

Organization and Venue

The Power Electronics community will gather in **Riga**, Latvia, from 17 to 21 September 2018, to exchange views on research progresses and technological developments in the various topics described hereunder. On Monday 17 September a number of tutorials will be organised and several technical visits are planned on Friday 21 September.

The 20th Conference on Power Electronics and Applications (and Exhibition), EPE'18 ECCE (Energy Conversion Congress and Expo) Europe is co-sponsored by the EPE Association and IEEE PELS. It will take place at the Kipsala International Exhibition Centre in Riga Technical University Campus.

Aims of the Conference

EPE ECCE Europe is the place for specialists in power electronics, systems and components, to present papers and attend sessions on state-of-the-art technology in this challenging and evolutionary sector. The conference aims to be a meeting forum for researchers, developers and specialists from academia and industry. Papers are encouraged on all topics described hereunder for interdisciplinary discussions of new ideas, research, development, applications and the latest advances in the field of power electronics and adjustable speed drives. A characteristic trend from previous EPE ECCE Europe Conferences has been an increasingly large industrial participation, as well as growing exhibition, which allows for enhanced exchanges between academia and industry.

Topics

Electrical energy generation and supply to users is on transition to distributed generation from traditional to renewable energy sources and development of Smart grids on "macro" "micro" and "nano" levels. Very fast research and development of smart DC grids is highly challenging and power electronics is the driving force of those new technologies. Power electronics in mechatronic and adaptronic systems, industrial robotics and wide range health care and biorobots with artificial intelligence are topics for further research.

Also, increasing the efficiency of power supplies reduces electrical energy consumption and may be counted as another way to reach that goal. Power electronics is also becoming crucial in electric power system, as it includes various types of energy storage technologies. In response to all these challenges, novel topologies, control structures and power components are being introduced to improve performance of power electronics systems. Especially, new wide bandgap materials (SiC & GaN) are a serious chance for a big step forward in a broad range of applications.

A wide spectrum of topics will be addressed during the largest European conference in power electronics – EPE'18 ECCE Europe. Researchers, application engineers and experts from academia and industry will meet to discuss and exchange ideas.

I POWER ELECTRONICS COMPONENTS AND CONVERTERS

Topic 1: DEVICES, COMPONENTS, PACKAGING AND SYSTEM INTEGRATION

- 1.a. Active components
- 1.b. New materials and active devices
- 1.c. Passive components
- 1.d. Power system integration, packaging & thermal management
- 1.e. Reliability

Topic 2: POWER CONVERTERS TOPOLOGIES AND DESIGN

- 2.a. Hard & soft switching techniques
- 2.b. Advanced power converter topologies
- 2.c. Power factor correction techniques

Topic 3: MEASUREMENT AND CONTROL

- 3.a. Standard and advanced control techniques for power converters
- 3.b. Application of control methods to electrical systems
- 3.c. Estimation and identification methods
- 3.d. Computational intelligence in control systems
- 3.e. Measurements techniques
- 3.f. Sensors

II POWER ELECTRONICS APPLICATIONS

Topic 4: ELECTRICAL MACHINES AND DRIVE SYSTEMS

- 4.a. Electrical Machines
- 4.b. Adjustable speed drives
- 4.c. High performance drives
- 4.d. Motion control, robotics, special drives

Topic 5: RENEWABLE ENERGY POWER SYSTEMS

- 5.a. Wind energy systems
- 5.b. Solar energy systems
- 5.c. Other renewable energy systems
- 5.d. Energy storage systems

Topic 6: GRIDS, SMART GRIDS, AC & DC

- 6.a. Power electronics in transmission and distribution systems
- 6.b. HVDC & FACTS
- 6.c. Micro-grids
- 6.d. Smart grids
- 6.e. Power quality issues (including HF phenomena)
- 6.f. Fault coordination and protection of DC grids

Topic 7: POWER SUPPLIES

- 7.a. Low voltage DC power supplies
- 7.b. High voltage DC power supplies
- 7.c. Distributed power supplies
- 7.d. Uninterruptible power supplies (UPS)
- 7.e. Electronic ballasts and solid state lighting
- 7.f. Contactless power supply

Topic 8: ELECTRIC VEHICLE PROPULSION SYSTEMS AND THEIR ENERGY STORAGE

- 8.a. Electric propulsion systems for electric vehicles
- 8.b. Power converters for electric vehicles
- 8.c. Batteries, active and passive Management Systems (BMS)
- 8.d. EV's battery chargers: contact and contactless
- 8.e. Standards and regulations

Topic 9: INDUSTRY SPECIFIC ENERGY CONVERSION AND CONDITIONING TECHNOLOGIES

- 9.a. Energy conversion and conditioning technologies in the industry (cement, steel, paper, textile, mining, etc...)
- 9.b. Power electronics in aerospace and space applications
- 9.c. Rail vehicles
- 9.d. Marine applications (offshore and ships)
- 9.e. Energy conversion and conditioning technologies in physics research and related applications
- 9.f. Pulse applications, including passive components and transducers for power pulses

Presentation of Papers

Contributions to EPE'18 ECCE Europe must be presented either as a lecture presentation or as a dialogue presentation. A manuscript must be submitted in English in both cases for inclusion in the Conference Proceedings (electronic version only). Papers for lecture sessions will be strictly limited and selected on the basis of wide audience appeal, ease of understanding and potential stimulation of broad ranging discussion. Dialogue presentations will take place in the afternoon. No lecture session will be organized during the dialogue sessions.

Content of Synopses

The synopses should consist of a 3 to 5 pages anonymous summary, including an abstract with no more than 50 words; topic number and indication of the preference for dialogue or lecture presentation (to be clearly mentioned), key diagrams and a references list.

The synopses will be submitted using the host of the conference on the Internet. A link to the site will be available from: www.epe2018.com, a link from www.epe-association.org will be available as well. Detailed information and guidelines can be downloaded from the site to help you preparing the needed material for submitting a synopsis. The site will be open for upload from 17 October 2018 onwards.

Authors of papers provisionally selected for presentation will receive a notification and can download the instructions for preparing the dialogue papers and/or the lecture papers from the Internet site. Final selection will be based on the full paper. The paper will only be included in the Conference Proceedings after receipt of one full registration fee per

paper in due terms. Student registration fee is only valid for student participants, not for authors. One single author may not present more than two (2) papers. In that case, the fee to present the two papers will be 150% of the registration fee.

A selection of outstanding conference papers will be published afterwards in the EPE Journal, which is an ISI registered journal. The papers presented at the conference will also be registered in IEEE Xplore.

All presented papers will be listed in the Web of Science (formerly Web of Knowledge), INSPEC database for Engineering. Selected papers published in the EPE Journal will be automatically included in the Web of Science – Core Collection and get a WOS-Accession number. The Organising Committee works toward ensuring that all conference papers are listed in the Core Collection as well. It is already the case since the 2014 edition.

Tutorials – Call for Proposals

Several tutorials will be held prior to the conference. Authors willing to propose a tutorial at EPE'18 ECCE Europe are invited to send a proposal to Brigitte Sneyers at the scientific secretariat (EPE Association, c/o VUB-IrW-ETEC, Pleinlaan 2, B-1050 Brussels, Belgium, e-mail: bsneyers@vub.ac.be) before 12 January, 2018. The proposal will consist of a three-page summary including tutorial title, name and affiliation of the lecturer(s), tutorial objectives and audience, topical outline and provisional schedule of the tutorial.

The tutorials will be organized on Monday 17 September 2018. The tutorials will take place at the Faculty of Power and Electrical Engineering of Riga Technical University, which is almost right next to Exhibition Centre.

Tutorial proposals are welcome in all topics related to the conference topics.

Deadlines

Intending authors should note the following deadlines:

Receipt of synopses: **14 November 2017**
Notification of provisional acceptance: **1 March 2018**
Receipt of full typescript for final review: **5 June 2018**

Working Language

The working language of the conference is English, which will be used for all printed material, presentations and discussions.

Programme and Registration

The provisional programme and registration form will be available from the Internet site early summer 2018.

Access to the full papers will be given with password to all registered participants, 1 or 2 weeks before the conference, to allow attendees to prepare their participation.

Additional information will be available on: www.epe2018.com

Venue

The conference will take place at the Kipsala International Exhibition Centre in Riga Technical University Campus which is the biggest specialized exhibition complex in the Baltic States and offers facilities and services of international quality meeting standards. Wi-Fi access will be free for attendees, everywhere in the congress centre.

Exhibition

There will be an exhibition integrated in the event.

If you would like to know more details please go to www.epe2018.com. You can also contact us via e-mail to mireille.vankeerberghen@epe-association.org or info@epe2018.com

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EPE/IEEE-PELS Coordination Committee

The overall management of the Congress is conducted by the Coordination Committee to ensure consistency in strategy, scope and content of the Conferences from year to year. The committee issues a Call for future locations of the Conferences, and forwards its recommendations to the EPE Executive Council as well as to the IEEE-PELS Administrative Committee for final approval.

Members

EPE representative members:

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IEEE-PELS representative members:

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