

Symposium on Control in Power Electronics, Electric Drives, Renewable Energy Sources and Smart Grids

11-12/10/2022

Académie Polonaise des Sciences
Centre Scientifique à Paris
74 rue Lauriston
75116 Paris

PROGRAMME

11/10/2022

09:00-09:15 REGISTRATION

09:15-09:30 WELCOME SPEECH

Magdalena Sajdak (Polish Academy of Sciences Scientific Center in Paris)
Marcin Morawiec (Gdańsk University of Technology)

09:30-10:15 Keynote Speaker: Christophe Turpin (LAPLACE – Laboratoire Plasma
et Conversion d'Energie) **ONLINE**

Fuel Cell Systems and Aging Mechanisms

10:15-10:30 DISCUSSION

SESSION 1: Power electronics systems

New semiconductor in power electronics, modulation algorithms, new structures of multi-level converters dedicated to the smart-grid application, energy storage, charging systems, and electromobility

10:30-10:45 Nicolas Rouger (LAPLACE – Laboratoire Plasma et Conversion d'Energie) **ONLINE**
Recent achievements on power converters, WBG devices and their gate drivers

10:45-11:00 Thierry Meynard (LAPLACE – Laboratoire Plasma et Conversion d'Energie)
ONLINE

*Geometric Programming for the Design of Magnetic Components/
Multiplexed Inverters for MV drives*

11:00-11:15 Arkadiusz Lewicki (Gdańsk University of Technology)
*SVPWM strategy for multilevel CHB inverter with DC-link voltage
balancing capability*

11:15-11:30 Piotr Dworakowski (SuperGrid Institute)
Power electronics in medium voltage direct current systems

11:30-11:45 Pierre-Olivier Jeannin (G2ELAB – Grenoble INP)
Packaging Design for Low EMI Generation from Power Modules

11:45-12:00 Piotr Musznicki (Gdańsk University of Technology)
EMI mitigation in the power converters with GaN transistors

12:00-12:15 DISCUSSION

12:15-13:15 LUNCH BREAK

SESSION 2: Control in electric drives
*Sensorless control of an electrical machines, regulation systems, genetic algorithms,
artificial neural networks*

13:15-13:30 Maria David (LAPLACE – Laboratoire Plasma et Conversion d'Energie) **ONLINE**
Sensorless Dual Vector Control of DFIM Speed Drive

13:30-13:45 Jarosław Guziński (Gdańsk University of Technology)
Multi-phase drives

13:45-14:00 Marcin Morawiec (Gdańsk University of Technology)
Speed observers for five-phase induction machines

14:00-14:15 Roland Ryndzionek (Gdańsk University of Technology)
Five-phase doubly-fed generator

14:15-14:30 DISCUSSION

14:30-15:00 COFFEE BREAK

**SESSION 3: Green energy, power management systems, energy storage,
hydrogen systems, electromobility**
*Green energy – energy extraction from renewable sources, hydrogen systems, intelligent smart-
grids, electromobility, charging systems*

15:00-15:15 Bruno Sareni, Xavier Roboam (LAPLACE – Laboratoire Plasma
et Conversion d'Energie) **ONLINE**
Recent achievements on smart microgrids integrated design

15:15-15:30 Pauline Kergus (LAPLACE – Laboratoire Plasma et Conversion d'Energie) **ONLINE**
Modeling and control methods for energy management

15:30-15:45 Krzysztof Blecharz (Gdańsk University of Technology)
Small Counter-Rotating Wind Turbine

15:45-16:00 Michel Mermet-Guyennet (Alstom)
R&D projects in DC Grids

16:00-16:15 Mickael Petit (CNAM; ENS-Paris-Saclay; CNRS)
Modelling a redefined architecture for concentrated photovoltaic power plant

16:15-16:30 DISCUSSION

12/10/2022

09:00-09:15 REGISTRATION

09:15-10:15 Haitham Abu-Rub (Texas A&M University at Qatar) **ONLINE**
The Role of Power Electronics in Creating the Futuristic Smart Energy Paradigm

SESSION 1: Presentation of the research teams and research units

10:15-11:15 LAPLACE Research Laboratory – main topics and facilities
Piotr Musznicki (Linte2; Gdańsk University of Technology)
Piotr Dworakowski (R&D projects; SuperGrid Institute)

11:15-11:45 COFFEE BREAK

11:45-12:45 Renata Downar-Zapolska (Gdańsk University of Technology) **ONLINE**
Overview of current international grant programs:
– EU Framework Programs HORIZON EUROPE,
– Welcome to Poland – NAWA program.
Horizon Europe research and innovation programs (2021-2027):
– ERC Starting Grant 2022,
– ERC Consolidator Grant 2022,
– ERC Advanced Grant 2022,
– other programs.

12:45-13:45 LUNCH BREAK

SESSION 2: Proposal of the potential research project and other cooperation

13:45-14:45 Jarosław Guziński (Gdańsk University of Technology)
Open discussion about potential research project in the future