



SPEED Motor Design Seminar 2019

Seminar Information

This year's motor design seminar will be hosted by MACCON, with detailed motor design lectures / tutorials. The seminar is a 3-day event covering all aspects of electrical machines. Participants can attend all 3 days or just the individual days which suit their needs.

The seminar is aimed at engineers and scientists who want to learn how to design electric machines from a theoretical and practical perspective.

The seminar will use the well-known design tool like SPEED to illustrate practical design work.

The training will be held in English. MACCON staff will be available for selective translation and explanations in German.

Even if you have not used our motor design tools yet, you are also welcome to attend this event! The training sessions are designed for beginners as well as for advanced users.

We recommend that you bring your own laptop. You will receive your personal license for the seminar in advance. This way, you can participate in design tutorials.

[Tuesday, 03.12.2019 from 09:45 a.m. to 05:45 p.m.](#)

SPEED Intro / Custom based Example

Synchronous machines: Brushless SPM Motor:

SPM Motor

- Initial sizing
- Slots and poles
- Winding
- Material
- Finite Element Analysis
- Cogging torque
- Full FEM Analysis of SPM Motor

Wednesday, 04.12.2019 from 09:00 a.m. to 05:45 p.m.

Synchronous machines: IPM Motor/Synchronous Reluctance Motor:

IPM Motor

- Initial sizing
- Estimation of turns per coil
- Initial performance
- Voltage locus diagram
- Flux weakening
- Adjust saliency ratio with Finite Element Method
- Full FEM Analysis of IPM Motor
- Efficiency Maps
- Thermal Analysis of IPM Motor
- Optimization

Synchronous Reluctance Motor:

- Initial sizing
- Rotor design
- Winding layout
- Validate L_d and L_q with Finite Element Method
- Saliency ratio

Thursday, 05.12.2019 from 09:00 a.m. to 04:00 p.m.

AC machines: Induction Motor / Switched Reluctance Motor:

Induction Motor

- Stator winding layout
- Rotor bar configuration
- Torque/speed characteristic
- Equivalent circuit
- Adjust main and leakage reactance with Finite Element Method
- Full FEM Analysis of Induction Motor

Switched Reluctance Motor

- Stator and rotor topology
- Find correct firing angles
- Determine aligned and unaligned inductance
- Use Finite Element based flux linkage curves
- Optimization of torque ripples
- Full FEM Analysis of SR Motor

Organization

Trainers:

Dr. Markus Anders (Siemens)

Dipl.-Ing. Johann Kott (MACCON)

M.Sc. Stephan Bichlmaier (MACCON)

Dipl.-Ing. Christoph Stuckmann (MACCON)

Language:

English / German

When:

03.12.2019 – 05.12.2019

Where:

MACCON GmbH

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www.maccon.de

Training fees:

1 day: 800,00 € plus VAT

2 days: 1.200,00 € plus VAT

3 days: 1.600,00 € plus VAT

Included in the fees:

- Participation in the seminar
- Training slides
- Refreshments, lunch, social events

Accommodation is not included. However, we can book nearby hotels on request.

Registration:

Please register with Ms. Veronika Tertsch, Email: v.tertsch@maccon.de