

ACEMP-OPTIM 2025
20th Edition of the OPTIM International Conference,
6th Edition of the ACEMP-OPTIM Joint International Conference,
Timisoara, Romania, May 14-17, 2025

IEEE Conference Record # 62776

ACEMP-OPTIM 2025 has been organized jointly by five faculties of electrical engineering which incorporate about 5000 students in Power Electrical and Electronics Engineering (with the first one as the host):

- Politehnica University of Timisoara
- Transilvania University of Brasov
- Technical University of Cluj-Napocaa
- Atılım University, Ankara
- Middle East Technical University, Ankara

ACEMP-OPTIM 2025 joint conference was technically sponsored by IEEE through IES, IAS, PELS, IEEE Romania and IEEE Turkey.

The technical spectrum of OPTIM-ACEMP 2025 was similar in breadth to IEEE-IES, -IAS, -PELS events, though at a reduced scale, as expected.

The official language was English, and the paper format was that of IEEE; only full-length papers were accepted from the start.

The committees of the conference were as follows:

Conference General Chairs:

Marcian CIRSTEA, Anglia Ruskin University, Cambridge, UK

H. Bülent ERTAN, Atılım University & Middle East Technical University, Ankara, TR

Conference Vice-Chairs:

Ion BOLDEA, Politehnica University of Timisoara, RO

Bülent ŞARLIOĞLU, University of Wisconsin-Madison, USA

Conference Program Chair:

Mihai CERNAT, Transilvania University of Brasov, RO

Conference Program Vice-Chairs

Ana-Adela Popa, Politehnica University of Timisoara, RO

Emine BOSTANCI, Middle East Technical University (METU), Ankara, Turkey

Conference IT Chair:

Razvan-Ioan DINITA, Anglia Ruskin University, Cambridge, UK

Local Organizing Committee:

Chair: Sorin MUŞUROI, UPT

Members

Nicolae-Lucian TUTELEA, UPT

Lia-Elena ACIU, UniTBv

Dan-Cornel HULEA, UPT

Dan LASCU, UPT

Nicolae MUNTEAN, UPT

Dorin-Marius PETREUS, UTC-N

Ioana POP, UPT
Ana-Adela POPA, TM
Mircea M. RADULESCU, UTC-N
Ioan SERBAN, UniTBv
Ciprian SORANDARU, UPT
Marcus SVOBODA, UPT
Danut VITAN, UPT

Track chairs:

T1: Mihai Cernat (RO), Dumitru Toader (RO), Attila Simo (RO)
T2: Ion Boldea (RO), H. Bülent Ertan (TR), Mircea Radulescu (RO), Volker Staudt (DE)
T3: Dan Lascu (RO), Dorin-Marius Petreus (RO), Eyup Akpinar (TR)
T4: Ioan Serban (RO), Ramazan Bayindir (TR)
T5: Silvia Cirstea (UK), Dan Lascu (RO)
SS: Mahdi Maktab-Dar-Oghaz (UK), Sanjib Pandey (UK)

We expected papers into 7 technical tracks and two special sessions:

T1: Power Systems and Electromagnetics. Electric Circuits and Networks, Electromagnetic Field, Electromagnetic Materials, Components and Applications, EMC/EMI, Power Systems, Power Quality, Electrical Apparatus, Transmission, High Voltage, Electric Arc, Plasma, Utility Applications, Safety and Reliability in Power Engineering.

T2: Electrical Machines, Industrial Drives and Control. AC/DC Motor Drives, Motion and Drive Control, Sensorless Control, Electric Propulsion, Automotive Applications, Electrical Machines Design and Modelling, Thermal, Noise and Vibrations Issues, Electric Generators and their Control, Testing and Diagnostics.

T3: Power Electronics and Power Conversion. Power Electronics Modelling, Simulation, Design, Control, DC/DC Conversion, AC/AC Converters, Rectifiers, Inverters, PWM Systems, Converters for Electric and Hybrid Electric Vehicles, Power Electronic Devices and Systems, Semiconductors, UPS, Active and Hybrid Filtering, Power Line Conditioning, DSP and Microcontrollers for Power Electronics and Control.

T4: Renewable Electric Energy Conversion. Processing and Storage. Wind Energy, Photovoltaics, Hydro/Micro-hydro Power, Battery Technologies, Fuel Cells & Hydrogen Storage, other Energy Storage Technologies, Distributed Generation Systems. Smart Grids, Intelligent Environment, Building Management.

T5: Applied Electronics, Mechatronics, Control and Automation. Computer Vision, Image Processing, Signal Processing, Modelling, Simulation, Artificial Intelligence, Mechatronics, Robotics, Human-Machine Interface Technology, Automation, Smart Sensors, Control Systems, Embedded Systems.

T6: Electrical Engineering Education and Emerging Technologies. Novel Educational Tools, Methods and Materials, Distance Learning, Information and Communication Technologies in Laboratories, University-Industry Collaboration, New Holistic Systems Modelling.

Special Session 1: Drive Systems for Aviation Electrification.

Special Session 2: AI and Medical Sensors for Healthcare.

Only full length papers were accepted.

167 authors from 17 countries: Austria (1), Bulgaria (1), Canada (1), Germany (4), Iran (1), Ireland (2), Israel (1), Italy (4), Japan (3), Mexico (1), Poland (1), Romania (59), Rwanda (1), South Africa (4), Spain (3), Turkey (3), United Kingdom (5), submitted 93 papers.

Papers from Romania: Timisoara (26), Iasi (12), Brasov (12), Bucharest (4), Cluj-Napoca (3), Craiova (2).

A double rounds review by at least 3 reviewers and an advocate (if necessary) was performed.

83 reviewers helped us: Rayan Abri, Lia-Elena Aciu, Ameer-Fethi Aimer, Bilal Akin, Eyup Akpınar, Bander Al-Rimy, Codruta-Mihaela Ancuti, Jose-Alfonso Antonino-Daviu, Luminita Barote, Ioana-Corina Bogdan, Radu Bojoi, Corneliu Botan, Mutlu Boztepe, Garret Brady, Mihai Cernat, Sevilay Cetin, Saman-Shojae Chaeikar, Marcian Cirstea, Silvia Cirstea, Sorina Costinas, Petru-Adrian Cotfas, Bulent Dag, Adrian Danila, Mahdi-Maktab Dar-Oghaz, Aleksander Dawid, Jorge-Manuel Miranda-Dias, Andrei Dinu, Toma-Leonida Dragomir, H. Bulent Ertan, Virgiliu Fireteanu, Marian Gaiceanu, Swathi Ganesan, Aurel Gontean, Gheorghe Grigoras, Sorin-Mihai Grigorescu, Elena Helerea, Bogdan Hnatiuc, Dan-Cornel Hulea, Mesfin- Seid Ibrahim, Catalin-Petrea Ion, Lucian-Mihai Itu, Maarten Kamper, Hadi Kanaan, Alon Kuperman, Ioan Lager, Dan-Florentin Lascu, Ramdane Lateb, Septimiu Lica, Marius Marcu, Muguras Mocofan, Alexandru Morega, Mihaela Morega, Nicolae Muntean, Adrian Munteanu, Sorin Musuroi, Farid Naceri, Dorin O. Neacsu, Petru Notingher, Anuradha Ogale, Dorin-Marius Petreus, Sangita Pokhrel, Radu-Emil Precup, Dan Pupeza, Mircea M. Rădulescu, Martin Riera-Guasp, Enrique Romero-Cadaval, Carlos Roncero-Clemente, Martin Sack, Isabel Seguí-Verdú, Ioan Serban, Bibhya Sharma, Attila Simo, Volker Staudt, Sedat Sunter, Farzad Tahami, Alin Tisan, Dumitru Toader, Teodora Todorova, Tiberiu Tudorache, Nicolae-Lucian Tutelea, Lamia Youb, Jianzhong Zhang,

From the 93 papers received, 4 were withdrawn, 23 were rejected and 66 were accepted (74%). A further 2 of the 66 accepted papers did not have registration/copyright, so only 64 papers were included in the final program of the conference.

Therefore, the final program contains 64 papers (67% of those submitted) from 13 countries distributed as follows: Romania 38 (Timisoara 14, Iasi 9, Brasov 9, Bucharest 3, Cluj-Napoca 2, Craiova 1), Austria 1, Bulgaria 1, Canada 1, Germany 3, Italy 4, Japan 1, Mexico 1, Poland 1, South Africa 3, Spain 4, Turkiye 2, UK 4.

The final program paper distribution per tracks was as follows:

- T1, Power Systems and Electromagnetics (11 papers)
- T2, Electrical Machines, Industrial Drives and Control (19 papers)
- T3, Power Electronics and Power Conversion (16 papers)
- T4, Renewable Electric Energy Conversion, Procession and Storage (5 papers)
- T5, Applied Electronics, Mechatronics, Control and Automation (9 papers)

- T6, Electrical Engineering Education and Emerging Technologies (0 papers)
- SS1, Special Session 1: Drive Systems for Aviation Electrification (0 papers).
- SS2, Special Session 2: AI and Medical Sensors for Healthcare (4 papers).

ACEMP-OPTIM 2025 took place in University POLITEHNICA Timisoara (UPT), Romania on May 14-17, 2025.

We used 4 rooms:

- Auditorium
- **Capacity:** 340 seats
- **Equipment:**
 - Video projection system (16:10 aspect ratio)
 - Sound system (2 mobile microphones, 2 lapel microphones)
 - Simultaneous translation system in 4 languages

Amphitheatres K1 and K2

- **Capacity:** 89 seats each
- **Equipment:**
 - Video projection system (16:9 aspect ratio)
 - Sound system (4 presidium microphones, 2 mobile microphones, 2 lapel microphones)
 - Simultaneous translation system in 2 languages

Multimedia M2 Hall

- **Capacity:** 40 seats
- **Equipment:** Video projection system (16:9 aspect ratio)

Two tutorials on the afternoon of the 14th of May were organized as follows:

Tutorial 1: **Digital Electronic System on Chip (SoC) Design Methodologies – Evolution and Trends**, Prof. Marcian Cirstea, UK, IEEE Fellow

Tutorial 2: **Contactless Power Transfer**, Prof. Babak Fahimi, USA, IEEE Fellow

Seven keynote addresses were presented:

Electric Motors and Power Electronic Drives for Aircraft Propulsion

Dan Ionel, PhD, IEEE Fellow, Kentucky University, Lexington USA

Dynamic Wireless Charging: Magnetics, Electronics, and Integration

Babak Fahimi, PhD, IEEE Fellow, University of Texas at Dallas, USA

Transitioning from Single Wind Turbine to Energy Islands – The Danish Case Towards High Energy Security

Frede Blaabjerg, PhD, IEEE Fellow, Aalborg University, Denmark

Mission-Profile-Oriented Testing and Monitoring for Power Electronics

Ke Ma, PhD, IEEE, Shanghai Jiao Tong University, China

Current Megatrends in Automotive Industry and Its Effects on Vehicle Architecture

Dr. Petru Demian, Continental Romania

Advanced Methods of Power Quality Analysis

Vladimir Katic, University of Novi Sad, Faculty of Technical Sciences, Serbia

ZF-Automobile Perspectives

Sever Scridon, PhD, ZF Romania

One USB memory stick of the Proceedings of ACEMP-OPTIM25 has been edited under IEEE Catalog Number: CFP2522D-USB, ISBN 79-8-3315-4241-2.

All papers were presented, these being received very well by the audience. Many comments and questions were raised and discussions took place, involving interaction between the presenters and many of the participants.

The organization of the conference was sponsored by University POLITEHNICA Timisoara (UPT), Romania through the Politehica Timisoara Foundation.

The budget of the conference was around 16.000 EUR.

Social Program:

Welcome cocktail 14th September at the UPT Conference Center

Dinner 15th May at UPT Sport Base no. 2, Aurel Paescu-Podoleanu Street

Gala Dinner 16th May at Recaş Winery, Timis county

Trip to Medieval Castle of Hunedoara with lunch included, 17th May.

The next joint event is currently being planned as ACEMP-OPTIM27, due to take place (provisional location) at the Bahçeşehir University (BAU), Istanbul, Turkey on September 1-2, 2027.