



The Institution of Engineering and Technology  
Seminar on:

## **Power Electronics 2010:**

**improving the efficiency of the power grid**

**Wednesday, 9 June 2010 | NEC, Birmingham, UK**

**09:30** Registration and refreshments

**09:55** Welcome from the chair

Dr Martin Aten, **EON ENGINEERING**

**10:00** High-power Energy Storage

- Added values from combinations of active and reactive power
- High-voltage battery solution
- Optimization of the battery with respect to cycling and ageing
- Operational safety

Dr Tomas Larsson, Product Manager, **ABB FACTS**, Sweden

**10:40** Increasing power density and efficiency

- Optimising part-load efficiency
- Meeting changing efficiency standards
- ensuring reliable communications between equipment
- Reliability of power electronics under continuously varying power flow
- Stability and reliability of cascaded converters

Speaker TBC

**11:20** Refreshments and networking break

**11:50** Power Conversion challenges in the realisation of a fully DC architecture for wind power

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Nick Hayward, Chief Engineer, **CONVERTEAM**

**12:30** Power Electronic Solutions for Smart Grids

- New distributed generation sources
- New system loads
- Power electronics for reactive power control
- Power electronics for real power control
- Wide area monitoring and control Smart grids and smarter electronics

Norman MacLeod, Technology Director, **AREVA T&D POWER ELECTRONICS**

**13:10** Lunch

**14:10** Usage of power electronics to enhance the flexibility and stability of power systems

- Using HVDC and FACTS devices.
- Operating IGBTs at high voltage in series connection
- Interconnection of power networks and grid connection of various types of renewable generation

Prof Sarath Tenakoon, Power Electronic Systems, **STAFFORDSHIRE UNIVERSITY**

**14:50 Combined Electrical and Thermal Simulation for Power Electronics**

- Calculation losses in dynamic power electronic systems
- Dimensioning cooling systems for maximum efficiency

Dr John Schönberger, Applications Engineer, **PLEXIM GmbH**, Switzerland

**15:30 Refreshments and networking break**

**16:00 Modular High Power Converter Topologies**

- Innovative topologies
- AC/AC converter topologies for high power applications

Prof. Jon Clare, Head of Power Electronics, **UNIVERSITY OF NOTTINGHAM**

**16:50 Q&A**

**17:00 Close**