

Research Showcase

“Recent Advances on Reliability and Gate Driving of WBG Power Electronics”

Monday 11th and Tuesday 12th January 2021

Supported by the Centre for Power Electronics (CPE)



Highlights:

Keynote Presentations on WBG

Devices and Modules:

Gate Interface Reliability

Packaging and Interconnects

Sensing and Monitoring

Switching Transients for MOSFETs

High Current SiC Applications

Testing of SiC MOSFETs

Addressing the Key Challenges of WBG Device Adoption

IMAPS-UK will hold an Online Research Showcase over two mornings on Monday 11 and Tuesday 12 January 2021 on the topic of Reliability and Gate Driving of Wide Bandgap (WBG) Power Electronics, where you can hear about the latest advances in gate interface reliability, packaging and interconnection, sensing, monitoring and switching of SiC and GaN devices. The need for increased power density (in W/kg and W/m³) in power electronic converters and systems is placing critical demands on the reliability of devices, the drivers and the interconnections, which are being addressed in the CPE Project on “Reliability and Health Monitoring”.

This Online Research Showcase will feature in-depth technical presentations from the Universities of Warwick, Nottingham, Bristol, Newcastle, Edinburgh and Aalborg, with the opportunity to interact with leading experts in the field.

5 Key Reasons to attend:

Gate Driver Reliability – Effect on threshold voltage shift on SiC/GaN

Packaging and Interconnect – Wear-out characteristics in power cycling

Sensing and Monitoring – Applied to high speed switching of GaN devices

Switching of SiC MOSFETs – Reducing impact of oscillations on losses

SiC Testing and Applications – High current and testing conditions

Book your free place now at the Online Research Showcase on “Recent Advances on Reliability and Gate Driving of WBG Power Electronics”.

[Register Here for Free](#)

IMAPS-UK Research Showcase

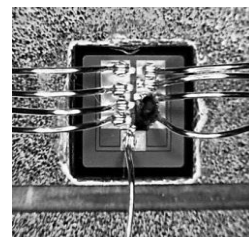
Where Industry and Academia Meet Online



Provisional Agenda (subject to change):

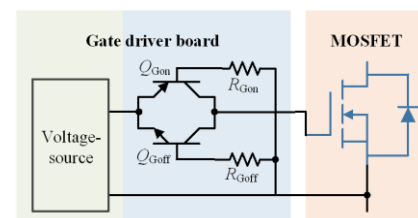
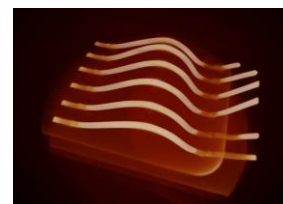
Monday 11th January 2021

- 10:00 Welcome and Introduction to IMAPS-UK and CPE
- 10:05 Overview of Reliability and Health Management CPE Tranche 2 Project
- 10:15 Gate Interface Reliability in SiC/GaN Power Devices**
Dr Jose Ortiz Gonzalez and Prof Layi Alatise, University of Warwick
- 11:00 Latest Advances in Packaging/Interconnects
Dr Pearl Agyakwa and Prof Mark Johnson, University of Nottingham
- 11:45 High Speed Sensing and Monitoring around GaN Devices
Dr Mohammad Hedayati and Prof Bernard Stark, University of Bristol
- 12:30 End of Day 1



Tuesday 12th January 2021

- 10:00 Optimisation of switching transients for SiC MOSFETs
Mr Xiang Wang and Prof. Volker Pickert, Newcastle University
- 10:45 Exploiting SiC in High Current Applications
Dr P Judge and Prof. S Finney, University of Edinburgh
- 11:30 Testing Silicon Carbide Power MOSFETs under Normal and Abnormal Operations
Dr A S Bahman and Prof. F Iannuzzo, Aalborg University
- 12:15 Closing Remarks and End of Event



Each Talk will consist of a 30 minute presentation followed by 10 minutes for Questions and Answers and a 5 minute break.

About the Centre for Power Electronics (CPE)

EPSRC funding for the Centre for Power Electronics Hub came to an end at the end of July 2020 after seven years of successful operation. It is from this foundation of success that the Centre for Power Electronics will continue to act as a focal point for the PEMD community with activities highlighted through the refreshed website:

<http://www.powerelectronics.ac.uk>

About IMAPS-UK:

The International Microelectronics, Assembly and Packaging Society (IMAPS) is the largest society dedicated to the advancement and growth of microelectronics and advanced electronics packaging. IMAPS-UK is a registered Charity and plays a leading role in the UK's advanced electronics industry.

The Society's objectives are achieved through regional seminars, workshops, major international conferences and exhibitions, the publication of newsletters and technical papers as well as other activities relevant to promoting knowledge within the industry.

IMAPS-UK Events offer delegates the opportunity to learn about the issues and complexities of microelectronics assembly technologies. They provide professional development through in-depth, real-life insights into materials, processes and equipment applied to current and future electronics.