Liang Du, Temple University
- Short Courses/Tutorials Chair:  
Babak Nahid-Mobarakeh, Université de Lorraine

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# ECCE 2019

# IEMDC 2019

# APEC 2019

# IAS Awards

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

**Please join TSC**