

## Summer Semester 2025

# MSEI Seminar Leistungselektronik und elektrische Antriebe MSPE Seminar Power Electronics and Electrical Drives

### Registration

If you are interested in participating in the seminar, please email the stated supervisor about the topic that interests you. Each topic will be assigned to a maximum of two students. You will get a confirmation or rejection email from the supervisor within 2-3 days. In case of a positive answer, the supervisor will register you to the corresponding module in TUMonline.

(In case of a negative answer, you can contact other supervisors. [Please do not contact several supervisors at the same time.](#))

### Objectives

After completion of the module, the students are expected

- to familiarise themselves independently with specified topics in the field of power electronics and electrical drives,
- to write a technical report on their work and
- to present and discuss their work in a scientific seminar with professional audiences.

### Evaluation

- Regular meetings with supervisors on the progress of the work and the procedure (20%)
- Presentation of the results (15 minutes) followed by a discussion (5 minutes) (40%)
- Written research paper in IEEE style (5 pages) (40%) (download template from [GitLab](#))

### Procedure

- Topics released on **07 April 2025**
- Kick-off meeting on **25 April 2025**, at 14:00 in room 3999 (for students with confirmed topics and supervisors)
- Report submission before **18 July 2025**
- Presentation on **25 July 2025** at 13: 30 in room 3999

### Coordination and general topics

Wei Tian

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(Only to be contacted for organisational questions. Please apply for the seminar directly to the supervisor of the topic(s) that interest(s) you)

## List of topics (updated 07.04.2025)

Topic	Supervisor
<b>Modellierung und Regelung von Synchronreluktanzmaschinen</b> <b>Modelling and Control of Synchronous Reluctance Machines</b>	Stefan Klaß stefan.klass@tum.de
<b>Modelling and Control of AC Machines</b>	Julien Cordier julien.cordier@tum.de
<b>Commutation Procedure for Current Source Converter (Code+PLECS)</b>	Christos Leontaris christos.leontaris@tum.de
<del>1. Evaluation of Modulation Methods for 3-Level Converters</del> <del>2. DC Link Voltage Balancing for Multilevel Converters</del> <del>3. Advanced Filtering and EMI Reduction Techniques in Inverters</del>	Oleksandr Pavlenko o.pavlenko@tum.de
<b>Study on EMI filters for the onboard charger</b>	Xingqi Yin xingqi.yin@tum.de
1. <b>Research on Intelligent Control Strategies for Power Converters</b> 2. <b>Field-oriented control of electric drives with PI parameters optimization</b>	Yongdu Wang yongdu.wang@tum.de
<b>Design and Control of Isolated DC Converters for EV Chargers</b>	Dehao Kong dehao.kong@tum.de
1. <b>Resilient Control of Power Converter-based Energy Systems against Cyber Attacks</b> 2. <b>Black Start Strategy of Diode-Rectifier HVDC-based Off-shore Wind Farms</b>	Yuanxiang Sun yuanxiang.sun@tum.de
<b>Double-Pulse-Test for SiC MOSFETs</b>	Tianxu Cao tianxu.cao@tum.de
<b>GaN-based Motor Drive for Humanoid Robots</b>	Wei Tian wei.tian@tum.de