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EMERGE
2024

THE SUMMER SCHOOL ON
ELECTRICAL
MACHINES
AND DRIVES
FOR GREEN
TRANSPORTATION
SYSTEMS

II EDITION



Modena, Italy

24TH-28TH
JUNE 2024

TECHNICAL ENDORSEMENT





EMERGE 2024

Electrical Machines and Drives for Green Transportation Systems

The Summer School on 'Electrical Machines and Drives for Green Transportation Systems' is organized by the **University of Modena and Reggio Emilia** in cooperation with **MUNER - The Motorvehicle University of Emilia-Romagna**, the **Electrical Machine Technical Committee of the IEEE IES** and **DORNA project** with support of **Tecnopolis di Modena, Democenter Foundation, MOST, Ansys and Particleworks**.

It's a unique event in Europe for **young researchers and PhD students** to exchange experience and technical information about their projects and meet representatives from top industries in the transportation field.

Engineers from Industry are also welcomed, it is an opportunity for them **to stay updated with the latest research in electric transportation** thanks to the flexible formula of single day registrations.

The Summer School starts with **two Industry Day covering keynote presentations from industry experts** as well as a dialogue session for detailed face-to-face discussions. **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 technical areas:

Electrical Machines Design and Modeling

Electrical Drives and their Control

Electrical Drives Reliability and Monitoring

Industrial and Transport Applications of Machines and Drives

Sessions related to the development of **soft skills, techniques and methodologies for successful research, fundraising, effective leadership and entrepreneurship** will also be covered.

 **24th -28th June 2024**

 **h 9.00 - 18.00**

 **Department of Engineering Enzo Ferrari - Via P. Vivarelli 10, 41125 Modena (Italy)**

 **All speeches and lessons will be in English.**

Read more: <https://www.emergephd.unimore.it/>



OBJECTIVES

- Foster closer interaction between academia and industry and provide young engineers with a platform to collaborate on sustainable solutions, facilitate networking, and discuss innovative developments.
- Engage young engineers and researchers in a positive, reciprocal relationship with academia and industry, and actively contribute and share perspectives to help advance the electrification in the transportation sector.
- To attend lectures on the latest development and research in the green transportation sector.
- To develop soft skills, techniques and methodologies for successful research, fund rising, to be the leader of tomorrow and drive the electrical revolution in transportation.

SCIENTIFIC COMMITTEE

- *Prof. Davide Barater, UniMORE, IEEE-IES EMTC Secretary (Summer school Chair)*
- *Prof. Giovanni Franceschini, UniMORE*
- *Prof. Sonia Leva, PoliMi, Senior Member, IEEE*
- *Prof Michela Longo, PoliMi, Member, IEEE*
- *Prof. Emilio Lorenzani, UniMORE, Senior Member, IEEE*
- *Prof. Fabio Immovilli, UniMORE, Senior Member, IEEE*
- *Prof. Giampaolo Buticchi, The University of Nottingham Ningbo China, Senior Member, IEEE*
- *Prof. David Gerada, The University of Nottingham, Project DORNA coordinator*
- *Prof. Jose Antonino-Daviu, Universitat Politècnica de València, IEEE-IES EMTC chair*
- *Dr. Shafiqh Nategh, PhD, Founder and CEO of SEDRIVE, Sweden, IEEE-IES EMTC Vice-chair*
- *Prof. Stefano Nuzzo, UniMORE, IEEE member*



PROGRAM

DAY 1 - MONDAY, 24TH JUNE

- Opening ceremony - Welcome address.
- Testing of high performance electric powertrain components: challenges and solutions – *Keynote*.
Ferrari, Italy.
- Electric racing motorcycle: current status and trends – *Keynote*.
Giovanni Puccetti, Ducati, Italy.
- Semiconductors are shaping automotive applications – *Keynote*.
Marija Jankovic, ROHM Semiconductor Europe, Germany.
- PhD poster session.
- Advanced Electrical Drivetrains for Propulsion and Traction Applications - *Technical lecture*.
Prof. Ayman El-Refaie, Marquette University, the US.
- Hardware-in-the-Loop (HIL) for development and testing of electric motor drive control software – *Live Demo*.
Jovan Zelic, Typhoon HIL, Serbia.

DAY 2 - TUESDAY, 25TH JUNE

- Li-ion Batteries: challenges, testing and recycling – *Keynote*.
Giuseppe Corcione Reinova, Italy.
- Design Challenges of WBG power converters for traction applications – *Technical lecture*.
Prof. Radu Bojoi, Politecnico di Torino, Italy
- Modeling and development of electrified powertrain in off-highway vehicles – *Keynote*.
Stefano Fiorati, CNH Industrial, Italy.
- A global network of charging infrastructures for electric boats – *Keynote*.
Michele Bolpagni, Aqua superPower Limited, Italy.
- E-machine Design, Analysis and Optimization with Ansys- Live-Demo.
Francesco Papini, Ansys Italia srl, Italy.

DAY 3 - WEDNESDAY, 26TH JUNE

- Driving Sustainability: The Transformative Role of Artificial Intelligence in Mobility and Green Transportation – *Technical lecture*.
Prof. Seyed Mahdi Mirafabzadeh and Prof. Michela Longo, Politecnico di Milano.
- Opportunities, Reliability Challenges and Potential Solutions in Wide-bandgap Device based Motor Drives – *Technical lecture*.
Prof. Xibo Yuan, China University of Mining and Technology, University of Bristol, UK.
- High Performance Electrical Machines enabled by advanced manufacturing – *Technical lecture*.
Prof. Chris Gerada, University of Nottingham, UK.



REGISTRATION AND PAYMENT

You can use the **following form** to registration.

This form must be sent to the Democenter-Sipe Foundation by email to: formazione@fondazionedemocenter.it

CONTACT

For general information, administrative questions and registration procedure, please contact:

Democenter Foundation, Via P. Vivarelli, 2 (c/o Campus DIEF) 41125 Modena – Italy.

Phone number: +39 059.2058153

Email address: formazione@fondazionedemocenter.it.



EMERGE 2024

Electrical Machines and Drives for Green Transportation Systems

PARTICIPANT REGISTRATION DETAILS

Name Surname.....

Phone number..... E-mail.....

Degree Job role.....

AGENCY

Business Name.....

tax code or VAT number..... Codice SDI (if need)

Company activity.....

Address..... Postal Code.....

State..... City of..... Prov.

Number of employees Phone E-mail.....

BILLING DATA (only if different from the company data)

Header and address.....

Tax code or VAT number..... Codice SDI.....

PARTECIPATION FEE (sign the choice):

3 days registration: 24th, 25th and 26th June - 400€ +Vat.

Special price for the second member of each company: 24th, 25th and 26th June - 360€ +Vat.*

*10% discount starting from the 2nd member for each company.

REGISTRATION

Registration must take place within 10th June sending the form by email to: formazione@fondazionedemocenter.it.

For clarifications you can contact the Democenter Foundation on: 059 2058153.

PAYMENT

The registration fee must be paid before the beginning of the course. Payment of registration fees is via bank transfer (currency Euros) to: **Fondazione Democenter-Sipe** IBAN: **IT44C0538712905000000551764** BIC **BPMOIT22 XXX Banca Popolare dell'Emilia - Romagna, Ag. 5 di Modena**. Democenter-Sipe Foundation will send the invoice upon receipt of the registration fee.

The data collected will be processed in accordance with the European data protection regulation (EU Reg. 2016/679). For more information on treatment, privacy and exercisable rights, see the information on the website www.democentersipe.it/privacy/

Consent to the processing of your personal data with reference to the information received.

YES NO

Date Stamp and signature.....