

Innovative methods and tools in education in the field of power electronics and electric drives for the needs of the high-tech industry

Special didactic session of

The 16th Conference

Control in Power Electronics and Electric Drives - "SENE 2023"

Łódź, November 22-24th, 2023

organized by: **INSTITUTE OF AUTOMATIC CONTROL, LODZ UNIVERSITY OF TECHNOLOGY**

Organizers: prof. Mariusz Stępień – Politechnika Śląska

The special session is devoted to didactic aspects in the area of power electronics and electric drives. Many universities in Poland and around the world are developing new methods, ways and tools of education. Among the teaching methods, the most frequently used and improved are tutoring and coaching, PBL education, initiatives of student clubs, in particular interdisciplinary ones, international education, including under the Erasmus+, NAWA, DAAD and other projects, and education in the form of intensive courses and schools that require new innovative curricula. New teaching tools include, in particular, a new laboratory base, including adapted to remote learning, education based on virtual and augmented reality, digitization of teaching tools and materials, including tools for informal education, and other projects supporting the workshop of an academic teacher.

We invite you to present new methods and teaching tools supporting the effective education of a modern engineer for the market of new technologies at all levels of education - from first-cycle studies, through master's studies, to doctoral studies. As part of the session, other didactic and educational aspects, not mentioned above, related to the subject of the conference may also be presented, in particular those that indicate the connection between research and didactics and affect the promotion and quality of education. Please send papers in accordance with the general rules of SENE, in both accepted categories (**Regular papers** and **Short papers – late-breaking results**).

The Organizer and the Program Committee will make every effort to publish post-conference articles in one of the scientific journals, in a special section devoted to didactics.

Prof. Mariusz Stępień has been associated with the Silesian University of Technology since 1994. In 2006 he was employed as an assistant professor, and in 2019 as a university professor. He conducts research in the field of high-temperature superconductivity, high-frequency transformation, modeling of the properties of inductive components and resistance welding processes. He participated in the implementation of several research projects, including 3 as a leader. An important area of his activity is the implementation of international didactic projects of the Erasmus+ strategic partnership, under which various didactic initiatives and innovative didactic tools are developed. He is a member of the SEP, the IEEE Senior Member and a member of the PEMC Council.

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organized for **30 years** by:

**INSTITUTE OF AUTOMATIC CONTROL, ŁÓDŹ
UNIVERSITY OF TECHNOLOGY**

under the auspices of the Committee on Electrical Engineering
Polish Academy of Sciences with the support of IEEE Polish
Section and PTETIS Łódź branch

The conference covers all topics related to power electronics and electric drives, in particular:

- control methods for drive automation and power electronics,
- elements of control theory, methods of artificial intelligence and computer science inspired by applications in drive systems and power electronics,
- analysis, synthesis, modelling, simulation, and special topics of DC/AC converter drives,
- applications in robotics,
- traction drives and motion control applications,
- electrical machines,
- network control of distributed power systems or multi-drive systems,
- electromagnetic compatibility,
- reactive power compensation and other energy issues,
- redundant power supply,
- innovative applications of power electronics,
- diagnostics and education in the field of power electronics, drives and control,
- components for power electronics systems.

The SENE'23 Program Committee consists of recognized scientists, professors, representing all Polish centers conducting research in the field of power electronics and automation of electric drives.

The Program Committee invites you to submit papers for the SENE'23 conference in two categories:

• Regular papers

A regular paper presents the results of original research work, following generally accepted standards in the discipline of Automatic Control, Electrical Engineering, and Electronics. Submitted articles will be reviewed by the Scientific Committee according to the requirements of the editors of the 'Przegląd Elektrotechniczny' journal (ISSN 0033-2097, 2449-9544).

Subject to an appropriate copyright declaration and positive reviews of the Program Committee, considering changes and additions made by the Authors after the conference, the paper will be accepted for publication in the PE and published in one of the first issues in the year 2024. The Program Committee maintains contact with the editorial offices of The Archives of Electrical Engineering and The Bulletin of the Polish Academy of Sciences: Technical Sciences, which will accept its recommendations regarding the publication of selected papers as a special section.

• Short papers – late-breaking results

A short paper describes preliminary research results, hypotheses, or research plans. It should include the title, author information, keywords, abstract, and bibliography. It aims to present an interesting topic, yet unpublished, for discussion at the conference. Following review, each short paper will be included in the conference proceedings and should be presented during the conference.

Competition for young scientists

The Program Committee will award the traditional prize sponsored by IEEE Poland Section for the best work presented by a young author at SENE'22. The Scientific Committee awards the prize based on, inter alia: opinions of reviewers, assessment of the session chairman, and acclaim by conference participants.

Each submitted paper will be published in the conference proceedings, issued electronically, with an ISBN.

Plenary speakers

Expected plenary speakers are:

**Petros Karamanakos, Tampere University,
Zbigniew Kaczmarczyk, Silesian University of Technology,
Tianyou Chai, Northeastern University, Shenyang.**

Special session and tutorials

Current information can be found on the conference website.

Registration

For conference registration and papers submission, please refer to the conference website sene.p.lodz.pl

The conference fee includes complete participation package, full board and accommodation starting from lunch on Wednesday till lunch on Friday.

Deadlines

- Papers submission by **31.07.2023**
- Preliminary information on paper acceptance **5.09.2023**
- Deadline for submission of revised articles **19.09.2023**
- Conference fee payment by **15.09.2023**

Place:

The conference is always organized in Łódź.

Organizing committee:

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