

# IEEE Transactions on Signal and Power Integrity

European Virtual IBIS Summit at Virtual SPI2021  
May 12, 2021

Alistair Duffy, De Montfort University, UK  
President IEEE EMC Society

(with thanks to Jim Drewniak, Chair, T-SPI Steering Committee and  
“prime mover” for the Transactions)



# IEEE EMC Society Fields-of-Interest

*The Field of Interest of the Society involves engineering related to the **electromagnetic environmental effects** of systems to be **compatible with themselves and their intended operational environment**. This includes: standards, measurement techniques and test procedures, instrumentation, equipment and systems characteristics, interference control techniques and components, education, computational analysis, and spectrum management, along with scientific, technical, industrial, professional or other activities that contribute to this field.*

# Need

- SI/PI is an independent community with many practicing engineers and researchers and not a subset of Electromagnetic Compatibility (and is larger than EMC); there is a need for an archival central home for publications
- DesignCon (non-IEEE conference held annually) attracts over 5000 participants, 100 paper sessions, tutorials, workshops\* – many of the attendees are not IEEE members – good potential to attract to IEEE
- A recent 1½ hour EMC-S SI/PI webinar with two experts had 597 registrants and 426 attendees
- Survey was conducted of 3,989 IEEE members from the EMC-S, Electronics Packaging Society, Microwave Theory and Techniques Society. 654 respondents.
  - 47% likely to read this publication, 33% not likely.
  - 58% submitted at least one peer-reviewed article in the last five years. Among these respondents, 38% said they were likely to submit to this publication, while 28% said they were not, and 34% were neutral.
  - 77% indicated the subject matter is growing, and 70% said the overall subject will still be important in 10 years.

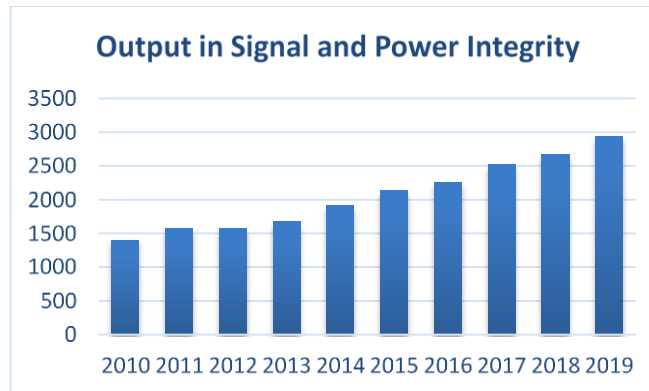
# IEEE Transactions on Signal and Power Integrity

- To launch in April 2022
- Frequency – electronic only, continuous
- Anticipated content for the first 3 years:
  - 2022: 20 papers
  - 2023: 25 papers
  - 2024: 30 papers

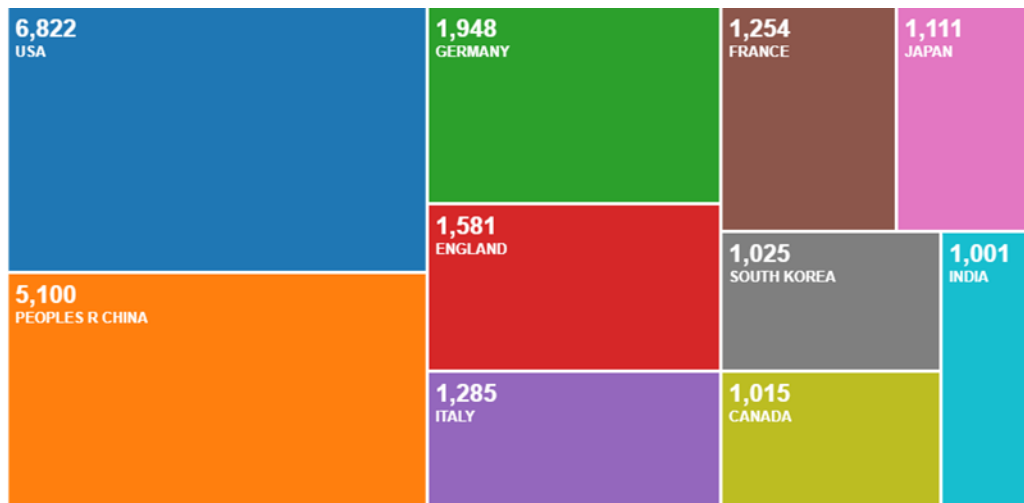
# Sponsorship

- Launch: April 2022
- Financial co-sponsors:
  - EMC Society (70%)
  - Microwave Theory and Techniques Society (15%)
  - Council on Electronic Design Automation (15%)
- Technical co-sponsorship:
  - Electronics Packaging Society

# Society/Council Response to Marketing Analysis



Research papers and reviews on signal and power integrity published in academic journals. Source: Web of Science



Approximately:  
1/3 Americas  
1/3 Europe  
1/3 Asia



# Editor-in-Chief

- Professor Jun Fan – Zhejiang University (China)
  - Missouri University of Science & Technology (2007-2020), Tang Professor of ECE
  - IEEE Fellow
  - 138 journal, 307 conference papers, h-index 29
  - EMC-S Board of Directors (2017-2019)
  - T-EMC Associate Editor (2012-present)
  - Past Chair/Vice Chair/Secretary EMC-S TAC
  - Technical Paper Chair (2011-2012, 2014-2015), Technical Program Chair (2015, 2018) IEEE EMC & SI/PI Symposium



# Scope

The IEEE Transactions on Signal and Power Integrity publishes research and application papers addressing all aspects of signal integrity and power integrity of an electronic system and its components including integrated circuits, IC packages, printed circuit boards, cables, connectors, as well as other relevant electronic and microelectronic components, and signal integrity/power integrity co-design. Advances in theory, algorithms, design approaches and modeling for ensuring the fidelity and performance of digital, analog, and hybrid electronic systems and sub-systems are considered.



# Format

- Hybrid:
  - ‘regular’ papers
  - Open Access
  
- Electronic only. No printed version.
  
- A decision will be made during the first three years whether to flip to fully open access or continue in a hybrid mode.

# Alternative Publishing Mechanisms Explored

- Special issues and special sections in T-EMC explored, but SI/PI is a community different from EMC, and larger
- Approximately 20% of 621 papers submitted to, and 301 accepted in T-EMC were signal integrity or power integrity related \*

\* 2018 data

# Overlap with Existing Periodicals

## IEEE

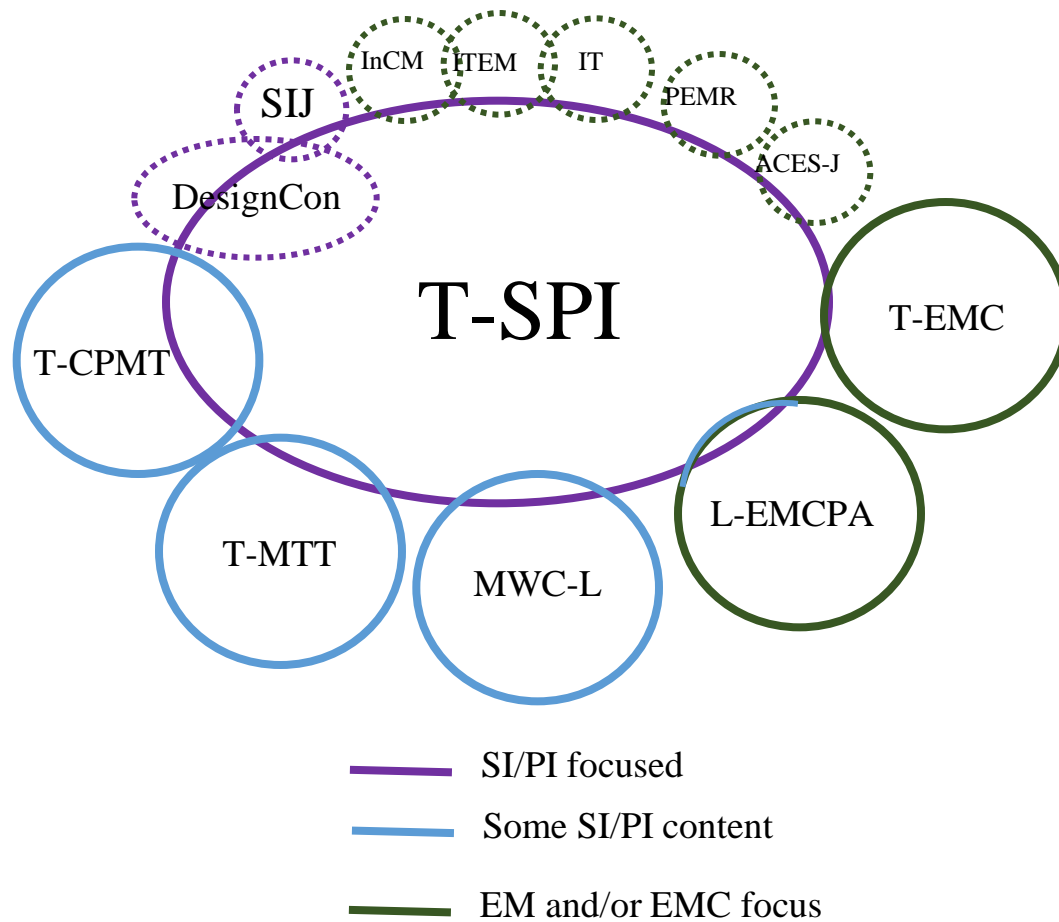
- T-Components, Packaging, & Manufacturing Technologies
- T-Microwave Theory and Techniques
- Microwave & Components Letters
- Journal on EMC Practice and Applications

## non-IEEE

- DesignCon (SI/PI) (conference proceedings only)
- Signal Integrity Journal (SI/PI)
- InCompliance Magazine (EMC)
- ITEM (EMC) (magazine)
- Interference Technology (magazine)
- Progress in Electromagnetic Research (EM) (journal)
- Applied Computational Electromagnetics Society Journal (CEM)



# Visual Landscape



# Paper Source(s)

- Engage EMC-S TC-10 Signal Integrity to form a working group that will identify focus areas and solicit contributions
- IBIS
- **Overview papers (2-3/year)**
- Conference contributors
  - DesignCon (non-IEEE)
  - IEEE EMC+SI/PI
  - EDAPS
  - EPEPs
  - European SPI workshop
  - APEMC
- EMC Society Magazine advertising
- Social media engagement, e.g., WeChat SI/PI group



# Discussion

- Any questions
- How does the IBIS community feel they can contribute to this initiative?