

PLECS Workshop

Advanced Modeling and Simulation of Power Electronic Systems

Content

In the workshop, you will learn modeling techniques for offline simulations using PLECS software. You will work hands-on with some application examples. You will learn about solver settings, thermal modeling and create customized components. In addition to the technical aspects, the workshop offers an opportunity to know more about PLECS new features and development. The required PLECS software will be provided for the workshop.

Timetable

08:30	Registration
09:00	<ul style="list-style-type: none">● 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
10:15	Break
10:30	<ul style="list-style-type: none">● Solver Settings● Definition of stiff and non-stiff systems● Explicit and non-explicit solvers● Stability domain● Accuracy considerations, step size control● Proper handling of discontinuities, zero-crossing detection Exercise: Solver accuracy and settings

12:00	Lunch
13:00	<ul style="list-style-type: none"> ● Introduction to Thermal & Magnetic Modeling & Simulation ● Switching & conduction loss descriptions ● Combined electrical-thermal simulation ● Permeance Capacitance Analogy Model <p>Exercise: Thermal modelling of a buck converter</p>
14:30	Break
14:45	<ul style="list-style-type: none"> ● Overview of Real-Time Simulation Concept ● Hardware-In-Loop ● Rapid Control Prototyping ● Implementing real-time simulation by PLECS RT Box <p>Exercise: RT Box hand-on practices</p>
16:00	Q&A / End of Day

Participation

The course is free for participants covers workshop participation and documentation.

Please bring a laptop.

Language

The workshop will be held in English. The documentation will be in English.

Speaker

Mr, Min LUO, Field Application Engineer of Plexim GmbH

Date

14th December, Friday

Venue

Meeting room SR6D lab

172A Ang Mo Kio Ave 8, Singapore 567739 (beside Blk Q of NYP campus)

Singapore Institute of Technology