PLECS WORKSHOP

Advanced Modeling and Simulation of Power Electronic Systems
Chalmers University of Technology, June 18, 2019

08:30	**Registration**
09:00	**Introduction to PLECS** ▶ General use of PLECS Blockset and PLECS Standalone ▶ Instantaneous switching ▶ Variable and fixed-step operation Exercise: Modeling a switched-mode power supply
10:00	**Break**
10:30	**Solver Settings** ▶ Definition of stiff and non-stiff systems ▶ Explicit and non-explicit solvers ▶ Stability domains ▶ Accuracy considerations, step size control ▶ Proper handling of discontinuities, zero-crossing detection Exercise: Solver accuracy and settings
12:00	**Lunch**
13:00	**Introduction to Thermal, Magnetic & Mechanic Modeling & Simulation** ▶ Switching & conduction loss descriptions ▶ Combined electrical-thermal simulation ▶ Permeance Capacitance Analogy Model Exercise: Thermal modeling of a buck converter
14:30	**Break**
15:00	**Overview of PLECS Tools** ▶ Custom components ▶ Steady State analysis ▶ Small signal analysis ▶ State machine, C-Script and the DLL block ▶ Simulation scripting Exercise: Building a modulator using the state machine block
16:00	**Overview and Introduction to the PLECS RT Box** ▶ Hardware-in-the-Loop (HIL) ▶ Rapid control prototyping (RCP) ▶ Demonstration of a real-time simulation
16:30	**End of day**
Contact	**Plexim GmbH, +41 44 533 51 00, info@plexim.com**
Location	**Chalmers University of Technology, Fredrik Lamms room, Hörsalsvägen 11, 412 96 Göteborg, Sweden**