

2015 IEEE CASS Outreach Initiative on Summer School on IC Design & Test
Theme: Standard Cell Library

Date : 26th August 2015
Time : 9.00 am – 5.00 pm
Venue : Seminar Room, Golf Course,
 Universiti Putra Malaysia
Fee : Free (Student/IEEE Member) / RM10 (non-IEEE member)

Time	Summer School Industry Invited Lecture
8:00 – 9:30	Morning Break & Registration
09.30 – 11:00	Standard Cell Library Qualification for Logic Implementation and Verification <i>Sreedharan Baskara Dass, ICE</i>
11:30 – 13:00	Standard Cell Library in Process Design Kit (PDK) for Digital and Analog Mixed Signal Design <i>Muhamad Amri Ismail, MIMOS</i>
13:00 – 14:30	Lunch
14:30 – 16:00	Characterization and Testing System on Chip & System in Package AC Interface <i>Yeo Chiau Woon, Teradyne</i>
16:00 – 17:00	Tea Break & Certificate Giving Ceremony

Registration

<https://docs.google.com/forms/d/1KcsHP4EsvbCJbb0Zk-0vKgHBoS7Bij34S0ZU42FRH8/viewform?c=0&w=1>

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Sreedharan Baskara Dass received his B. Eng in Electronics & Computer Engineering from Universiti Pertanian Malaysia in 1995. Having worked as an application engineer from 1995 till 2000 at Trans-Dist Engineering, he was then appointed as a Application Consultant in 2000. Currently he is the Senior Application Consultant for the Intelligent Circuit Engineering, a company specializing in IC design & trainings. Sreedharan has been using EDA tools since early 90s while working on various design projects. He is very proficient in Verilog, VHDL and SystemVerilog. His expert knowledge is in Synopsys EDA tools and ASIC design. Sree has more then 20 years of experience in ASIC design field specializing in ASIC synthesis, static timing analysis, low power design, and physical implementation. Among his designs are USB chipsets, micro-controllers, wireless communications chips, low power custom processor for automotive applications. He has provided consultancies and conducted extensive trainings for the past 15 years. To date, he has trained engineers, lecturers and students from multiple institution and corporation, not only in Malaysia but also in Australia, India and Singapore.

Muhamad Amri Ismail is a senior engineer at MIMOS. He received his bachelor's degree in Communication and Computer Engineering from Universiti Kebangsaan Malaysia (UKM) and master's degree in Electrical Engineering from Universiti Teknologi Malaysia (UTM). His past experiences include research and development in semiconductor device model extraction for circuit simulations, characterization of statistical mismatch model, process and device simulations with Technology Computer Aided Design (TCAD) tool and qualification of Process Design Kit (PDK). He is currently works on the development and characterization of trench discrete power devices such as Schottky diode and HVMOS for efficient high power and high voltage design applications.

Yeo Chiau Woon received his Bachelor's Degree in Electrical Engineering from Michigan State University, USA. He has more than 15 years of experience in semiconductor career with Texas Instruments, Agilent Technologies, Eagle Test System and Teradyne where he has been involved in various aspects of semiconductor industry, design, R&D and test. He is also active in DIY audio where knowledge and experience learned from work/hobby enhance one's knowledge and skillset.

Organizers



This is the second summer school sponsored by IEEE Circuits and Systems Society Malaysia Chapter.

The theme for this year's summer school is Standard Cell Library.

Industry Invited Lecture is part of the Summer School on IC Design & Test.

**2015 IEEE CASS Outreach Initiative on Summer School on IC Design & Test
Theme: Standard Cell Library**

Date : 1st July 2015 – 1st September 2015
Venue : Faculty of Engineering, Universiti Putra Malaysia

Time	1st July 2015 (Wednesday)
09:00	Registration
09:15	Welcoming Speech <i>Assoc. Prof. Dr. Roslina Mohd Sidek</i> <i>Program Director</i>
11:00	Ice-breaking
11.30	Lecture 1 : Design Environment <i>Dr. Fakhru Zaman Rokhani</i>
13:00	Lunch
14:00	Hands-on: Unix and Shell Programming
Time	2nd July 2015 (Thursday)
09:00	Pre-Test
10.00	Lecture 2 : MOSFET and Model <i>Dr. Noor Ain Kamsani</i>
13.00	Lunch
14.00	Lecture 3 : Overview of Standard Cell Library I <i>Dr. Fakhru Zaman Rokhani</i>
Time	3rd July 2015 (Friday)
09:00	Lecture 4 : Overview of Standard Cell Library II <i>Dr. Fakhru Zaman Rokhani</i>
13:00	Lunch
14:00	Hands – On : Full-Custom Design Flow
Time	6th July 2015 (Monday)
09:00	Lecture 5 : CMOS Circuit and Characteristics I <i>Assoc. Prof. Dr. Roslina Mohd Sidek</i>
13:00	Lunch
14:00	Hands-On : Schematic and Simulation
Time	7th July 2015 (Tuesday)
09:00	Lecture 6 : CMOS Circuits and Characteristics II <i>Assoc. Prof. Dr. Roslina Mohd Sidek</i>
11.00	Lecture 7 : Connecting Designers with Foundry <i>Dr. Noor Ain Kamsani</i>
13.00	Lunch
14.00	Hands –On : Layout and Verification
Time	8th July 2015 (Wednesday)
09:00	Lecture 8 : Layout Kung Fu for Standard Cell I <i>Dr. Izhah Abdul Halin</i>
13.00	Lunch
14.00	Hands –On : Layout and Verification

Time	9th July 2015 (Thursday)
09:00	Lecture 9 : Layout Kung Fu for Standard Cell II <i>Dr. Izhal Abdul Halin</i>
13:00	Lunch
14:00	Lecture 10 : Library Characterization and Automation I <i>Dr. Fakhrol Zaman Rokhani</i>
Time	10th July 2015 (Friday)
09:00	Lecture 11 : Library Characterization and Automation II <i>Dr. Shaiful Jahari Hashim</i>
13:00	Lunch
14:00	Hands-On : Verification and Validation
Time	13th July 2015 (Monday)
09:00	Lecture 12 : Library Creation <i>Dr. Fakhrol Zaman Rokhani</i>
13:00	Lunch
14:00	Hands-On : Design Automation
Time	14th July 2015 (Tuesday)
09:00	Lecture 13 : Library Qualification <i>Dr. Fakhrol Zaman Rokhani</i>
13:00	Lunch
14:00	Demonstration on ASIC Design
Time	4th August 2015 (Tuesday)
09:00 – 17:00	ASQED Microelectronics Olympiad
Time	13th August 2015 (Thursday)
09:00 – 13:00	Plant Visit to Silterra, Kulim Kedah
13:00 – 17:00	Plant Visit to Intel, Penang
Time	26th August 2015 (Wednesday) – Summer School Industry Invited Lecture
09.30 – 11:00	Lecture 14 : Standard Cell Library Qualification for Logic Implementation and Verification <i>Sreedharan Baskara Dass, ICE</i>
11:30 – 13:00	Lecture 15 : Standard Cell Library in Process Design Kit (PDK) for Digital and Analog Mixed Signal Design <i>Muhamad Amri Ismail, MIMOS</i>
13:00 – 14:30	Lunch
14:30 – 16:00	Lecture 16 : <i>Yeo Chiau Woon, Teradyne</i>
16:00 – 17:00	Tea Break
Time	22nd July – 1st September 2015
09:00 – 17:00	Project Review

ABOUT THIS INITIATIVE

This initiative will give an opportunity to develop talents in the field of IC Design & Test focusing on System on Chip application through undergraduate students' engagement. The theme of the summer school is Standard Cell Library. The summer school is driven by the need for upgrading undergraduate skill and the need for generating standard cell libraries to be industry-ready talents particularly in IC design. This program is a 2-month program between July and September 2015 and is conducted at UPM. It focuses on the design, characterization and automation of the Standard Cell Library. This initiative is organized by IEEE Circuits and Systems Malaysia Chapter, System on Chip Research Group of UPM and IEEE Student Branch of UPM.

SPEAKERS

Roslina Mohd Sidek received B.Sc. degree in Electrical Engineering from the George Washington University, Washington D.C, USA in 1990 and joined Universiti Putra Malaysia as an academic member of Faculty of Engineering in the same year. She studied at the University of Southampton, UK from where she obtained the M.Sc. degree in Microelectronics Systems Design in 1993 and Ph.D degree in Microelectronics in 1990. She joined Universiti Putra Malaysia (UPM) as a lecturer in 1999. She is currently an associate professor in the Department of Electrical and Electronic Engineering, UPM. She establishes linkages with industry such as MIMOS, TMrnd, Intel, Silterra and Texas Instruments (TI) to strengthen her teaching and research. She was in Silterra and IC Microsystems for industrial internship. She is the director for UPM-Texas Instruments University Program on Analog Electronic Test and Product Engineering. Her research interests include Semiconductor Devices and Modeling, Integrated Circuit (IC) Design, Fabrication and Testing as well as Nanoelectronics.

Noor Ain Kamsani received a B.S. degree in Electrical & Electronics Engineering from Universiti Tenaga Nasional (2007) and the Ph.D. in Electronics Engineering from the University of Glasgow (2011). Her Ph.D research was on characterization of the effects of intrinsic parameter variations in digital systems using large statistical simulations into a standard cell library format. Prior to her Ph.D study, she was a design engineer at Intel Malaysia where her main responsibilities include designing and validating DFT features in chipsets. Currently she is a Senior Lecturer of Electrical & Electronics Engineering at Universiti Putra Malaysia (UPM) and a Senior Member of IEEE society. She has been active in the area of integrated circuits design and test for over 8 years and actively serving IEEE Circuits and Systems Society Malaysia Chapter as a Honorary Secretary and IEEE Student Branch UPM as a counselor. She is also the program manager for Texas Instruments - University Program on analog electronics test & product engineering at UPM. She has more than 19 publications in international conferences and journals. Her current research involves study of RFIC Design (RF Power Amplifier) and Intrinsic Parameter Fluctuation in Semiconductor Devices (advanced CMOS).

Izhal Abdul Halin was born on August 1, 1975 in Kuala Lumpur, Malaysia. In 1999, he received his Bachelors of Engineering with a Minor in Mathematics from the University of Hartford, CT, USA. He then obtained his Masters of Science in Microelectronics Engineering from Universiti Putra Malaysia in 2002 and he completed his D.Eng in Nano-Vision Engineering from Shizuoka University, Japan in 2006. He has served as an Engineer in Teras Technologies Pte. Ltd., Malaysia in 2000. He was also a Research Fellow in the Research Institute of Electronics, Shizuoka University, Japan in 2013. Currently he is lecturing at the Department of Electrical and Electronics Engineering in Universiti Putra Malaysia. His research interest is in CMOS VLSI circuits focusing on time delay circuits, DACs and image sensors. His other research interests include application of electronics in agriculture.

Shaiful Jahari Hashim is currently a senior lecturer in Department of Computer and Communication Systems Engineering, Faculty of Engineering, UPM. He received his PhD from Cardiff University, UK (2011), M.Sc from Universiti Kebangsaan Malaysia (2003) and B.Eng from University of Birmingham, UK (1998) in the field of Electrical and Electronics Engineering. His research interests are embedded system; cloud computing, Internet of Things (IoT) and non-linear wireless measurement system. His PhD research work on a novel digitized wideband load-pull system has been awarded in IEEE MTT-11 Contest on Creativity and Originality in Microwave Measurements. Part of his work was integrated into a commercial non-linear measurement system solution for designing next generation efficient and linear wireless power amplifier. He has published more than fifty research publications, two patents pending, two-copyrighted software and two Android Apps available from the Google Play Store. He was also a project manager for in-house WebEd Learning Management Systems that has been used by Universiti Putra Malaysia. He was also a consultant for Malaysian Government for a pilot project on Wireless Sensor Networks (WSN) for structure health real-time monitoring system.

Fakhrul Zaman Rokhani received the B.S. degree in electrical and mechatronic engineering from the University of Technology Malaysia, Johor, in 2001, and the M.S. and Ph.D. degree in electrical engineering from the University of Minnesota, Minneapolis, in 2004 and 2008 respectively. He was with MIMOS Malaysia for a stint period in 2001. He is currently a faculty member in the Dept. of Computer and Communication System Engineering, UPM. In 2010 he was a visiting scholar at the ASIC & Systems State Key Lab in Fudan University, China. In Jun 2010, he spent 14 months at Intel Penang Design Center as a Visiting Professor where he worked on designing the next generation chipset. His current research interests include low power and high-performance VLSI design, on-chip and off-chip bus coding and interconnect design. He teaches undergraduate and postgraduate level course covering computer architecture; embedded systems and design automation and physical design for system-on-chip. Dr. Rokhani was the recipient of scholarship award from the Malaysian government for his B.S., M.S., and Ph.D. degrees in 1997, 2003, and 2004, respectively. He was awarded travel grant support from ACM SIGDA to attend Young Faculty Workshop at DAC'12. He serves as a committee in the IEEE CAS Malaysia Chapter and was a Treasurer for the IEEE GOLD for 2010-2011. He serves as a chair for IEEE Consumer Electronics Malaysia Chapter in 2014. He serves on the technical program committees for IEEE ICCAS'13, APCCAS'10 and ASQED'09. He was the Publication chair for 2010 IEEE APCCAS. In addition, he has chaired many sessions at regional and international conference in the areas of VLSI design.