

# *EPE Newsletter May 2007*

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### **Our Mission**

"To lead the high-performance segment of the EDA market by leveraging electromagnetics across component, circuit and system design."

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## 1. EPE 2007 registration open, early bird until 15 June, New Deadline for full papers: 31 May 2007

### Welcome to EPE'2007 in Denmark - Aalborg



It is an honor for me to invite the whole power electronics community to join the European Power Electronics and Adjustable Speed Drives Conference (EPE'2007) held in Aalborg, Denmark, from September 2 to September 5, 2007 in order to exchange ideas/views on research progresses and technological developments in all related matters for power electronics. We have received more than 950 synopsis and about 650 papers are selected for publication in the field of power electronics and its application. We expect more than 900 participants from all over the world enjoying Aalborg and the spirit on EPE'2007 as one of the leading power electronics conferences.

Denmark is one of the frontiers in renewable energy and distributed generation and today about 20 % of all electrical energy is covered by wind and further 30 % is covered by small combined heat and power plants which is a record in this scale. Further due to energy saving programmes the use of electricity has almost been constant even though production and population have increased. Europe has set up new energy targets and Denmark has the goal still to be one of the leading countries in the world. These issues will of course be addressed at the EPE'2007 conference which is sponsored by the EPE Association and will be held in the Aalborg Congress & Culture Centre – a perfect place for large conferences which is located in the center of Aalborg. The conference is organized with 5-6 tutorials on Sunday - where we hope to see many participants. During the three days of main conference we will have about 160 papers for oral sessions – done in the morning through six parallel tracks. In the afternoon dialogue sessions will take place. One of the highlights will be Monday where many high level technical papers will be presented in wind energy including many companies. Also other fields like drives, automotive, custom power systems, new devices will be very interesting. In the late afternoon different workshops will be held in power electronics in power systems, education and also we will try to organize a match-making workshop in order to make joint projects for international programmes. Through the conference an exhibition will be held and we still have room for a few more (see at our web-site for information).

On Monday and Tuesday social activities will be held as well as spouse tours are arranged. Please follow it carefully on the web-site ([www.epe2007.com](http://www.epe2007.com)). Thursday is allocated for industrial tours where visits to high-tech power electronic companies like Vestas Wind Systems ([www.vestas.com](http://www.vestas.com)) and Grundfos ([www.grundfos.com](http://www.grundfos.com)) are organized. Also a special wind turbine site visit will be arranged and a trip to Aalborg University Campus to see our facilities can be joined.

We hope you will spend extra time with your family in Aalborg. The city is beautiful and lively, steeped in history and rich in great experiences, located by the banks of the rolling Limfjord. It was the Vikings who founded a settlement at this point where the Limfjord is narrowest, and through the years, the city developed into one of the busiest trading centre's in the country. We are close to the beach and easy trips can also be arranged to different cultural sites around Denmark. Aalborg has excellent flight connections through Copenhagen with about twenty daily arrivals which make it easy to come to Aalborg. The airport is located 6 km from hotels and conference site.

We welcome you all to Denmark.

Frede Blaabjerg  
EPE 2007 Conference Chair  
<http://www.epe2007.com>

## 2. Position Paper on 'Energy Efficiency – the Role of Power Electronics

On Wednesday 7 February EPE Association and ECPE organized a joint EPE/ECPE European Workshop "Energy Efficiency in FP7? The Role of Power Electronics". At the end of the workshop, the expert team has formulated a **Position Paper on 'Energy Efficiency – the Role of Power Electronics'**. This Position Paper is available now; a pdf copy can be downloaded from the ECPE web site:

[http://www.ecpe.org/download/power\\_electronic/Position\\_Paper\\_Energy\\_Efficiency.pdf](http://www.ecpe.org/download/power_electronic/Position_Paper_Energy_Efficiency.pdf)

or the EPE Association website (under EU-FP6&7 activities)

### 3. Position available at Katholieke Universiteit Leuven (Belgium), Faculty of Engineering



At the Electrical Engineering Department (ESAT) a full-time professor position is open in the field of:

#### **Rational Use of Electrical Energy**

The candidate is expected to take up teaching duties on rational use of electrical energy, as well as to attract national and international research projects focusing on rational use of electrical energy in all its forms (light, heat, power supply, drivers,...).

The candidate must hold a Ph.D. degree and needs to show an established track record in the field of electrical engineering and (electrical) energy.

Initially non-Dutch speaking candidates can teach in English. They should, however, be able to teach in Dutch within three years.

More information on the research group can be found on [www.esat.kuleuven.be/electa](http://www.esat.kuleuven.be/electa).

and on: <http://www.kuleuven.be/personeel/jobsite/vacatures/engineering.htm>

### 4. Position available at Agder University College in the city of Grimstad in the south of Norway

A position as professor/senior lecturer in Electrical Power Engineering is available at Agder University College in the city of Grimstad in the south of Norway ([www.hia.no](http://www.hia.no)).

More information at:

[http://fronter.com/hia/personal/index.phtml?LANG=no&show\\_news\\_all=&expand=63562&user=s\\_ls#selected\\_news63562](http://fronter.com/hia/personal/index.phtml?LANG=no&show_news_all=&expand=63562&user=s_ls#selected_news63562)

This position is a good opportunity for anyone who would like to combine working in an academic environment with the good life in the southern part of Norway. This year, our College will most likely become Norway's 7th university, and we are soon (2009) to move into a new campus in Grimstad, which will be the first university campus in Norway owned by a private company.

### 5. Research fellowship at Department of Electrical Power Engineering within “Enabling technology for sub sea production of oil and gas using electricity for power supply and control” – Jnr. IME-017-2007

At the Department of Electric Power Engineering there are a vacant position and grant for a PhD study within “Enabling technology for sub sea production of oil and gas using electricity for power supply and control”.

To facilitate oil and gas production and increased recovery rates it is becoming increasingly necessary to place more of the oil and gas processing equipment on the seabed or in the well itself. Such solutions, possibly combined with heating of pipelines to avoid the formation of hydrates in the flowlines and risers, necessitate an extensive supply of electric power. The power required may be from 5 to 50 MW, depending on the field. Today the electric power is usually produced in gas powered plants on board the floating production vessel, but can also be supplied from the mainland. At present, each seabed unit is supplied with power through separate cables extended from the vessel on the surface. Due to longer distances the technology of tomorrow will be based on high voltage modules, equipped with high voltage cables, connectors, frequency converters and distribution cables extending to the separate units.

The proposed PhD project will focus on development of scientific knowledge based design criteria and test methods for power electronics for deepwater /down hole installations subjected to high hydrostatic pressure and high temperature.

The PhD- student will be associated to the following task:

**Sub sea and down hole high reliable frequency converters** for operating motors in compressors, pumps and valve actuators. Sea depths can be more than 1000 m, and for sub sea applications the power ratings will be above 10 MW. Topics for research include: Theory and laboratory verification of failure mechanism due to thermal cycling, high temperature and high pressure. Methods for designing and testing power electronics modules and converters are to be investigated. The candidate should have a Masters degree in Electric Power Engineering, Power Electronics. Experience with power semiconductor modules and converter modeling, simulation and design is an advantage.

The research project will be conducted in the electric power framework within NTNU and SINTEF Energy Research in cooperation with other research activities at NTNU and relevant industries.

Contact persons:

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- Prof. Arne Nysveen. The department of electrical Power Engineering, NTNU. Phone +47 73 59 4263, E-mail : [Arne.Nysveen@elkraft.ntnu.no](mailto:Arne.Nysveen@elkraft.ntnu.no)

Applications are to be sent to the Norwegian University of Science and Technology, Faculty of Information Technology, Mathematics and Electrical Engineering, Sem Sælands vei 5, NO-7491 Trondheim, Norway. Applications should be marked **Jnr. IME-017-2007**.

<http://innsida.ntnu.no/getfile.php/vedlegg/461115410e6da1.37672891/IME-017-2007-e-.doc>

## 6. Call for papers for EPE journal, included in ISI and Compendex

EPE Journal is included in the Science Citation Index as well as in the Compendex. Send your best technical papers for publication to [bsnevers@vub.ac.be](mailto:bsnevers@vub.ac.be) (pdf file, without any mention of authors, full coordinates in the mail message)

<http://www.epe-association.org>

## 7. Technically sponsored conferences

30 May – 2 June 2007

### **EET-2007 European Ele-Drive Conference, Brussels, Belgium**

"On the Way to sustainable Development and Market Opening"

- Program & Registration now available online at <http://www.ele-drive.com/>

- 129 papers submitted from 29 countries

- Unique opportunity to discuss Battery, Hybrid and Fuel cell vehicle technologies

- Mobility and urban policy also highlighted

- Brussels venue, eve of the 7th Framework program, starting discussions on the Green Paper on "urban mobility" offering a set of opportunities

- A global platform to foster exchange of views between researchers, industry, authorities and NGOs

- Key note speeches and round-tables:

- plug-in hybrids

- market requirements

- hydrogen and fuel cells

- health and environment

- A ride and drive in the "cinquantaire park", combining a very central location and a relaxing place to test the vehicles

- A symbolic place since at the auto-world museum

Be part of the discussions leading to find out solutions to reduce greenhouse gases and energy dependence of Europe!

### Contact and information:

Frédéric Vergels, AVERE Secretary-General

European Association for Battery, Hybrid and Fuel Cell Electric Vehicles aisbl/ivzw c/o VUB-FirW-ETEC Bd. de la Plaine, 2 - BE 1050 Brussels Tel +32 2 629 23 63 - Fax +32 2 629 36 20 <http://www.ave.org>

20 – 21 June 2007

### **ECPE Tutorial/Training “Leadfree Soldering for Power Electronics Manufacturing” in Itzehoe, Germany**

in cooperation with Fraunhofer Institute ISIT, Itzehoe, Germany

For downloading the programme please use the following link:

[http://www.ecpe.org/download/seminars/Flyer\\_Leadfree\\_06\\_07.pdf](http://www.ecpe.org/download/seminars/Flyer_Leadfree_06_07.pdf)

27 – 28 June 2007

### **ECPE Seminar “Energy Storage Technologies” in Aachen, Germany**

Technical Chairmen: Prof. R. W. De Doncker, Prof. D.U. Sauer, Institute for Power Electronics and Electrical Drives / RWTH Aachen University

Programme under: [http://www.ecpe.org/download/seminars/Flyer\\_Energy\\_Storage\\_06\\_07.pdf](http://www.ecpe.org/download/seminars/Flyer_Energy_Storage_06_07.pdf)

6 – 7 September 2007

“2<sup>nd</sup> ECPE SiC User Forum - Potential of SiC in Power Electronic Applications” in Copenhagen, Denmark

Technical Chairmen:

Prof. A. Lindemann, Otto-von-Guericke-University Magdeburg, Germany

Prof. H. Ohashi, National Institute of Advanced Industrial Science and Technology, Japan

programme under: [http://www.ecpe.org/download/seminars/Flyer\\_SiC\\_User\\_Forum\\_09\\_07.pdf](http://www.ecpe.org/download/seminars/Flyer_SiC_User_Forum_09_07.pdf)

16 – 19 September 2007

**The Sixth International Symposium on Linear Drives for Industrial Applications**

**LDIA2007 SECRETARIAT**

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26 – 27 September 2007

**International Conference AUTOMOTIVE POWER ELECTRONICS**

**Salons de l'Aveyron – PARIS**

**List of addressed topics**

**1- Automotive Standards:** technological trends

**2- Design and modelling tools for mechatronics:** power electronic design, thermal and EMC issues, simulation of electro-thermo-mechanical fatigue – *Special topic*

**3- Power electronic vehicle architecture:** powertrain alternative solutions, choice of network voltages, gateways between electrical and electronic networks

**4- Power Semiconductor devices and modules**

**5- Packaging and integration of power converters:** protection devices...

**6- Static power converters and systems**

**7- Passive components – *Special topic***

**8- Harnesses and connectors**

**9- Actuators and motors control and drives**

**10- Mechatronics integration**

**11- Power dissipation management / Cooling**

**12- Electro-magnetic issues:** impact of power electronics fro in-vehicle architecture, new standards to come, electronic and harness guidelines

**13- Preventive diagnosis:** failure prognosis, maintenance, thermal fatigue

**14- Reliability, safety and test:** limiting failure mechanisms, acceleration factors, high operating temperatures, test methods and tools, predictive reliability tools, dependability, robustness validation, requirement analysis– *Special topic*

**15- Manufacturing tools and industrial processes**

**16- End of life, Recycling and Eco-design**

Your contact

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October 22 – 26, 2007

**The 7th International Conference on Power Electronics - ICPE '07**

**EXCO (Daegu Exhibition & Convention Center), Daegu, Korea**

**Call for papers still open**

Important Dates

Author's Notification of Acceptance **June 15, 2007**

Deadline for Final Manuscripts **August 31, 2007**

**Organized by**

The Korean Institute of Power Electronics (KIPE)

**First Call for Papers** <http://www.icpe.or.kr>

**For Further Information, Please Contact**

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