

# PLECS WORKSHOP

Advanced Modeling and Simulation of Power Electronic Systems  
Hochschule Darmstadt, March 26, 2018

---

08:30	Registration
09:00	<b>Introduction to PLECS</b> <ul style="list-style-type: none"><li>▶ General use of PLECS Blockset and PLECS Standalone</li><li>▶ Instantaneous switching</li><li>▶ Variable and fixed-step operation</li></ul> Exercise: Modeling a switched-mode power supply
10:00	Break
10:30	<b>Solver Settings</b> <ul style="list-style-type: none"><li>▶ Definition of stiff and non-stiff systems</li><li>▶ Explicit and non-explicit solvers</li><li>▶ Stability domains</li><li>▶ Accuracy considerations, step size control</li><li>▶ Proper handling of discontinuities, zero-crossing detection</li></ul> Exercise: Solver accuracy and settings
12:00	Lunch
13:00	<b>Introduction to Thermal, Magnetic &amp; Mechanic Modeling &amp; Simulation</b> <ul style="list-style-type: none"><li>▶ Switching &amp; conduction loss descriptions</li><li>▶ Combined electrical-thermal simulation</li><li>▶ Permeance Capacitance Analogy Model</li></ul> Exercise: Thermal modeling of a buck converter
14:30	Break
15:00	<b>Overview of PLECS Tools</b> <ul style="list-style-type: none"><li>▶ AC Sweep and Impulse Response Analysis Tools</li><li>▶ Steady State Analysis Tool</li><li>▶ Implementing custom components</li></ul> Exercise: Creating a custom PV string component
16:00	End of day
Contact	Plexim GmbH, +41 44 533 51 00, <a href="mailto:info@plexim.com">info@plexim.com</a>
Location	Hochschule Darmstadt, Schöfferstrasse 3, Gebäude C10, Raum 03.01, 64295 Darmstadt, Deutschland