

# Power Electronics Electrical Machines Energy Control Power Systems



## EUROPEAN PHD SCHOOL

26 - 30 May 2025, Gaeta/Italy

ORGANISED BY



SPONSORED BY



WITH THE SUPPORT OF:



# PROGRAMME

## MONDAY 26 May

08:30 – 09:00 **Registration desk** open  
09:00 – 09:30 **Opening Session** @ Conference Room  
09:30 – 10:45 **Keynote 1** @ Conference Room  
**Chair: Davide Montosi, Aston Martin Lagonda**  
**AI for the Optimisation of Power Electronics**  
**Alessandro Cremonesi, STMicroelectronics**  
10:45 – 11:15 *Coffee Break*  
11:15 – 12:30 **Presentations by participating companies**  
12:30 – 13:45 *Welcome Lunch*  
13:45 – 14:30 **Keynote 2** @ Conference Room  
**High Power SiC Converters**  
**Fabio Carastro, Semikron Danfoss**  
14:30 – 15:00 *Poster Setup*  
14:30 – 16:30 **Poster Session A** (last year PhD's)  
16:30 – 18:30 **Coffee and PhD-Company Meetings**  
(Recruitment) @ Exhibition Area  
19:30 **Transfer to dinner**  
20:00 – 22:30 **Social Dinner and Award Ceremony**

## TUESDAY 27 May

09:00 – 10:00 **Keynote 3** @ Conference Room  
**Aircraft Electrification w. Cryog. Power Electronics**  
**Bernd Eckardt, Fraunhofer IISB**  
10:00 – 12:30 **Lecture 1** @ Conference Room  
**HIL Real-Time Simulation of Modern Power Electronics**  
**Caio Osorio, Typhoon HIL | Fei Gao, UTBM**  
12:30 – 13:30 *Lunch Break*  
13:30 – 15:30 **LIVE DEMO SESSION** @ Exhibition Area  
15:30 – 18:00 **Lecture 2** @ Conference Room  
**Fractional KVA rating PWM converter doubly fed variable speed electric generator systems design and control and overview on MAGLEVs**  
**Ion Boldea, TU Timisoara (ret.)**

## WEDNESDAY 28 May

09:00 – 10:00 **Keynote 4** @ Conference Room  
**High Voltage DC Power Transmission (HVDC)**  
**Max Beuermann, Siemens Energy**  
10:00 – 13:00 **Lecture 3** @ Conference Room  
**Modular Multilevel Converters and Applications**  
**Marcelo L. Heldwein, TU Munich**  
**Thomas Brückner, UniBW Munich**  
13:00 – 14:00 *Lunch Break*  
14:00 – 15:00 **Poster Session B** (1st and 2nd year PhD's)  
15:00 – 18:00 **Lecture 4** @ Conference Room  
**Sustainability/Life Cycle Assessment (LCA)**  
**Jonas Huber, ETH Zurich**  
**Andrea Vezzini, BFH**  
20:00 – 22:30 **Pizza Dinner**

## THURSDAY 29 May

09:00 – 10:00 **Keynote 5** @ Conference Room  
**Power Electronics for Particle Accelerators**  
**Fulvio Boattini, CERN (CH)**  
10:00 – 12:30 **Lecture 5** @ Conference Room  
**Solid State Transformer - Theory and Applications**  
**Richard Zhang, Virginia Tech (US)**  
12:30 – 13:30 *Lunch Break*  
13:30 – 15:30 **Lecture 6** @ Conference Room  
**Traction inverter control: state of the art and future trending automotive**  
**Giuseppe Russo/Giuseppe D'Angelo, STMicroelectronics**  
15:30 – 16:00 *Coffee Break*  
16:00 – 18:00 **Lecture 7** @ Conference Room  
**Energy Storage Systems and Applications**  
**Fundamentals: Minglong He, ABB**  
**Systems and Applications: Lorenzo Giuntini, ABB**

## FRIDAY 30 May

09:00 – 10:00 **Keynote 6** @ Conference Room  
**Power Electronic Integration onboard Commercial Vehicles**  
**Ilia Basso, IVECO Group (IT)**  
10:00 – 12:30 **Lecture 8** @ Conference Room  
**High-Efficiency and High-Power Density Converters**  
**Ziwei Ouyang, DTU Lyngby**  
12:30 – 13:00 **Introduction to Final Test** @ Conference Room  
13:00 – 14:00 *Lunch Break*  
15:30 – 18:30 **Cultural Excursion**

## ORGANIZED BY



## SUPPORTED BY



## SPONSORED BY



# PHD\_SCHOOL PEOPLE

GENERAL CHAIR



**Giuseppe Tomasso**  
University of Cassino  
and South Lazio

GENERAL CHAIR



**Leo Lorenz**  
ECPE European Center  
for Power Electronics

HONORARY CHAIR



**Silvio Colombi**  
ABB

HONORARY CHAIR



**Alfred Rufer**  
EPFL Ecole Polytechnique  
Federal de Lausanne

The European PhD School on 'Power Electronics, Electrical Machines, Energy Control and Power Systems' is organised by the University of Cassino in cooperation with ECPE European Center for Power Electronics since 2011. It's a unique event in Europe for young power electronics engineers from academia to exchange experience and technical information about their PhD projects.

**The PhD School starts with an Industry Day covering keynote presentations from industry experts as well as a dialogue session for detailed face-to-face discussions between PhD students and industry representatives. The 1st day ends with a social dinner including the PhD School Award celebration. The rest of the week is dedicated to high-level lectures from several experts from academia but also from industry, related to the following thematic areas:**

- Power Electronics
- Electrical Machines
- Energy Control
- Power Systems

**More information and registration: [ecpe.org/phdschool](http://ecpe.org/phdschool)**

**More information about the Industry Day for Recruitment see last page!**

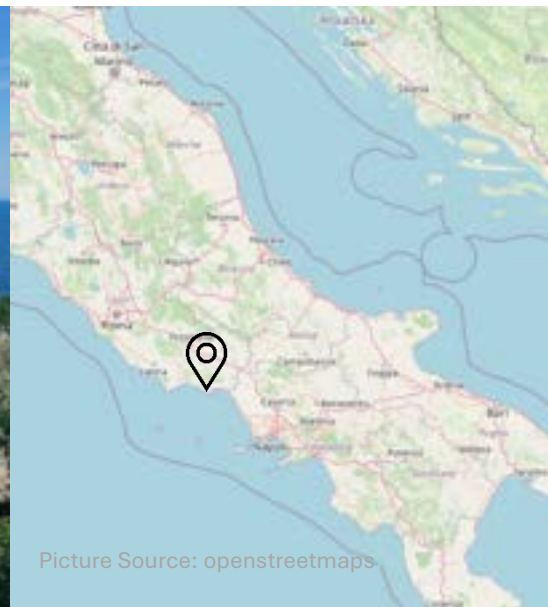


Picture Source: Martina Pellechia, istock

Gaeta is a city in the province of Latina, in Lazio, Southern Italy. Set in the Gulf of Gaeta, it is 120 km from Rome and 80 km from Naples. The European PhD School on 'Power Electronics, Electrical Machines, Energy Control' takes place at the beautiful Angevin Castle located in the ancient part of Gaeta.



Picture Source: glass\_bear, istock



Picture Source: openstreetmaps



Picture Source: ECPE

# AWARDS 2025

## European PhD School Award 2025

On a voluntary basis, each last-year stage PhD student can present the research activity to a qualified PhD School Commission at the Poster session A. At the end of the session, the 'European PhD School Award' will be assigned by the Commission, with a grant of 1.000,00 Euro.

### Research activity:

All PhD students have to send the research activity document, their CV and the poster as PDF in advance.

Further details with confirmation of registration.



# EUROPEAN PHD SCHOOL

## Board and Scientific Committee

### General Chair

Giuseppe Tomasso, University of Cassino and South Lazio, Italy  
Leo Lorenz, ECPE European Center for Power Electronics, Germany

### Honorary Chair

Silvio Colombi, ABB, Switzerland  
Alfred Rufer, EPFL, Switzerland

### Scientific Committee

Marco Aimo Boot, Iveco Group, Italy  
Ciro Attaianese, University of Naples “Federico II”, Italy  
Luca Dalessandro, ETIX – Innosuisse – IEEE, Switzerland  
Alfonso Damiano, University of Cagliari, Italy  
Jürgen Biela, ETH Zurich, Switzerland  
Ion Boldea, University of Timisoara, Rumania  
Sasa Djokic, University of Edinburgh, United Kingdom  
Drazen Dujic, EPFL, Switzerland  
Nicola Fischer Celanovic, Typhoon HIL, Switzerland  
Fei Gao, University of Technology of Belfort-Montbéliard, France  
Thomas Harder, European Center of Power Electronics, Germany  
Marc Hiller, Karlsruhe Institute of Technology, Germany  
Stefano Massucco, University of Genova, Italy  
Bernd Neuner, ZES Zimmer Electronic System, Germany  
Greg Ombach, Airbus, Germany  
Dr. Francesco Gennaro, STMicroelectronics



# EUROPEAN PHD SCHOOL

## Contact Organisation



ECPE European Center for Power Electronics e.V.  
Ostendstrasse 181, 90482 Nuremberg, Germany  
Participation: Marietta DiDio  
[marietta.didio@ecpe.org](mailto:marietta.didio@ecpe.org) | +49 911 810288-13  
Exhibition/Sponsoring: Lena Somschor  
[lena.somschor@ecpe.org](mailto:lena.somschor@ecpe.org) | +49 911 810288-18

Registration: [www.ecpe.org/phdschool](http://www.ecpe.org/phdschool)

## Industry Day for Recruitment Monday, 26 May 2025



Pictures Source: ECPE

If your company is interested in participation at the Industry Day please contact [lena.somschor@ecpe.org](mailto:lena.somschor@ecpe.org) or visit [www.ecpe.org/phdschool](http://www.ecpe.org/phdschool)

Industry Day for Recruitment – the meeting point for companies and PhD students!  
In the frame of the PhD School event, ECPE organizes the Industry Day for Recruitment, where industry representatives can meet PhD students on-site. Established companies in the field of power electronics, electrical drives and systems participate every year. Moreover, a special session with presentations is dedicated to the participating companies.