



## Participation Report

Gunma University  
Graduate School of Science and Technology  
Kobayashi Laboratory  
The Third Year of Doctoral Program  
Yifei Sun

Conference name: 13<sup>th</sup> International Conference on Application Specific Integrated Circuit  
(IEEE ASICON-2019)

Conference venue: Hotel Hilton Chongqing, Chongqing, China

Holding date: October 29 - November 1, 2019

### Schedule:

October 28: Take plane to Chongqing, China  
October 29: Study tour in Chongqing University  
October 30: ASICON-2019 Opening & Keynote Session & Parallel Sessions  
October 31: Keynote Session & Parallel Sessions  
November 1: Keynote Session & Parallel Sessions & Banquet  
November 2: Study tour in Chongqing City  
November 3: Back to Japan

Home page: <http://www.asicon.org/index.asp>

Publish papers: (1) 0392 EMI Noise Reduction and Output Ripple Cancellation for Full-Wave Type Soft-Switching Converter  
Authors: Yi-Fei Sun, Minhtri Tran, Yasunori Kobori, Anna Kuwana, Haruo Kobayashi  
(2) 0523 Pulse Coding Control Switching Converter with Adjustable Conversion Voltage Ratio Notch Frequency Generation in Noise Spectrum  
Authors: Yi-Fei Sun, Minhtri Tran, Yasunori Kobori, Anna Kuwana, Haruo Kobayashi

### 1. Conference overview

The 13<sup>th</sup> IEEE International Conference on ASIC (ASICON 2019) was held in Chongqing, China, during Oct. 29 – Nov. 1, 2019. IEEE ASICON is a well-known academic conference in the field of integrated circuits. It is held every two years and has a history of more than 20 years. The conference aims to strengthen academic exchanges in global, promote the development of integrated circuits, and provide excellent platform for the combination of production, education and research. The conference sponsored by IEEE and co-sponsored by IEEE Beijing branch, Fudan University, and Chongqing University. They are among the top Universities in China.

Nearly 300 experts and scholars from China, Japan, the United States, Switzerland and other countries and regions attended the conference to discuss the future development and application of the integrated circuit field. In this conference, oral report papers and posted papers acceptance

rate were 34.9% and 27.5%. Moreover 70 papers were invited submissions. Invited talks by inviting prominent teachers and scholars from abroad. There are including two papers from professor Kobayashi.



Conference venue: Hotel Hilton Chongqing



Opening ceremony

## 2. Program

15 people from Gunma University participated in this conference. Including 2 professors and 13 students in Kobayashi Lab. There are 17 oral presentations. Invited paper presentation takes 30 minutes: 25 minutes for talk and 5 minutes for question and answer. Regular paper takes 15 minutes or 12 minutes. Invited paper from professor Kobayashi were on October 30 and 31, oral presentation from Prof. Kuwana was on November 1. Other 14 oral presentations from students come from Gunma University were from October 30 to November 1.

**October 30 (Wednesday): Opening & Keynote session    Oral presentation    Poster session**

8:30            Opening Ceremony

9:00-9:45    Keynote Speech K1-1: Extending Moore's Law Scaling Through Integrated Materials Systems  
Dr. Sanjay Natarajan, VP, Applied Materials, USA

9:45-10:30   Keynote Speech K1-2: Implantable Brain Microdevices for the Treatment of Neurodegenerative Diseases  
Prof. Mohamad Sawan, Polytechnique Montréal, Canada, Westlake University, China

10:45-11:30   Keynote Speech K2-1: Systematic Design of Low-power Analog and RF CMOS Circuits  
Prof. Christian Enz, EPFL, Switzerland

11:30-12:15   Keynote Speech K2-2: AI search standards, chips and applications  
Dr. Lin Yang, Chief Scientist of Gyr Falcon Technology, Inc, USA

13:30-17:45   Oral presentation

17:45-18:45   Poster session (1)

Dr. Sanjay Natarajan from the United States did the open conference theme report. Adjunct Professor of West Lake University, Dr. Mohamad Sawan of the Montreal Institute of Technology, and Professor Christian Enz of the Swiss Federal Institute of Technology respectively gave a special report showing the research direction and current achievements in the field of integrated circuits.



Keynote speech



Invited presentation by Prof. Kobayashi

**October 31 (Thursday):**    **Keynote session**    **Oral presentation**    **Poster session**

8:30-9:15    Keynote speech K3-1: The Cognitive Edge  
Prof. Jan M. Rabaey, UC Berkeley, USA; CTO&CSTO, IMEC, Belgium

9:15-10:00 Keynote speech K3-2: ESD protection circuits for CMOS technology  
Dr. Teruo Suzuki, Socionext Inc., Japan

10:15-17:45 Oral presentation

17:45-18:45 Poster session (2)

17:45-18:45 Join Us @ IEEE CASS YP Session

I participated the Join Us @ IEEE CASS YP Session. In this session, president IEEE CAS Yong Lian introduced the IEEE circuits and systems society. And vice president IEEE CAS – regional activities and membership, Prof. Yoshifu Nishio introduced benefit of the IEEE and the CASS memberships. And I think it were very useful.

**November 1: Keynote Session**    **Oral presentation**    **Closing banquet**

8:30-9:15    Keynote speech K4-1: Neural Networks on Chip: From CMOS Accelerators to In-Memory-Computing  
Prof. Yu Wang, Tsinghua University, China

9:15-10:00    Keynote speech K4-2: Chip-Scale Wave-Matter Interactions: A New Frontier for RF-to-Light CMOS Sensing and Metrology Systems  
Prof. Ruonan Han, MIT, USA

10:15-17:45 Oral presentation

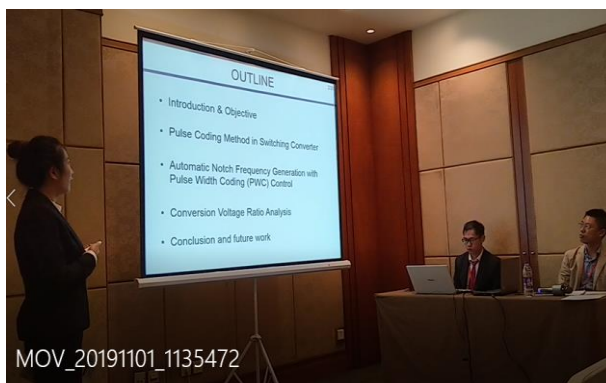
19:00 Closing banquet

My presentations were assigned on this day. On 10:45, the title of my paper [EMI Noise Reduction and Output Ripple Cancellation for Full-Wave Type Soft-Switching Converter] was presented, and the title of paper [Pulse Coding Control Switching Converter with Adjustable Conversion Voltage Ratio Notch Frequency Generation in Noise Spectrum] was presented on 11:45. Talk time was 12 minute, and question time was 3 minute. During the presentation I was a little bit nervous. The most feared session should be the question session. I realized the understanding of the question was not in place. And deeply realized the importance of English for students. In the future, I think I need more exercise and improve the level of English listening and speaking.





With Prof. Kuwana and students at the meeting venue



State of my presentation



Excellent student paper award



Show in banquet



Prof. Kobayashi and Prof. San with students



Prof. Kuwana with students

On the banquet, we met associate professor Hao San from Tokyo City University, and also met Mr. Jinghao Ye who is a student at Waseda University. I got to know him one year ago at System LSI joint seminar held at Chuo University. We had a lot of communication this time. The excellent student paper award was announced on the closing banquet. Mr. Abe and Mr. Hirai were chosen as excellent student paper. There are also performances of traditional Chinese programs at the banquet. This is also a good chance to understand Chinese culture. On the banquet I also had good communication with professors and students in Chinese top Universities, this was a rare opportunity.

### 3. Study tour in Chongqing University at October 29

Chongqing University was founded in 1929, located in Chongqing Municipality, an economic and industrial center in southwestern China and on the upper reach of Yangtze River. Chongqing University has 4 campuses, covering a total area of 350 hectares. Currently Chongqing University consists of six faculties in science, social sciences, humanities, engineering, built environment, information technology, offering 96 undergraduate programs, 115 master's programs, 42 doctoral programs, 19 professional degree programs. At present, the university hosts 47,000 students, including 25,000 undergraduates, 19,000 graduates, and over 1,800 international students. The university has a total of 5,300 faculty and staff members, among whom over 2000 are professors or associate professors.

We had an academic communication with the professors of the Microelectronics and Electronics academy in Chongqing University. Visited the laboratory and research environment. The environment of Chongqing University was very beautiful.



Communication at Chongqing University



Group photo in Chongqing University

### 4. Study tour in Chongqing City at November 2

The population of Chongqing is 30.22 million. As a Chinese international student, I feel like Chongqing has a large population density compared with other province. And Chongqing is a mountain city. We visited Chongqing China Three Gorges Museum. It provided education, conservation, research and research on cultural heritage and natural environment in Chongqing and the Three Gorges of the Yangtze River. It is mainly divided into the following exhibitions: Spectacular Three Gorges; Ancient Bund – Chongqing ancient history and Chongqing: History of the city – 20th century history. We also did Yangtze River Ropeway. The opening of the Yangtze River Ropeway was opened in 1987. Because I was able to move in 4 minutes one way thanks to the ropeway, the nickname is "Yamashiro Aerial Train". However, as time passed, a bridge was built on the river and finally the monorail opened. Its importance as a citizen's foot has declined and has become a tourist destination.



Group photo in front of the Three Gorges Museum



Photo taken from the ropeway



## 5. Experiences

In this conference and study tour I gained a lot of experiences. The participation of this conference is helpful to my future research and study. According to communication with professors and students and listen to research presentation by top scholars from all over the world, I not only had a better understanding of my own research knowledge, but also known other scope knowledge. The papers and reports have conducted in-depth discussions and research on international key and hot-spot frontier science and technology, providing a platform for exchanges between young scholars and older generations of scientists. Through this meeting, I have opened up my academic horizons, which is of great benefit to my future study work. I also realized the English skill is very important, and I will improve English conversation ability and spoken English in the future. According communication with other professors at the banquet, as an international student, it is very important to master three languages and it is very useful for future development.

Chongqing is a charming City. There are many delicious and spicy dish. The participation of this international conference was an unforgettable experience in life.



My favorite dish (1): Chongqing small noodles



My favorite dish (2): Chongqing hot pot

## 6. Acknowledgments

First of all, thank Prof. Kobayashi for giving me this rare opportunity. It makes me feel that every academic conference that I participate in is very meaningful. Thank you for your guidance and help. Thanks for Prof. Kobori who gives me a lot of guidance in my research and guidance in my slide and presentation. Than thanks for Prof. Kuwana who gave me guidance for accompanying and give us advice. At last, thanks for students from Kobayashi laboratory, it was a very valuable experience for me.



Group photo at the banquet