

EMERGE
2023

The Summer School on

ELECTRICAL MACHINES AND DRIVES FOR GREEN TRANSPORTATION SYSTEMS



11-15 September 2023

MODENA, ITALY

emergephd.unimore.it

TECHNICAL ENDORSEMENT



SPONSORS



Electrical Machines and Drives for Green Transportation Systems - EMERGE 2023

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 **Tecnopolo 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.**

 **11th - 15th September 2023**

 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 raising, 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. **Emilio Lorenzani**, UniMORE
- Prof. **Jose Antonino-Daviu**, Universitat Politècnica de València, IEEE-IES EMTC chair
- Dr. **Shafiq Nategh**, PhD, Founder and CEO of SEDRIVE, Sweden
- Prof. **Fabio Immovilli**, UniMORE
- Prof. **Stefano Nuzzo**, UniMORE
- Prof. **David Gerada**, The University of Nottingham, Project DORNA coordinator
- Prof. **Giampaolo Buticchi**, The University of Nottingham Ningbo China

PROGRAM

DAY 1 - MONDAY, 11TH SEPTEMBER

- **Opening ceremony - Welcome address.**
UniMore Rector, MUNER president, IES representative, IES EMTC, Giovanni Franceschini & Davide Barater – Unimore.
- **The challenge of electrification in high performance cars – Keynote.**
Ugo Sitta, Head of Power Electronics development, Ferrari, Italy.
- **Current Status and Trends in Electrical Machines used in Transportation Application – Keynote.**
Shafiqh Nategh, PhD, Founder and CEO of SEDRIVE, Sweden.
- **Electric powertrains for offroad e-Mobility – Keynote.**
Dmitry Svechkarenko, R&D Team Manager at ABB Corporate Research, Sweden.
- **PhD poster session.**
- **Live-Demo – Particle simulation for oil-cooled e-motors: fluid and solid temperature prediction using Particleworks.**
Michele Merelli is Business Development Specialist and CAE Engineer at Particleworks Europe and Enginsoft, Italy.

DAY 2 - TUESDAY, 12TH SEPTEMBER

- **Electrification in commercial vehicles – Keynote.**
Shaohong Zhu, Electric Machine Engineer at Cummins, The United Kingdom.
- **The frontier of electrification in agriculture and off-highway vehicles – Keynote.**
Diego Troncon, Electric Machines Technical Project Leader in the Electrification System Integration, CNH Industrial, Italy.
- **Modern technics and methodologies for Testing Power Electronics Equipment – Keynote.**
Marcin Szlosek, R&D Department Manager ABB PL, Poland.
- **Electric Propulsion and e-Machine technologies – Technical lecture.**
David Gerada, The University of Nottingham, UK.
- **Live-Demo – Design and Optimization of Power Electronics with Ansys.**
Antonio Camarda - Senior Application Engineer, Ansys.

DAY 3 - WEDNESDAY, 13TH SEPTEMBER

- **From idea to commercialisation – Soft skill lecture.**
Christian Kumar, director of Maverx Academy, Maverx Foundation, Italy.
- **Funding and pitching – Soft skill lecture.**
Christian Kumar, director of Maverx Academy, Maverx Foundation, Italy.
- **Maserati Museum – Factory tour.**
- **Panini Museum – Cars exhibition.**
- **Hombre Farm – Tasting Experience.**

DAY 4 - THURSDAY, 14TH SEPTEMBER

- **Insulation in electrical machines for green transportation: challenges and solutions – Technical lecture.** *Prof. Andrea Cavallini, University of Bologna, Italy*
- **Modern Design and manufacturing of induction machines for transportation electrification – Technical lecture.** *Prof. Gerard Capolino, distinguish lecturer IEEE, France*
- **Powertrains with multiphase motors supplied by multilevel converters – Technical lecture.** *Prof. Carlo Cecati, University of L'Aquila, Italy*
- **Advanced methods for condition monitoring of electric motors based on the analysis of electrical quantities – Technical lecture.** *Prof. Jose Antonino Daviu, Universitat Politècnica de València, Spain.*

DAY 5 - FRIDAY, 15TH SEPTEMBER

- **Additive manufacturing applied to electrical machines** - *Technical lecture.*
Prof. Elena Bassoli, University of Modena and Reggio Emilia, Italy.
- **Final pitch presentation: discussion and feedback** - *Soft skill lecture.*
Christian Kumar, director of Maverx Academy, Maverx Foundation, Italy.
- **Final test for ECTS.**

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

REGISTRATION AND PAYMENT

If you are an **Engineer** there are 4 options to join:

- **Single day registration for day 1, 2 or 4 (11th, 12th or 14th September) – 150€.**
- **Special price for 3 days registration (11th, 12th and 14th September) – 400€.**
- **Social dinner on 14th September – €60.**
- **Maserati Museum Factory tour, Panini Museum Cars exhibition, Hombre Farm Tasting Experience on day 3, 13th September – €60.**

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.

Electrical Machines and Drives for Green Transportation Systems - EMERGE 2023

Name Surname.....
Phone number.....E-mail.....
DegreeJob role.....

AGENCY

Business Name.....
tax code or VAT number.....Codice SDI (if need)
Company activity.....
Address.....PostalCode.....
State.....City of.....Prov.
Number of employeesPhoneE-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)

- Single day registration for: day 1 (11th September) day 2 (12th September) day 4 (14th September) - 150€ +Vat.
 Special price for 3 days registration (11th, 12th and 14th September) - 400€ +Vat.
 Social dinner on day 4, 14th September - 60€ +Vat.
 Maserati Museum Factory tour, Panini Museum Cars exhibition, Hombro Farm Tasting Experience on day 3, 13th September - 60€ +Vat

For registrations for individual days there is a maximum number of members. Priority will be given to the first registrants.

REGISTRATION

Registration must take place within 7th september sending the form by email to: formazione@fondazione-democenter.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

DateStamp and signature.....