

Power Electronics - Semiconductor Device Fabrication to Application

Newcastle University – Wednesday 10 July 2024

Highlights:

- *Power Device Fundamentals*
- *Semiconductor Manufacturing Explained*
- *Assembly Materials, Processes and Equipment*
- *Device and Packaging Test and Reliability*
- *Electric Drive Applications*
- *Opportunity for Q&A with leading semiconductor and power electronics experts*

Registration:

All Attendees	£25
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Prices - £ exclude VAT, including lunch and refreshments

[Register Here](#)

The Centre for Power Electronics and IMAPS-UK are organising a full-day **Training Workshop on Power Electronics from Semiconductor Device Fabrication to Application** to provide an introductory understanding of the design, assembly and test of power electronics devices and components and modules that form the basis of the Electric Revolution.

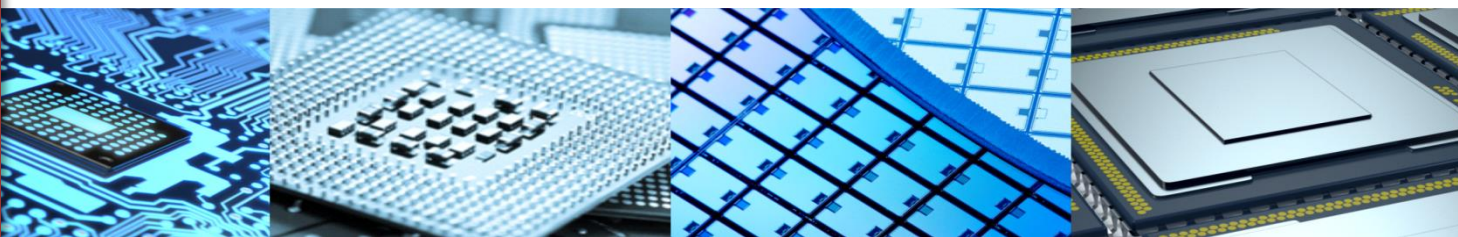
One of the most significant challenges will be the achievement of reliable and fully functional power electronics products that can operate at higher currents and voltages, faster frequencies and increased temperatures, which will place increasingly severe demands on the devices, materials and assembly processes.

This workshop will focus on the following aspects of tracking Power Electronics from Device Fabrication to Application, including:

- **Semiconductor Manufacturing**
- **Semiconductor Device Technology**
- **Semiconductor Device Packaging**
- **Reliability of Power Devices**
- **Reliability of Packaging**
- **Applications in Electric Drives**

The workshop will address the training needs of students and researchers within Colleges and Universities and personnel within industrial companies to assist in the upskilling and reskilling of people for the design, manufacture and testing of power modules. Attendees can receive a Certificate of Attendance that can be used as proof of Continuous Professional Development.

This workshop follows on from the [Centre for Power Electronics Annual Conference](#) held on 8-9 July 2024 at Newcastle Civic Centre:



Training Workshop Agenda:

Wednesday 10 July 2024

09:30 – Registration

10:00 – Welcome and Introductions

10:15 – Semiconductor Manufacturing – Mike Jennings, Swansea University

11:00 – Semiconductor Device Technology - Owen Guy, Swansea University

11:45 – Semiconductor Packaging – Steve Riches, IMAPS-UK

12:30 – Lunch

13:15 – Reliability of Power Devices – Layi Alatise, University of Warwick

14:00 – Reliability of Packaging – Jose Ortiz Gonzalez, University of Warwick

14:45 – Applications in Electric Drives – Xibo Yuan, University of Bristol

15:30 – Q&A and Discussion

16:00 – Close and Depart

[Register Here](#)

The Venue

**Room L201
Merz Court
Newcastle University
Newcastle upon Tyne
NE1 7RU**

Course Module

This course is suitable for attendees wishing to gain an overall view of power electronics design, manufacturing, testing and applications.

Who should attend:

- Undergraduates and Post-graduates interested in Power Electronics Research and Development
- Engineers and Technicians involved in Power Electronics Design, Manufacture, Test and Applications
- QC/Reliability Personnel and Managers wanting to gain an appreciation of the power electronics supply chain

Access to Course Presentations:

Attendance at the Course includes downloadable access to the presentation content.

Your Workshop Tutors:

Professor Mike Jennings, Swansea University: will cover the fundamental processes involved in fabricating power semiconductor devices in a foundry

Professor Owen Guy, Swansea University: will review the power device options available

Steve Riches, IMAPS-UK: will present details of device and component attach and interconnection processes

Professor Layi Alatise, University of Warwick: will review several aspects of semiconductor device reliability

Professor Jose Ortiz-Gonzalez, University of Warwick: will cover the testing and reliability of packaged devices and modules

Professor Xibo Yuan, University of Bristol: will present real-life applications for power electronics in electric drives

The Centre for Power Electronics (<https://www.powerelectronics.ac.uk/>)

The EPSRC Centre for Power Electronics provides a forum for the UK Power Electronics, Machines and Drives (PEMD) community to share research findings, facilitate knowledge transfer, industrial collaboration and train the next generation of engineers.

The Centre's work has included the following elements:

Underpinning power electronics research, project funding, support networks for postgraduates and researchers, building the power electronics community in the UK, strengthening international links and collaborations, knowledge exchange, policy influence and public engagement activities

For more information, please email: <mailto:correspondence@powerelectronics.ac.uk>