

**Report on Two Credit Course on Device Characterization
(01.04.17 , 02.04.17 and 08.04.2017 , 09.04.2017)**

Number of participants: 67

On **01.04.2017**, **Mr. Asutosh Dwivedi, Application Specialist, key sight Technologies** delivered a lecture on Introduction about Semiconductor Devices in the morning session. Students learnt to understand the characteristics, operation and limitation of Semiconductor devices. In the lab session, students simulated the characteristics of basic semiconductor devices and also verified with MULTISIM results. On **02.04.2017**, He delivered about DC-DC converters for automotive, aircraft and stationary applications. Students learnt about level switching behaviour of classic silicon and GaN devices.

On **08.04.2017**, **Mr. Asutosh Dwivedi** taught static and dynamic characteristics of power semiconductor devices. In the afternoon lab session, students found the device parameters for an n-channel MOSFET. From the parameters, They reproduced its I-V characteristics and compare them to SPICE. The characteristics was compared to the SPICE level 1 model. They also compared their data with data from the LabVIEW-driven data acquisition system.

On **09.04.2017**, He delivered on measurements in Devices. In afternoon lab session, Students learnt about the following:

- determining which region of operation the MOSFET is in depending on the values of V_{GS} and V_{DS}
- application of correct equations for I_D depending on the region of operation
- extraction of basic SPICE parameters from experimental

In addition, the summary of four days lecture was given to students.