

## IEEE Asian Solid-State Circuits Conference, A-SSCC 2018

**Location: Shangri-La's Far Eastern Plaza Hotel (Tainan)**

**Date: November 5 - November 7, 2018**

Sponsored by IEEE SCS, IEEE Region-10 SCS Chapters



<http://www.a-sscc2018.org>



<http://www.ieee.org>

### Conference Theme: **Silicon Enabling Mobile Intelligence**

The miniaturized silicon technology enabled big success in the realization of software solutions such as machine learning, big data, virtual and augmented reality in the image and speech recognition, the medical diagnosis and the autonomous driving automobiles. The current software solutions, however, consume huge power by employing cloud computers along with many graphic processing units and a large amount of memory. Nowadays, the integrated circuit design community tries to develop efficient low-power mobile intelligence solutions by taking challenges in the design of digital and analog circuits, processor architecture, and system for compact IoT devices.

The IEEE A-SSCC 2018 (Asian Solid-State Circuits Conference) is an international forum for presenting the most updated and advanced chips and circuit designs in solid-state and semiconductor fields. The conference is supported by the IEEE Solid-State Circuits Society and will be held in Asia.

### Conference Program

The conference technical program includes **4 plenary talks, 1 panel discussion, 1 industry session, and 4 tutorials. The 86 regular papers are grouped in 16 sessions** covering analog circuits, data converters, digital circuits and systems, emerging technology and applications, memory, radio-frequency circuits, system-on-chip and signal processing, wireline and mixed signal circuits. The **Student Design Contest** will feature demos from the best student papers.

### Plenary Talks



**Dr. Kevin Zhang**  
VP, Business Development, TSMC, Taiwan

*“Circuit Design in Nano-Scale CMOS Technologies”*



**Dr. Nam Sung Kim**  
SVP, Memory Division, Samsung, Korea

*“Practical Challenges in Supporting Functions in Memory”*



**Mr. Seizo ONOE**  
CTA, NTT DOCOMO & President,  
DOCOMO Tech., Japan

*“Open the New World of 5G”*



**Dr. Yi Kang**  
Chief Scientist & SVP, UNISOC, China  
(Tsinghua Unigroup)

*“AI Drive Domain Specific Processor”*

### Panel Discussion

**“The Circuits and Systems for Mobile AI”**

*Moderator:* Marvin, National Tsinghua Univ., Taiwan

*Panelists / Position:*

1. **AI Trends Overview:** Marvin (National TH Univ)
2. **Digital will win:** Robert Chang (NCH Univ)
3. **Analog is the MUST:** JY Sim (Postech)
4. **Low power schemes for AI:** Kushida-San (Toshiba)
5. **AI and Memory:** Takeuchi-San (Chuyo Univ)
6. **FPGA vs ASIC:** Shouyi Yin (Tsinghua Univ)
7. **Software vs Hardware:** Leibo Liu (Tsinghua Univ)

### Tutorials

1. Nan Sun (University of Texas at Austin): **When SAR Meets  $\Delta\Sigma$  - A Tale of Two ADC Architectures -**
2. Shuenn-Yuh Lee (NCKU): **Wireless ECG Acquisition and Cardiac Stimulation SOCs for Body Sensor Networks**
3. Minoru Fujishima (Hiroshima University): **Terahertz CMOS Technology for Beyond 5G**
4. Kyomin Sohn (Samsung Electronics): **Memory System for Next Generation AI**

**Program at a Glance**

DAY 1: Nov. 5 (Monday)	
08:30-18:00	Registration (B2F)
09:00-10:30 (90)	Tutorial 1 (B1F)
10:30-10:50 (20)	Break
10:50-12:20 (90)	Tutorial 2 (B1F)
12:20-13:40 (80)	Break
13:40-15:10 (90)	Tutorial 3 (B1F)
15:10-15:30 (20)	Break
15:30-17:00 (90)	Tutorial 4 (B1F)
17:00-19:00 (120)	SDC Exhibition (B1F)      FPGA Demo (B1F)
18:00-19:30 (90)	Welcome Reception (B2F)

DAY 2: Nov. 6 (Tuesday)				
07:45-18:00	Registration (B2F)			
08:30-08:50 (20)	Opening Ceremony (B2F)			
08:50-09:35 (45)	P1 : Plenary Talk 1 (B2F)			
09:40-10:25 (45)	P1 : Plenary Talk 2 (B2F)			
10:25-10:50 (25)	Break			
10:50-12:30 (100)	Industry 2 Advanced Techniques for Industrial Applications		ETA 3 Intelligent Sensor and Imager Systems	
12:30-13:30 (60)	Lunch			
13:30-15:10 (100)	ACS 4 Power Converters and Sensors	FPGA 5 FPGA-based AI Computing	WLN 6 Optical Link and CDR	RF 7 Millimeter-Wave Transceivers and Terahertz Sensors
15:10-16:00 (50)	Break			
16:00-18:00 (120)	PD 8 : Panel Discussion (B2F)			
19:00-21:00 (120)	Banquet (B2F)			

DAY 3: Nov. 7 (Wednesday)				
07:45-12:00	Registration (B2F)			
08:30-09:15 (45)	P 9 : Plenary Talk 3 (B2F)			
09:20-10:05 (45)	P 9 : Plenary Talk 4 (B2F)			
10:05-10:30 (25)	Break			
10:30-12:35 (125)	ACS+DC 10 Analog and Data Converter Techniques	ETA 11 Technology and Circuit Techniques for IoT	MEM 12 Intelligent Memory System	DCS 13 Circuit Technologies for Security Enhancement
12:35-13:40 (65)	Lunch			
13:40-15:20 (100)	ACS 14 Inductive DC-DC Converters	DCS 15 Energy-Efficient Circuits and Architectures	WLN 16 Advanced Wireline Equalization	RF 17 Oscillators and Synthesizers
15:20-15:50 (30)	Break			
15:50-17:55 (125)	DC 18 (125) ADCs and Calibration Techniques	DCS+FPGA 19 (100) Multimedia and Signal Processing Hardware	SOC 20 (100) Intelligent Low-Power SoCs	RF 21 (100) Low-Power RF Transmitters and Receivers
17:55-19:30	Farewell Social Hour			

## Registration Fees

Category	Early Bird		Regular Registration	On-Site Registration
	Author Must register by Sept. 9, 2018	Non-Author On & Before Sept. 30, 2018	On & After Oct. 1, 2018	
Regular – IEEE Member	NT\$18000 (US\$600)		NT\$21000 (US\$700)	NT\$22500 (US\$750)
Regular – IEEE SSCS Member	NT\$16500 (US\$550)		NT\$19500 (US\$650)	NT\$21000 (US\$700)
Regular – Non Member	NT\$22500 (US\$750)		NT\$25500 (US\$850)	NT\$27000 (US\$900)
Student – IEEE Member	—	NT\$9000 (US\$300)	NT\$12000 (US\$400)	NT\$13500 (US\$450)
Student – IEEE SSCS Member	—	NT\$8250 (US\$275)	NT\$11250 (US\$375)	NT\$12750 (US\$425)
Student – Non Member	—	NT\$10500 (US\$350)	NT\$13500 (US\$450)	NT\$15000 (US\$500)
IEEE Life Fellow	—	NT\$9000 (US\$300)	NT\$12000 (US\$400)	NT\$13500 (US\$450)

## Tutorial Registration Fees (Free for all student attendees)

Category	1 Session	2 Sessions	Full Day (4 Sessions)
Regular	NT\$2700 (US\$90)	NT\$4500 (US\$150)	NT\$6900 (US\$230)
Student	Free	Free	Free