



## Motor Design Seminar

using Simcenter SPEED and Simcenter Motorsolve

Tuesday 21.03.2023	
08:30	<b>Welcome / Installation Software</b>
09:00 – 10:30	<b>Basic Theory</b> <ul style="list-style-type: none"> <li>• electromagnetism / Lorentz force / law of induction</li> <li>• Different motor types</li> <li>• Sinewave and squarewave commutation</li> <li>• Basic principles of motor control</li> <li>• Simulation methods</li> </ul>
	<b>Coffee break</b>
10:45 – 12:15	<b>Basic Theory</b> <ul style="list-style-type: none"> <li>• electromagnetism / Lorentz force / law of induction</li> <li>• Different motor types</li> <li>• Sinewave and squarewave commutation</li> <li>• Basic principles of motor control</li> <li>• Simulation methods</li> </ul>
	<b>Lunch break</b>
13:30 – 15:00	<b>Design PM BLDC Motor in Simcenter SPEED</b> <ul style="list-style-type: none"> <li>• Theory of BLDC Motors</li> <li>• Motor sizing</li> <li>• Number of slots and poles</li> <li>• Winding schemes</li> <li>• Operating point / Torque-speed graph</li> <li>• Discussion of simulation results</li> </ul>
	<b>Coffee break</b>
15:15 – 16:45	<b>Design PM BLDC Motor in Simcenter SPEED</b> <ul style="list-style-type: none"> <li>• Theory of BLDC Motors</li> <li>• Motor sizing</li> <li>• Number of slots and poles</li> <li>• Winding schemes</li> <li>• Operating point / Torque-speed graph</li> <li>• Discussion of simulation results</li> </ul>
	<b>Coffee break</b>
17:00 – 17:45	Open Discussion / User Cases
19:30	<b>Dinner</b>

<b>Wednesday 22.03.2023</b>	
<b>08:30</b>	<b>Welcome / Installation Software</b>
<b>09:00 – 10:30</b>	<b>Design PM Synchronous Motor in Simcenter Motorsolve</b> <ul style="list-style-type: none"> <li>• Theory IPM Motors</li> <li>• Motor sizing</li> <li>• Number of slots and poles</li> <li>• Winding schemes</li> <li>• Torque/speed graph / field weakening / efficiency Map</li> <li>• Discussion of simulation results</li> </ul>
	<b>Coffee break</b>
<b>10:45 – 12:15</b>	<b>Design PM Synchronous Motor in Simcenter Motorsolve</b> <ul style="list-style-type: none"> <li>• Theory IPM Motors</li> <li>• Motor sizing</li> <li>• Number of slots and poles</li> <li>• Winding schemes</li> <li>• Torque/speed graph / field weakening / efficiency Map</li> <li>• Discussion of simulation results</li> </ul>
	<b>Lunch break</b>
<b>13:30 – 15:00</b>	<b>Design of Induction Motor in Simcenter SPEED</b> <ul style="list-style-type: none"> <li>• Theory Induction Motor</li> <li>• Motor sizing</li> <li>• Number of slots and bars</li> <li>• Winding schemes</li> <li>• Torque/speed graph / U/f control / efficiency map</li> <li>• Discussion of simulation results</li> </ul>
	<b>Coffee break</b>
	<b>Design of Induction Motor in Simcenter SPEED</b> <ul style="list-style-type: none"> <li>• Theory Induction Motor</li> <li>• Motor sizing</li> <li>• Number of slots and bars</li> <li>• Winding schemes</li> <li>• Torque/speed graph / U/f control / efficiency map</li> <li>• Discussion of simulation results</li> </ul>
	<b>Coffee break</b>
<b>17:00 – 17:45</b>	Open Discussion

**Trainers:**

Johann Kott (MACCON)

Stephan Bichlmaier (MACCON)

**Language:**

English / German

**When:**

21.03.2023 – 22.03.2023

**Where:**

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[www.maccon.de](http://www.maccon.de)

**Training fees:**

1 day: 880,00 € plus VAT

2 days: 1350,00 € 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](mailto:v.tertsch@maccon.de)