

# PLECS WORKSHOP

Advanced Modeling and Simulation of Power Electronic Systems  
Aalborg University, October 9, 2014

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 &amp; Magnetic Modeling &amp; Simulation</b> <ul style="list-style-type: none"><li>▶ Switching &amp; conduction loss descriptions</li><li>▶ Combined electrical-thermal simulation</li><li>▶ Magnetic modeling in PLECS</li></ul> Exercise: Thermal modeling of a buck converter, magnetic modeling of a forward converter
14:30	Break
15:00	<b>Mechanical Modeling in PLECS</b> <ul style="list-style-type: none"><li>▶ Simulation of electromechanical systems</li><li>▶ Inelastic collisions</li></ul> Exercise: Modeling an electric vehicle using the PLECS mechanical domain
16:00	End of day
Contact	Plexim GmbH, +41 44 533 51 00, <a href="mailto:info@plexim.com">info@plexim.com</a>
Location	Aalborg University, Room 3.115, Pontoppidanstraede 105, 9220 Aalborg
Note	This workshop on October 9 addresses to anyone who has not been using PLECS before. There will be another workshop on October 10 in the same location.