

IEEE CASS Malaysia: Summer School on IC Design & Test

IEEE Circuits & Systems Society (CASS) Malaysia Chapter, IEEE SB Universiti Putra Malaysia (UPM) and Department of Electrical & Electronic Engineering, UPM have successfully conducted a Summer School for undergraduate and postgraduate students during the semester break between 1st July and 1st September 2015. The 2-month program were participated by 5 lecturers, 3 facilitators and 10 students while another 1-day program, Industry Invited Lecture, which was held on 26th August 2015 were participated by 3 invited speakers from Intelligent Circuit Engineering, MIMOS and Teradyne; and 31 participants which consist of engineers, undergraduate students, postgraduate students, and academicians.

Two weeks of lecture starting from 1st July till 14th July were delivered by Assoc. Prof. Dr. Roslina Mohd Sidek, Dr. Noor Ain Kamsani, Dr. Fakhru Zaman Rokhani, Dr. Izhal Abdul Halim, and Dr. Shaiful Jahari Hashim to give an exposure to the students on basic concepts of Standard Cell Library. The topics covered during the lectures were Design Environment, UNIX and Shell Programming, MOSFET and Model, Overview of Standard Cell Library, Full-Custom Design Flow, Schematic and Simulation, CMOS Circuits and Characteristics, Connecting Designers with Foundry, Layout and Verification, Layout Kung Fu For Standard Cell Library, Library Characterization and Automation, Library Creation, Design Automation, Library Qualification and ASIC Design. Apart from lecture, the participants were given projects to hone their IC design skill where they were being paired into 5 groups. 4 groups were given tasks to design layout of 7-track cells, 9-track cells, 12-track cells and sub-threshold cells. While another group was given a task to automate characterization process of the standard cell library. At the end of the project, the completed standard cell libraries were then verified using Synopsys tool and it was successfully being placed and routed in an ASIC design.

The participants also took part in ASQED Microelectronics Olympiad, an educational contest to spotlight engineering students and young engineers who are active in the field of microelectronics. The Olympiad consists of a written test covering a variety of topics related to digital and analog circuit design. The competition took place during the ASQED event on Aug. 4th at MIDA Sentral, Kuala Lumpur, Malaysia. Industrial visits to Silterra, Kulim Kedah and Intel, Penang were organized on 13th August. The visits provide an opportunity to the participants to experience fabrication and design processes in semiconductor industry; also a closer view on the real working environment as an engineer.

Industry Invited Lecture session was held on the 26th August at Golf Club, UPM. Topics discussed during the session were 'Standard Cell Library Qualification for Logic Implementation and Verification' by Sreedharan Baskara Dass from ICE, 'Standard Cell Library in Process Design Kit (PDK) for Digital and Analog Mixed Signal Design' by Muhamad Amri Ismail, from MIMOS and 'Characterization and Testing System on Chip & System in Package AC Interface' by Yeo Chiau Woon, from Teradyne.

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Group Photo