

EPE Newsletter May 2009 – special issue

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- 1. EPE 2009, Barcelona 8-10 September 2009, Registration opens! Early bird fees till 21 June.**
 - 2. One PhD Research Fellowship position and one Post Doc position within the research project Power electronic converters for offshore applications – Closing date 15th of June 2009**
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- **1. EPE 2009, Barcelona 8-10 September 2009, Registration opens! (Early bird registration fee till 21 June 2009)**

<http://www.epe2009.com>

- **2. One PhD Research Fellowship position and one Post Doc position within the research project Power electronic converters for offshore applications – Closing date 15th of June 2009**

For more information: <http://www.ntnu.no/vacancies>
Contact only Profs Tore Undeland or Marta Molinas for more information;
your application must be emailed to: application@ime.ntnu.no

At the Norwegian University of Science and Technology (NTNU) in Trondheim, Department of Electric Power Engineering, there is one vacant PhD research fellow position within “**Fault mechanisms and design measures to increase reliability and ruggedness of medium voltage, high power converters for offshore applications**” and one vacant Post doc. position within “**Topologies and control strategies for medium voltage, high power converters**”.

Large scale offshore wind farms far from shore will require innovative energy converters with high power capacity, rugged design and high efficiency. Power electronic converters will be key components in the transmission of power to the distant shore, especially in hybrid, multi terminal AC/DC networks. Power electronic converters will have to be adapted to fit the harsh conditions and strict requirements of offshore installations and to match the voltage level of the transmission grid. In multi terminal networks voltage source converters will have advantages over traditional grid commutated current source converters. Achieving high voltage level is a universal challenge for voltage source converters with e.g. IGBT type switching devices. For offshore wind applications both ruggedness and low losses are of vital importance, making design for high reliability and high efficiency two likewise important challenges.

Description of the PhD tasks:

The PhD study will be on design of medium voltage, high power voltage source converters, both AC/DC and DC/DC. The main focus will be on fault mechanisms of semiconductors and converters, how to handle faults and how to design for reliability, ruggedness and a long life time in a harsh environment. The PhD work will be co-supervised by professor Josef Lutz at Chemnitz University of Technology and carried out in close cooperation with his team. Prof. Lutz is one of the leading experts on fault mechanisms of power semiconductors and reliability of power electronic devices is the main field of his research. Appointment is normally for 4 years.

Description of the Post Doc tasks:

The main task of the post doc is to investigate suitable converter topologies and control strategies for medium voltage, high power converters. There will also be focus on choice of semiconductor devices, switching frequency and switching modus in order to achieve efficient power conversion. The post doc work should include analysis, as well as realization of a laboratory prototype converter with control for testing and measurements.

Applicants for this fellowship should have a doctoral degree from a recognized university and foreknowledge of converter topology candidates for high voltage applications. Appointment will be made for up to 2 years.

Project connection:

Both the PhD and the post doc will be a part of a new competence building project “Power Electronics for Reliable and Energy efficient Renewable Energy Systems” managed by SINTEF Energy Research, financed by the Norwegian research council, Wäertsilä and Statkraft. The PhD candidate will also be a part of a larger research team, including several PhD and post doc fellows, at NTNU/SINTEF working within the field offshore wind generation.

Supervisor and contact person for the PhD position:

Professor Tore M. Undeland, email: Tore.Undeland@elkraft.ntnu.no

Supervisor and contact person for the Post doc position:

Professor Marta Molinas, email: marta.molinas@elkraft.ntnu.no

Please see <http://www.ntnu.no/elkraft/english>

And for the staff in the Energy Conversion Group:

<http://www.elkraft.ntnu.no/eno/staff.html>

Applications are to be sent to the
Norwegian University of Science and Technology,
Faculty of Information Technology, Mathematics and Electrical Engineering,
NO- 7491 Trondheim,

Norway,

or

by e-mail to: application@ime.ntnu.no

Applications should be marked IME-030-2009 (for the PhD position) or IME-031-2009 (for the post doc position).

Closing date 15th of June 2009.