

Future trends of development of power electronics and electric drive automation. What will be discussed at SENE in 6-10 years?

Special session (discussion panel) 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**

Session organizers: The Program Committee

When we plan our future work, we all wonder how the development trends of the research area we are interested in will shape. What will be the future needs of applications, what hardware capabilities, what 'scientific fashions'? We rarely talk about it, and it would be worth sharing opinions on this subject on the occasion of SENE's 30th anniversary. The scientific committee asked distinguished scientists from a generation that will undoubtedly be active in 10 years for the production of leading voices in the discussion, illustrated in text and graphics.

We propose that the leading, but not the only, topics in the discussion should be:

- Artificial intelligence in diagnostics, design and control.
- New materials in power electronics and construction of electrical machines.
- The future of electromobility.
- New, intelligent power electronic devices.
- Social expectations towards energy conversion systems.
- Financing and education in the field of power electronics and drive automation.
- The role and competitiveness of spin-off companies.

Professor Krzysztof Szabat kindly agreed to coordinate the speeches.

We invite everyone who would like to share their opinions on the prospects and directions of development of power electronics and electric drives to send materials in the form of **Short papers – late-breaking results** and we ask you to spontaneously participate in the discussion. We plan to edit the submitted materials under joint authorship and publish them.

The 16th Conference

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Łódź, November 22-24th, 2023

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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