

# IEEE IAS

## Electric Machines Committee

2018 Committee Meeting

4.30pm-6pm, Tuesday September 25, 2018

Room **B113** Oregon Convention Center

Portland, Oregon

Chair: Emmanuel Agamloh



# Agenda

1. Review and Approval of 2017 Committee Meeting Minutes
2. Chairman's Report
  - a. Transactions Papers Status Review
  - b. ECCE2018 Technical Program Vice-Chairs Report
3. Old Business
4. Subcommittee Reports:
  - a. Prize Paper Awards Presentation,
  - b. Standards
5. ECCE Session Chair Reports (2018 ECCE sessions completed as of meeting time)
6. New Business:
  - 2019 Officers – *EMC Past Chair Nominates Slate of Officers*
  - Publications Update and IAS Sponsored Conferences
  - ECCE 2018 Update
  - ECCE 2019 – Preparation for ECCE 2019
  - Other Upcoming Conferences
8. Other Business
9. Adjournment



# Attendance

- Please update information on rosters
- NEW MEMBER SIGN-UP: Sign up for membership if you have not received any emails from this committee
- Note: Formally, **you must be an IAS member to vote on IAS committee business**. Please indicate if you are an IAS member!



# 2017 Minutes



# Motion is invited to Accept 2017 Minutes for the Record!

- Minutes were distributed electronically. Corrections were requested and effected last year
- Minutes were re-circulated again 9/10/2018



# Member Recognitions



- **Prof. Hirofumi Akagi**
  - 2018 IEEE Medal for Power Engineering, *“for pioneering contributions to theory and practice of power conversion systems and their applications”*
- **Prof. Longya Xu**
  - Nikola Tesla Award (2018), *“for contributions to design and control of efficient electric machines for wind power generation and electrified vehicles”*
- **Dr. Tomy Sebastian**
  - Nikola Tesla Award (2019), *“for contributions to the design and application of high-performance permanent magnet synchronous machines to electric power steering”*
- **Prof. Ronghai Qu**
  - Members Elevated to IEEE Fellow (class of 2018), *“for contributions to flux modulations machines and wind generators”*
- **Prof. Pinjia Zhang**
  - 2018 IAS Outstanding Young Member Award
- **Prof. Aldo Boglietti**
  - 2018 ICEM Distinguished Service Award, *“for contributions on electrical machines to the scientific community”*



# Transactions Paper Review Status





# Current Associate Editors

- Antonio J. Marques Cardoso Portugal
- Akira Chiba Japan
- Giulio De Donato Italy
- Yao Duan USA
- Greg Heins Australia
- Rukmi Dutta Australia
- Haran Karmaker USA
- Gianmario Pellegrino Italy
- Alberto Tessarolo Italy
- Rajeev Vyas USA
- Katsumi Yamazaki Japan
- Luca Zarri Italy
- Ronghai Qu China
- Zhang Pinjia China
- Parsa Leila USA
- Silvio Vaschetto Italy
- Min-Fu Hsieh Taiwan
- Peter Wung USA

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



# Recently retired Associate Editors

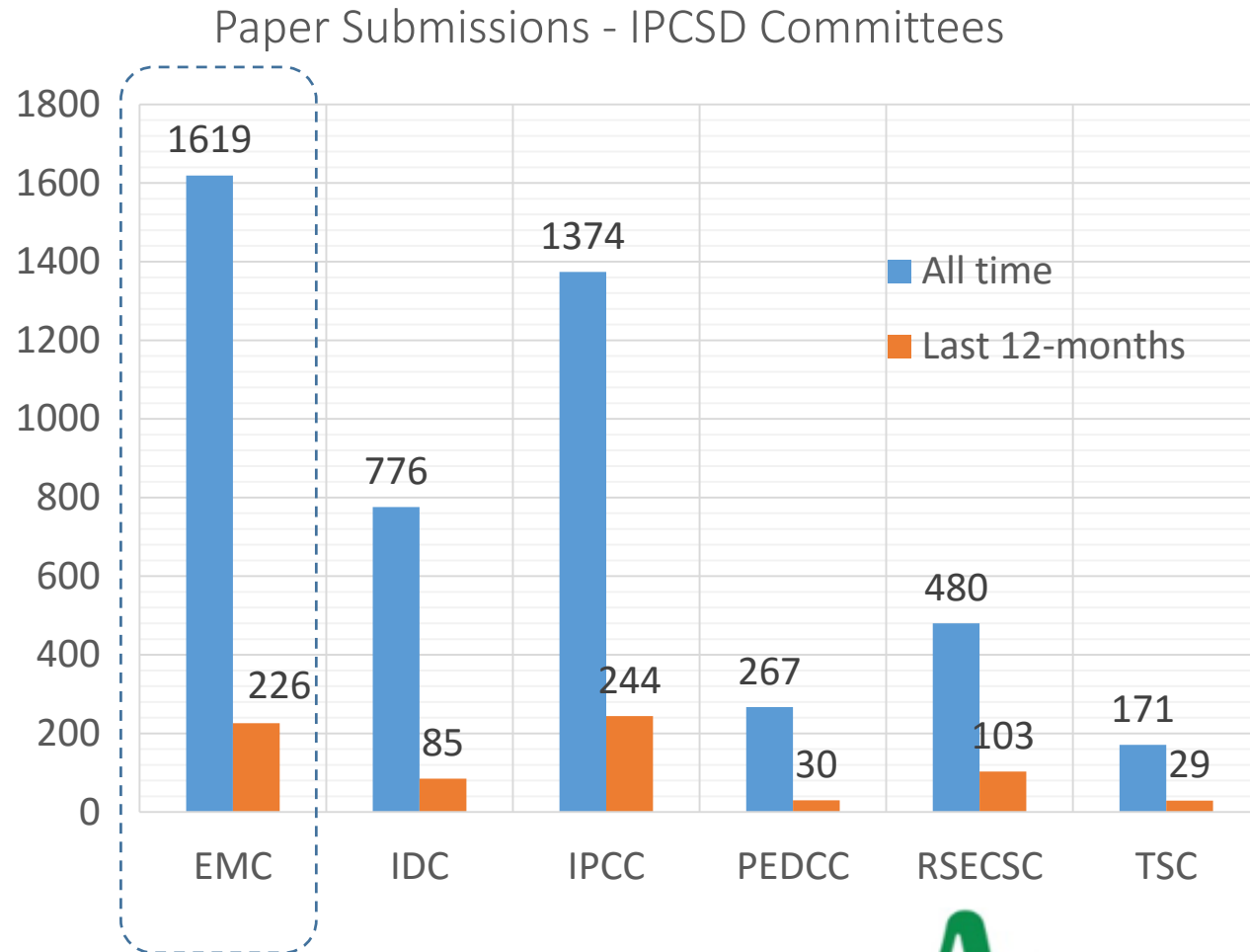
Nicola Bianchi	Italy
Andrea Cavagnino	Italy
Chris Gerada	UK
Maarten Kamper	South Africa
Sang Bin Lee	Korea
Fabrizio Marignetti	Italy
Peter Omand Rasmussen	Denmark
Yilmaz Sozer	USA
Jagadeesh Tangudu	USA
Rafal Wrobel	UK
Thomas Wu	USA/China
Akin Bilal	USA
Marcello Pucci	Italy
Emmanuel Agamloh	USA

**Thank you!!**



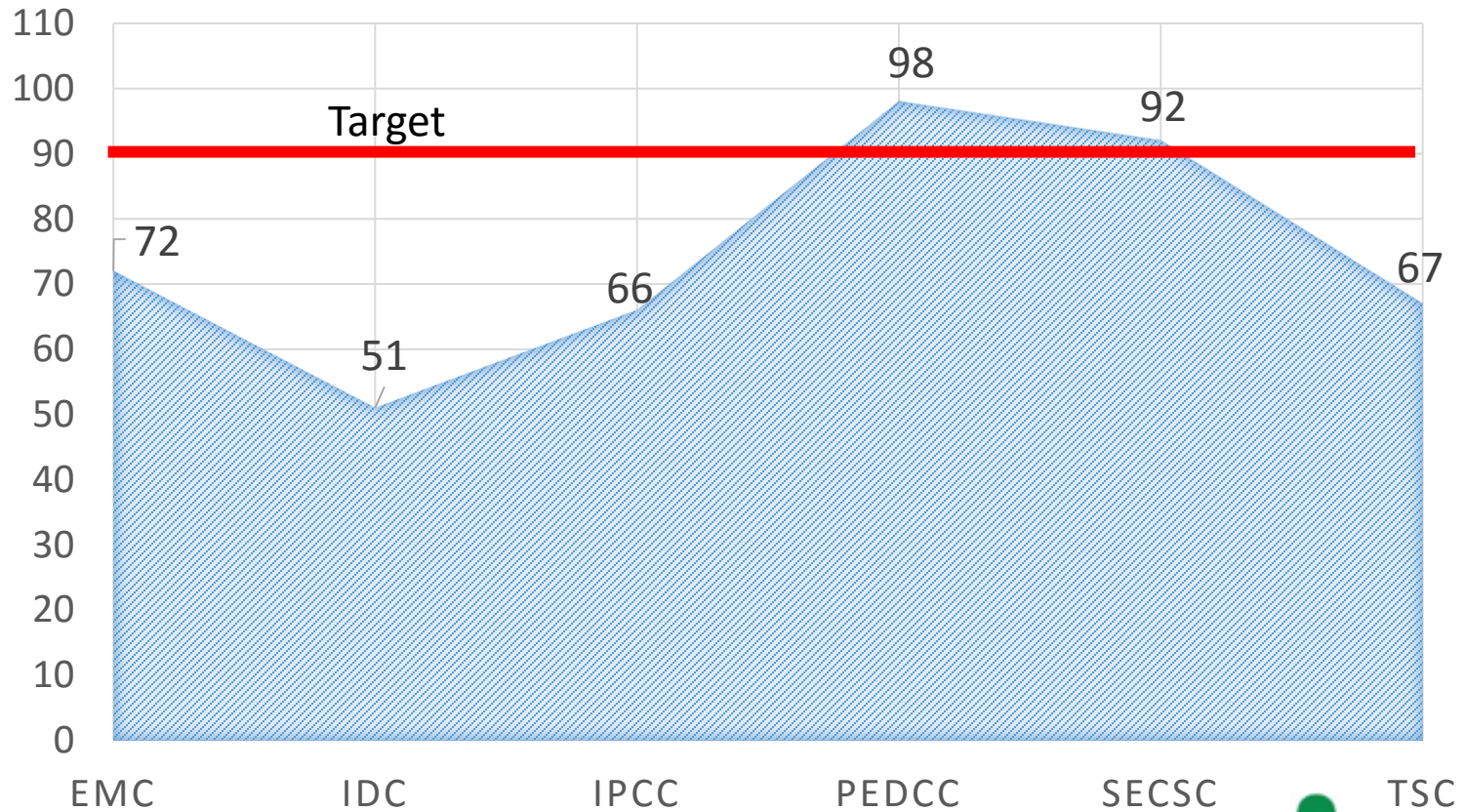
# Submission Statistics

- **226** Original submissions
- Several invitations pending
- **EMC has highest all-time paper submissions of any IAS committee**



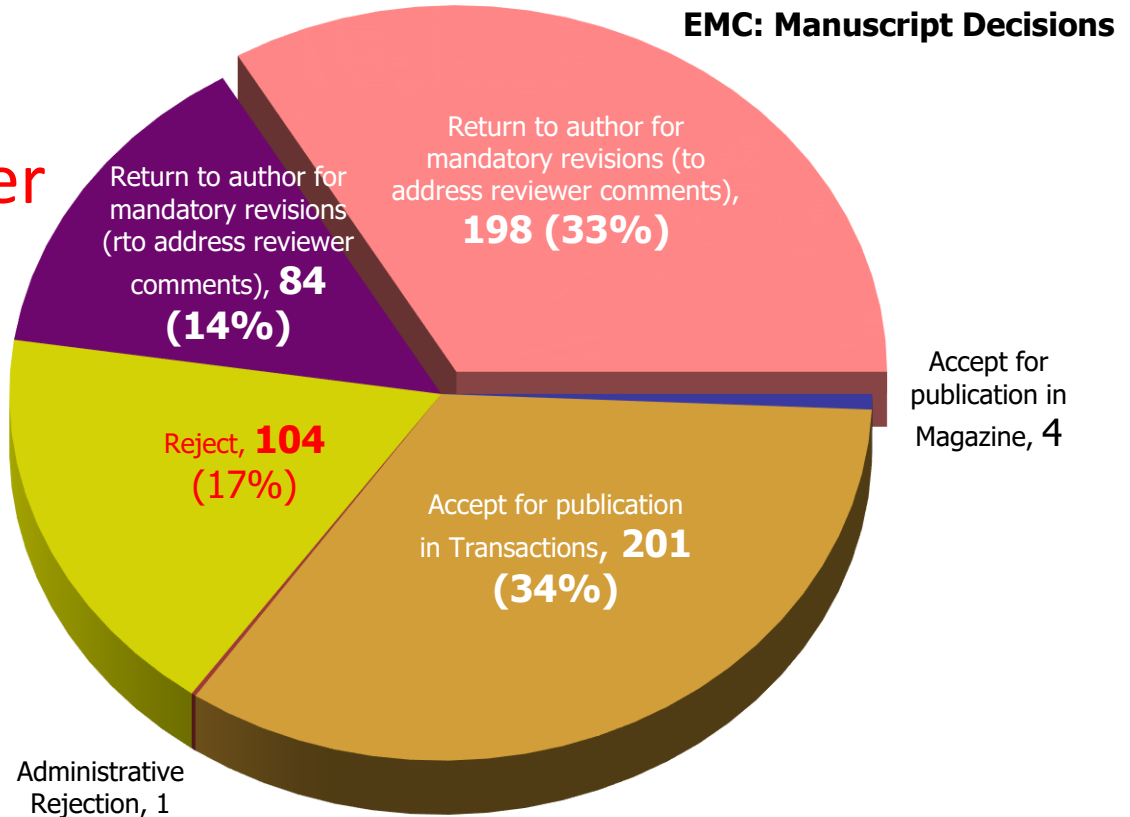
# Review Statistics

AVERAGE FIRST DECISION TIME (**DAYS**)



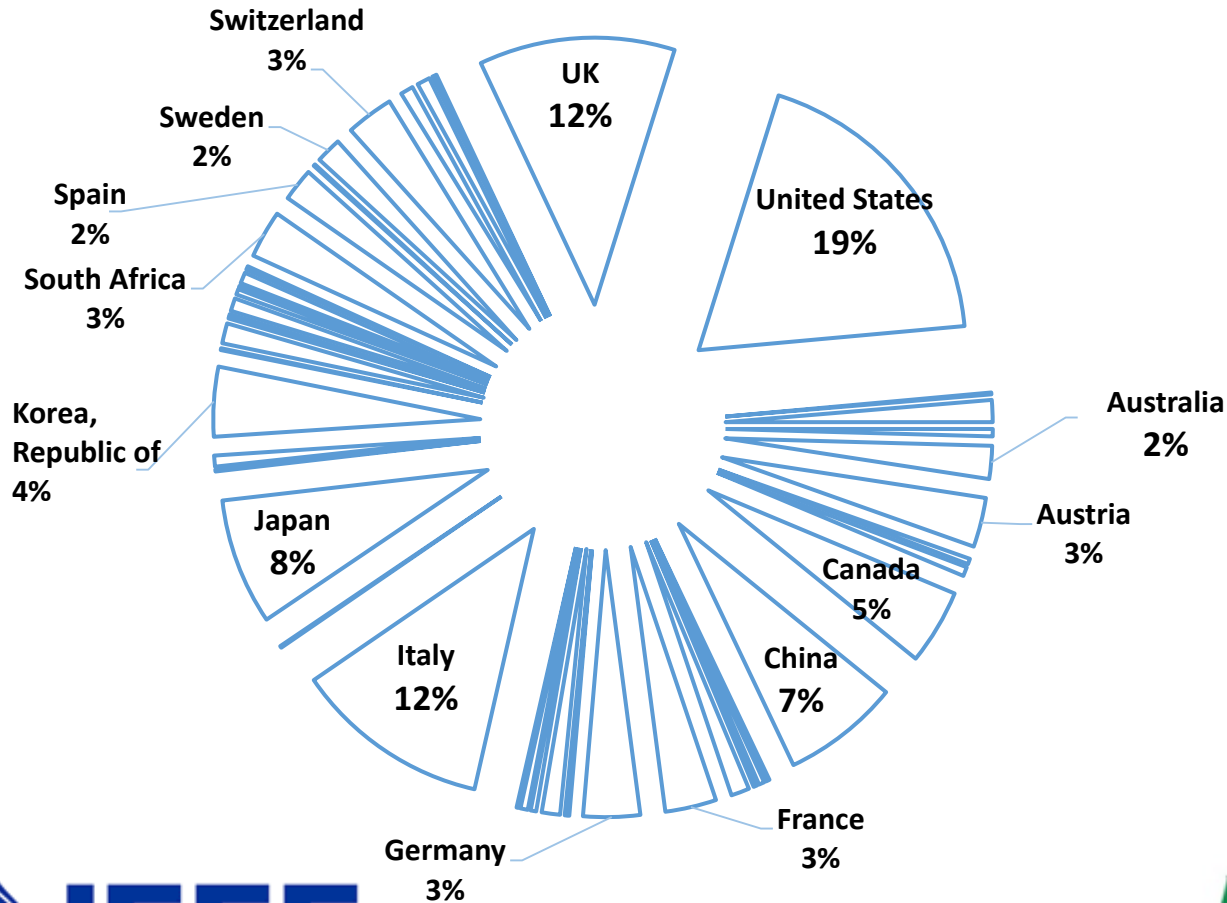
# EMC Decisions Statistics

- EMC Manuscripts submitted on or after Jan 1, 2017
- 592 Manuscripts
- 16.6% of all Manuscripts



# EMC Decisions Statistics

## EMC ALL-TIME ACCEPTED MANUSCRIPTS FOR TIA AND IAS MAG CORRESPONDING AUTHOR LOCATION



**USA - 19%**  
**UK - 12%**  
**Italy - 12%**  
**Japan - 8%**  
**China - 7%**

# Process for Prospective Authors

- EMC Members who wish to submit papers presented at an IAS sponsored conference for transactions
- Email the Current Chair of EMC ([eagamloh@ieee.org](mailto:eagamloh@ieee.org)), details of their paper, including the following information:
- Corresponding author's first name and Last name;
- Corresponding author's email address (used for manuscript central account) and Affiliation
- Title of manuscript
- Conference name, and date of the conference where the paper was presented
- For more information visit EMC website :  
<http://sites.ieee.org/ias-emc/publications/>



# ECCE 2018 Vice-Chairs' Report

*Prof. Akira Chiba*





# What is New this Year

- The decision letters were sent in early April!
- The number of Vice Chairs per track was not set to two but depends on the number of digests
- Number of digests per Topic Chair (TC) limited to 10
- The same person cannot serve as TC for multiple subtracks, therefore a much larger number of TCs this year: about **168** versus **132** for ECCE17



# Track G Chairs

G01	General	10	Rajeev Vyas		
G02	Induction Machines	12	Renato Lyra	Luigi Alberti	
G03	IPMSM and Synchronous Reluctance Machines	30	Rajesh P. Deodhar	Abraham Gebregergis	Takashi Kato
G04	Other Synchronous machines (PMSM and Wound Field)	22	Nicola Bianchi	Cong Ma	
G05	Switched Reluctance and Flux Switching Machines	20	Rukmi Dutta	Rajib Mikail	
G06	Axial Flux Machines	5	Guilio De Donato		
G07	Special and Non-conventional Machines, Actuators, Linear, Integrated and Micro Machines, Energy Transfer, Transformers	16	Elena Lomonova	Yingjie Li	
G08	Noise, Vibration, Reliability, Machine Diagnostics and Protection	19	Tausif Husain	Konstantinos Gyftakis	
G09	Materials, Losses, Efficiency, Thermal and Manufacturing, Converter issues	28	Zbigniew Gmyrek	Alfred Munoz	Jose Alfonso Antonio Daviu
G10	Modeling and Analysis Methods (including multiphysics)	20	Katsumi Yamazaki	Vandana Rallabandi	Mohammad Rasouli
G11	Low Speed Direct Drive Machines, Magnetic Gearing	12	Jonathan Bird	Siavash Pakdelian	
G12	High Speed Machines, Bearingless Machines, high frequency effects	17	Xu Wei	Junichi Asama	
G13	Machines for Transportation (Automotive and Aerospace)	15	Ronghai Qu	Sara Roggia	
G14	Machines in Renewable Energy Applications	9	Alberto Bellini		
	Total	235		14	11
					3



# Thank you all Topic Chairs!!



- Topic Chairs were selected from volunteers who gave name cards in last EMC meeting in ECCE.
- Each reviewer can modify his area in the web system. Based on their area, Topic Chairs selected reviewers. Five reviewers for one digest.
- Generally, at least 3 review evaluations were requested, however, **5 evaluations were requested this year for split cases**, for example, weak accept, accept, weak reject.
- 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.
- One good practice: **If one is not well informed on topic of digest, please provide “Neutral” rather than “Reject”.**



# Electric Machine Statistics

- **252** digests submitted.  
(186(2017),245(2016), 203(2015), 201(2014)).
- **189** digests are accepted.  
(140(2017),151(2016), 141(2015), 137(2014))
- Acceptance ratio: **75%**  
(75%(2017),62%(2016), 69%(2015))

In even years, a number of digests is high because IEMDC is in odd years.



# Electrical Machine Sessions

- **23** Oral Sessions( 20 in 2017)
- (94 Papers)
  - 5 sessions on Monday
  - 3 sessions Tuesday
  - 8 sessions Wednesday
  - 7 sessions Thursday
- 3 Poster Sessions (95 Papers)
  - 1 Session: Monday
  - 2 Sessions: Tuesday



# Old Business



# EMC Needs Awards Committee Volunteers !!

- Andrew W. Smith Outstanding Young Member Achievement Award (Deadline: March 15):
  - Outstanding Young Member Service Award (Deadline: March 15)
  - Distinguished Service Award (Deadline: March 15)
  - Outstanding Achievement Award (Deadline: March 15)
  - Kliman Award (Deadline: June 1)
- IAS members <35 years old
- IAS Distinguished Lecturers (Deadline: March 31)
  - IEEE Fellow (Deadline: March 1)





# 2018 EMC Prize Paper Awards

*(for Papers presented at ECCE 2017)*



# Selection Process

- **Eight (8)** top papers with highest ranking from digest review process selected for full review by panel
- 6-member committee of distinguished reviewers
  - Balanced Mix of industry (3) and academia (3)
  - Previous committee chairs, paper award winners
    - **Prof. Akira Chiba**
    - **Dr. Bruno Lequesne**
    - **Prof. Sang Bin Lee**
    - **Dr. Mircea Popescu**
    - **Dr. Khwaja Rahman**
    - **Prof. Wen Soong**



# First Prize

**Paper Title:**

*"Impact of Machine Magnetization State on Permanent Magnet Losses in Permanent Magnet Synchronous Machines"*

**Authors:**

Daniel Fernandez Alonso, David Reigosa, Juan Guerrero, Carlos Suarez, and Fernando Briz

University of Oviedo, Spain



# Second Prize

**Paper Title:**

*“Principle of Variable Leakage Flux IPMSM Using Arc-Shaped Magnet Considering Variable Motor Parameter Characteristics Depending on Load Current”*

**Authors:**

Takashi Kato, Toru Matsuura, Kensuke Sasaki,  
and Tsutomu Tanimoto

Nissan Motor Company, Japan



# Third Prize

**Paper Title:**

*“A New Perspective on the PM Vernier  
Machine Mechanism”*

**Authors:**

Kangfu Xie, Dawei Li, Ronghai Qu, Xiang Ren and  
Yuan Pan

Huazhong University of Science and Technology, China



# Standards Update



# On-going Projects

## 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
- On-going revision since June 2015

## Project #2: IEEE P-1812

***“IEEE Std. 1812: IEEE Guide for Testing Permanent Magnet Machines”***

- WG Chair: Prof. Dan Ionel
- Trial-use guide published: 2015
- On-going revision since August 2016

Co-SPONSORSHIP



# Upcoming Stds. Projects

- **IEEE P252** – IEEE Standard Test Procedure for Polyphase Induction Motors Having Liquid in the Magnetic Gap
- **IEEE P620** – IEEE Guide for the Presentation of Thermal Limit Curves for Squirrel Cage Induction Machines
- PARs submitted August 31, 2018
- Interested Members contact:
  - Dr. Yao Duan [yao.duan@ieee.org](mailto:yao.duan@ieee.org)
  - Emmanuel Agamloh [eagamloh@ieee.org](mailto:eagamloh@ieee.org)

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# ECCE 2018: Session Reports

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



## Monday Oral Sessions

**S10**

**S11**

**S24**

**S25**

## Tuesday Oral Sessions

**S58**

**S59**

**S60**

**We thank all EMC Session  
Chairs of ECCE 2018!**



# New Business – 2019 EMC Officers



## 2019 Committee Officers

- **Chair:** Dr. Emmanuel Agamloh ([eagamloh@ieee.org](mailto:eagamloh@ieee.org))
- **Vice Chair:** Prof. Akira Chiba ([chiba@ee.e.titech.ac.jp](mailto:chiba@ee.e.titech.ac.jp))
- **Secretary:** Dr. Greg Heins ([greg.heins@regalbeloit.com](mailto:greg.heins@regalbeloit.com))
- **Past Chair:** Prof. Andy Knight ([andyknight@ieee.org](mailto:andyknight@ieee.org))



# New Business – IAS co-sponsored conferences TIA Invitation Process

*Dr. Tom Nondahl, IAS Transactions Editor*

[link](#)



# New Business – ECCE 2018 Update

*Dr. Avoki Omekanda, ECCE 2018 General Chair*



# 2019 Meetings – ECCE 2019



# ECCE 2019

Sep 29, 2019 - Oct 3, 2019  
Baltimore, MD

[link](#)

- **EMC Vice Chairs: Prof. Akira Chiba and Dr. Greg Heins**

**Topic Chair Volunteers - hand in your business cards !!**





# IEMDC 2019

## San Diego, CA

[link](#)



# APEC

[link](#)



# SDEMPED

[link](#)



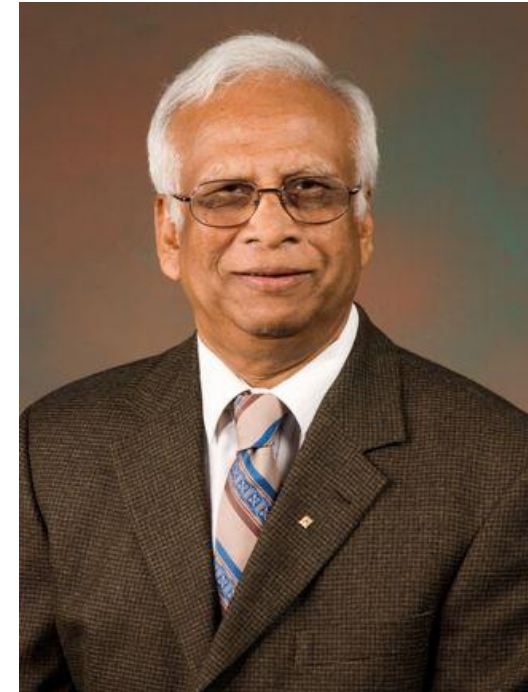
# Necrology



**Peter Lawrenson**  
**October 27, 2017**



**Ronald Gordon Harley**  
**October 30, 2017**



**Md. Azizur Rahman**  
**June 16, 2018**



# Motion to Adjourn

