PLECS WORKSHOP

Advanced Modeling and Simulation of Power Electronic Systems
University of Nottingham, 16th April 2026

8:30	Registration
09:00	The PLECS Toolchain ▶ PLECS, PLECS Coder, and RT Box ▶ General use of PLECS, modeling vs. simulation ▶ Instantaneous switching, variable and fixed-step operation ▶ Simulation domains and system-level simulation ▶ Tools: steady-state and small-signal analysis, state machine, simulation scripting Exercise: Simulation of a flyback converter
10:40	Break
11:00	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
12:00	Lunch
13:00	PLECS Spice ▶ Seamless integration of full-fledged SPICE solver inside PLECS Standalone ▶ Coupling the PLECS controls domain with a SPICE power stage using variable-step solver Exercise: Flyback converter with SPICE device models
14:40	Break
15:00	Bringing Simulation and Real Hardware Together (Code Generation Workflow in PLECS) ▶ Automatic code generation for microcontrollers ▶ Plant code generation for the RT Box ▶ Nanostep®, FlexArray and CPU solver engines ▶ Real-time simulation with 4ns step size for MHz switching Demonstration: HIL testbench with microcontroller and RT Box
16:00	Q&A
16:15	End of day
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