

CEATEC, one of the biggest consumer electronics shows in the world, where there are many interesting keynotes, symposia, and of course paper/poster presentations.

Before paper submissions, GCCE 2013 called for special session topic proposals related to up-to-date and cross-field topics. After the reviews, nine special sessions were

selected for inclusion in the final program.

More than 280 papers were submitted from 12 countries all over the world. It was very difficult for the TPC to select the most suitable and best papers for oral and poster presentations. Track chairs as well as the SS chairs rigorously reviewed the submitted papers in terms of breadth and depth by referring to the outside reviewers. The acceptance ratio was approximately 65.2%. This effort led to 184 accepted papers organized into 26 oral sessions and 56 poster presentations to be displayed in the poster session. The sessions cover a broad range of topics within consumer electronics. Key technologies were presented in depth, and future developments were discussed.



FIGURE 2. From left: Shingo Yamaguchi, vice TPC chair; Kazuyuki Kojima, vice TPC chair; Wen-Chung Kao, TPC chair; Tomohiro Haraikawa, conference chair; Sung-Jea Ko, CE Society (vice president of international affairs); Tomohiro Hase, founder and director; Takako Nonaka, conference chair; Steven Dukes, CE Society (vice president of conferences); Thomas Coughlin, CE Society (Future Directions Committee chair); and Stefan Mozar, CE Society (president).

—Taechan Kim, Wen-Chung Kao, Shingo Yamaguchi, and Kazuyuki Kojima, Technical Program Chairs and Vice Chairs of GCCE 2013

ISCE 2013: An Unforgettable Experience at ISCE 2013 to Further My Research

I attended the 17th International Symposium on Consumer Electronics (ISCE) 3–6 June 2013, in Hsinchu, Taiwan. The ISCE was sponsored by IEEE Consumer Electronics (CE) Society. It was referred to me by my colleague in Japan, Dr. Masaaki Fujiyoshi, who served as a Technical Program Committee member of the conference. I was not familiar with this conference because

I usually submit my papers to conferences sponsored by other IEEE Societies, such as the IEEE Signal Processing Society, IEEE Circuits and Systems Society, and IEEE Computer Society. Although I did not realize a straight connection between image processing and CE, I finally submitted part of my ongoing research on iris recognition, “Improved Iris Matching Technique Using Reduced Sized of Ordinal Measure of DCT Coefficients,” under the strong urging of Dr. Fujiyoshi. My field of interest was image processing at that time.

In addition to seminars and poster presentations, the ISCE 2013 was complemented by two highly recommended scientific tours on the first day of the conference: the first visit was to the Hsinchu Science Park, and the second was to the Industrial Technology Research Institute. There were overwhelming demonstrations and exhibitions of new and advanced technologies and applications shown to the attendees during these two visits. From solar cells to photovoltaic-integrated antenna technology, from electronics to intelligent taxis, and from

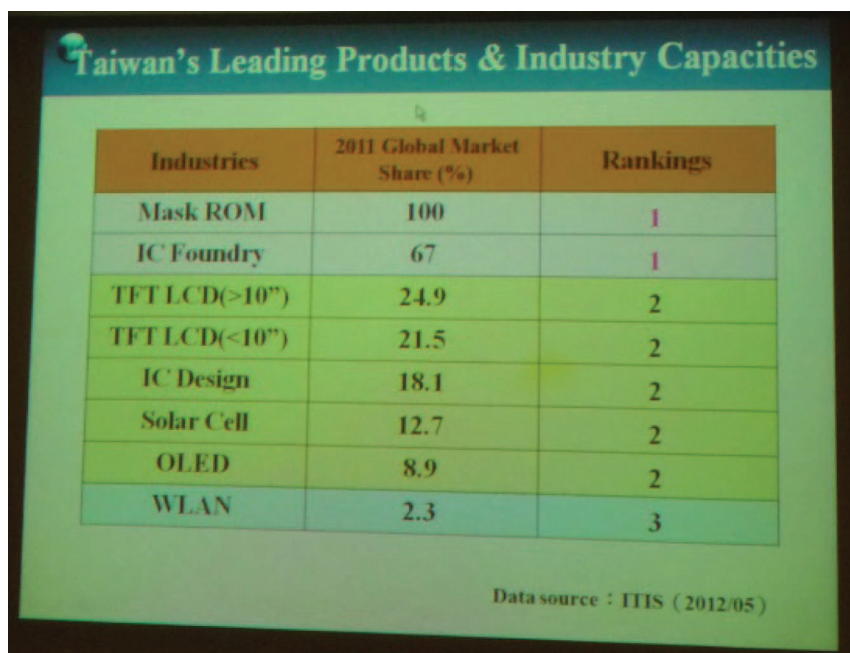


FIGURE 1. Taiwan is the leader in the world for IC fabrication and second for IC design.

machinery to intelligent automation, all were neatly displayed and illustrated by professional guides. With its impressive diversity of applications, a remarkable product foundation resides in the integrated circuit (IC), and Taiwan is the leader in the world for IC fabrication and second for IC design (see Figure 1). At this point, I began to think that it might be possible to collaborate with a researcher for designing ICs for my iris recognition algorithm, potentially followed by fabrication and marketing plans from Taiwan down the road.

Among the various applications of new, intricate technologies, Taiwan's CE capabilities go beyond the traditional space. Case in point, the synthesis of speaker technology with art was an eye-opening experience to us: we were shown with numerous fabrics, paintings, and displays, unexpectedly threaded and embedded with speakers. Music is not just delivered to the ears with stereo-surround sound but presented in daily room decorations, pleasing to the eyes, accenting the living space with grace and higher spiritual value—a full sensual approach for betterment of the consumer's leisure life (see Figure 2).

Prior to ISCE 2013, I have attended and presented my research papers at

nearly ten conferences sponsored by various IEEE Societies other than the IEEE CE Society. As with other conferences, it might be possible that you could present your paper in a room attended by only presenters of that session, especially if your turn was set as the last. This happened to me at ISCE 2013 because my paper was slated in a special session, "Emerging Technologies for Security, Safety, and Privacy," which was the last

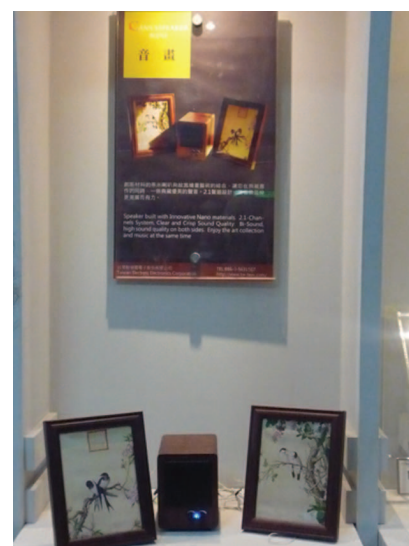


FIGURE 2. In Taiwan, new technology is used in nontraditional CE applications, such as the integration of speakers in art.

session on the last day (see Figure 3). Fortunately, the discussion among the presenters in this session was very fruitful, particularly for the presentation focused on tsunamis. The tsunami-related topic attracted me because my town in Indonesia, Banda Aceh, was severely hit by the Indian Ocean tsunami in 2004.

The scientific visits and the opportunity throughout ISCE 2013 to discuss topics with other presenters have



FIGURE 3. The presenters of the special session "Emerging Technologies for Security, Safety, and Privacy": from left, Dr. Yueh-Hong Chen (Far East University, Taiwan), Dr. Khairul Munadi (Syiah Kuala University, Indonesia), Dr. Fitri Arnia (Syiah Kuala University, Indonesia), Prof. Masaaki Fujiyoshi, (session chair; Tokyo Metropolitan University, Japan), Lih Chieh Png (Nanyang Technological University, Singapore), and Dr. Ming-Jheng Li (National Yang-Ming University, Taiwan).

broadened my knowledge. Furthermore, the ISCE 2013 banquet was very special, and it presented another unique experience for me. The banquet took place at the end of the second to last day of the conference in an exotic hotel in Hsinchu. Everyone enjoyed the entertainment group from Taipei; the exquisite, delicious food; and most importantly, the gathering itself, with all attendees from the conference.

For me, I felt a friendly atmosphere with a personal touch: for example, we had a little chat with Stephen D. Dukes, the vice president of conferences of the IEEE CE Society and Prof. Guo Jing-Ming from National Taiwan University of Science and Technology, who was the Technical Program chair of the

ISCE 2013. Furthermore, I had an extraordinary experience at the event when Dini Nuzulia Rahmah from my home country, Indonesia, won the First Paper Award of the ISCE conference. At all of the previous conferences I attended, presenters from Indonesia were hardly found, let alone winners of the First Paper Award. Yet, I experienced another heart-warming activity, when Dr. Narisa Chu from the United States gathered Rahmah and many of my Indonesian friends and other colleagues for a photo to commemorate this rare international event. I really appreciated Dr. Chu's support of female professionalism complimenting the effort and achievement of the young Indonesian winner. We all felt proud of

the occasion, and all participants of the conference also embraced it, both males and females.

On my flight back home to Indonesia, I was strongly motivated to further my research life. There appear to be so many opportunities, and I felt better prepared to face the challenge after ISCE 2013.

ACKNOWLEDGMENTS

Dr. Narisa Chu has encouraged me in reporting my personal experience at ISCE 2013 and contributed to this report with her thoughts.

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The Story Behind the First Paper Award

Dini Nuzulia Rahmah is a master's student at National Taiwan University of Science and Technology, Taipei, Taiwan, under the guidance of Prof. Kai-Lung Hua in the Video and Image Processing Laboratory. Her coauthored paper: "Photomagician: Controlling Point of Focus and Depth of Field on an All-Focused Image," won the First Paper Award in the International Symposium on Consumer Electronics (ISCE) 2013.

MY RESEARCH

For the last year and a half, my group has worked on refocusing and defocusing images. My particular interest in artistic photography motivated me to learn depth-of-field (DOF) and point of focus in the photography field to resolve issues as shown in Figure 1, where a photo is blurred in some regions but sharp or focused on some other object. Usually, a



FIGURE 1. This example image was taken by a DSLR camera with a large aperture (Photo courtesy of <http://www.hothdwallpaper.net/wallpapers/hd/618123/imagenation-photography>).

photographer creates this focus-defocus scene in the image using shallow DOF.

Shallow DOF can be obtained with large-aperture cameras, which are expensive high-end cameras such as digital single-lens reflex (DSLR) cameras. Moreover, DSLR cameras are not compact enough to be carried around. Our

goal thus becomes thinking about a solution to create synthesized blur on a single image without using the high-end, large-aperture camera.

A large data collection consisting of indoor, outdoor, people, and scenery photographs was gathered with the assistance of some senior students from our school, as shown in Figure 2.

The target of the algorithm is to create the focus-defocus effect on a synthesized image from an all-focused image. Prior research concentrated on refocusing and defocusing rather than using the focused image as an input image. Given a scene, the area is divided into some depth. As human eyes possess a perspective depth map, we allow the user to choose which area will be blurred and which area will remain sharp and focused. The result from our research is illustrated in Figure 3.

We conducted a survey, based on our experiments, with 100 photographers, asking them to compare two