



**Tutorial Title:**

Power HIL: Enabling Flexible and Repeatable Testing of Power Electronics Systems in Close-to-reality Environment

**Organizer:**

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**Abstract:**

The growing market need for flexible and repeatable testing of power electronics systems in grid, automotive, aerospace and defense applications, has made power hardware-in-the loop (P-HIL) a very attractive test approach. With P-HIL, test voltages and currents are generated in user-configurable real-time models, enabling emulation of different operating environments for the physical system that is being tested. A single software-configurable P-HIL test platform can be used to test various systems in different test scenarios and operating environments. This is extremely beneficial because it provides high testing flexibility, reduces system cost, and accelerates product time-to-market. Enabling repeatable automated tests of power electronics systems significantly de-risks product development by reducing time needed for design iteration.

EGSTON Power Electronics is a leading manufacturer of high-performance P-HIL test and emulation platforms, ranging from 100 kVA to 1.2 MVA power. The COMPISO System from EGSTON Power Electronics is the most versatile P-HIL test and emulation platform currently on the market. With four-quadrant operation, 5 kHz large-signal bandwidth, several predefined operation modes and software applications for easier system use in different test scenarios, the COMPISO System is successfully serving the testing market since 2016.

This seminar will include the company introduction followed by an overview of P-HIL concepts and advantages of P-HIL approach in system testing. The COMPISO System emulation and test platform will be introduced, and its many advantages explained using several use cases as examples.