

# IEICE Global Plaza no.10

— Monthly community plaza in English for students, faculties and engineers —

## Essay

### Globalization in IEICE and IEEE



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I have been abroad several times during this summer. Whenever I get on airplanes, I find that the seats are almost full most of the time. I feel that there are so many comings and goings of people. Although IT technology development enabled cyber meetings, face-to face meetings seems to be still important especially in business sectors. I've heard that after 9/11 attacks in 2001 the number of passengers dropped seriously, but this seems untrue, although the aftermath remains a severe security check in airports. The earth is getting smaller and globalization seems to be proceeding.

The IEICE started its Overseas Area Representative Program in 2003 and through this program, four overseas sections were created, which were Taipei, Singapore, Beijing, and Bangkok. Korea joined in 2005, when three sections were formed in areas of information, electronics, and communication. Currently, there are eight sections altogether. It means that the IEICE is aiming at developing more globalization in Asia. On the one hand, the IEICE moved forward issuing English transactions and in some of them the number of papers from non-Japan exceeds that of Japan. It might be a good indication of globalization.

Taking a look at the IEEE, it divided into ten Regions worldwide. The U.S comprises Region 1 to 6, Canada Region 7, Europe, the Middle East and Africa are Region 8, Latin America Region 9, and lastly Asia-Pacific is Region 10. Region 10 was formed in 1967 and covers Asia and Oceania. IEEE established in Jan 1963 when IRE (Institute of Radio Engineers) and AIEE (American Institute of Electrical Engineers) merged. It was agreed that the IEEE should continue the IRE transnational concept. Initially, Japan and India were the only existing Sections of Region 10. The first and second directors of the Region 10 were appointed from Japan and the election was called from the third director who was from India. Currently Region 10 has 74,000 members and the total number of Sections in Region 10 is 68 over 15 countries.

The number of all IEEE non-US membership is about 170,000, which accounts for 45% of the world membership. Taking the past growth rate of the IEEE membership into account, it is estimated that the non-US membership will be over 50% in five years. Considering a part of this emerging trend, the IEEE Beijing office was opened in 2007 in addition to the existing Asia-Pacific office in Singapore although the IEEE head office is located in New Jersey.

Each region director is a member of IEEE Board of Directors and also all members are allowed to run for any officer position in IEEE. The globalization is rapidly in progress within IEEE,

but there follows some criticism that globalization of IEEE is still not reaching its given potential.

It was fortunate that I was able to take a representative of IEICE Korea Sections during 2005-2008. Having attended overseas section meeting annually, I get the impression that IEICE needs to establish its own policy for globalization, in a good position to advance globalization in Asia.

As a reference, I'd like to mention that IEEE recently started to promote Humanitarian Technology Challenging Initiative, which studies how IEEE can contribute to solve humanitarian problems such as energy, food, water, environment, disease, natural disaster, population, and so on. These fields are multidisciplinary and collaborations among various areas people are required. In some of these fields, IEICE could take advantage of its position and make global collaboration along with overseas sections. It might strengthen the linkage among Asian academic community.

## Activity Reports from Overseas Sections

### Activities of Shanghai Section

**Ronghong Jin, Prof. Dr.  
Shanghai Jiao Tong University**

In the year 2007/2008, the IEICE Shanghai Section had organized two lectures. One was given by Prof. Xiaojing Huang, Wollongong University, Australia, with the title "Research into PHY and MAC Aspects of OFDMA-based Wireless Broadband Systems", on June 5, 2008. More than 25 participants attended it, including teachers and students from Shanghai Jiao Tong University and other universities in Shanghai (Fig.1).



Fig.1 IEICE sponsored lecture by Prof. Xiaojing Huang

Another was given by Dr. Zhining Chen, IEEE Fellow, Distinguished Lecturer of IEEE AP, with the title "Design Considerations of Antennas for MIMO Systems: -Antenna Engineering Perspectives", on Sept.25, 2008. More than 50 participants attended it, including teachers, researchers and students from universities and companies mainly in Shanghai and a few from Beijing and Harbin (Fig.2).

Before the lectures, I introduced briefly IEICE using the materials provided by the office of IEICE and invited participants to join it. The IEICE flag was hoisted in the meeting rooms during the lectures.

In the next fiscal year, we are going to invite one or two distinguished experts in the field of communication and electronics to give lectures and/or hold joint academic activities with IEEE/IET. Some candidates have been discussed, but no

one's schedule has been determined.



Fig.2 IEICE sponsored lecture by Dr. Zhining Chen

## Activities of Korea, Communication Section

**Chi-Moon Han, Prof. Dr.**  
**Hankuk University of Foreign Studies**

During 2008, the IEICE Korea, Communication Section organized a special workshop given by three experts on green IT area from Japan and Korea. This green IT workshop was held in conjunction with the 19th HSN (high speed network) Workshop, which was renowned workshop in communication field in Korea. The workshop was related to an important and rapidly growing green IT research area: energy and environmental technologies, new renewable energy policy, solar energy, USN (Ubiquitous Sensor Network) technologies for green IT, climate change and green IT, ubiquitous technology and green IT biz model. The invited speakers brought their valuable experience and most updated development in the field, to the attendees, in particular, many young researchers through their clear presentation. The special workshop is summarized as following:

Date of the special workshop: January 14, 2009

Venue: Phoenix Island, Cheju-island, Korea

Guest Speakers: 1 from Japan, 2 from Korea

Participants: about 60 (20 students and 40 engineers)

Sponsored by IEICE Korea, Communication Section in collaboration with the 19th HSN (high speed network) workshop  
Summary of Guest Speeches:

### <Opening Remarks>



The Opening Address "Status report on IEICE communications society" was given by Prof. Chul-Hee Kang, Korea University, Ex-Representative of IEICE Korea, Communication Section. He also introduced the current status on IEICE Communications Society as well as the whole IEICE to the attendees.

### <Guest Speeches>

The first speech "Trend in Energy and Environmental Technologies in ICT" was given by Dr. Tohru Maruno, Energy and Environment Systems Laboratories, NTT, Japan as summarized: against global warming and other environment problems heightens, many ICT researchers are doing much work in energy and environmental R&D to promote a safe, secure and sustainable society. To this end, it is required to accurately know the environment in the form of tangible information. Next, measures required for achieving specific reductions of environmental load must be implemented with the environmental information, and finally, the effect of those measures must be appropriately evaluated. This presentation overviewed the work for ICT from the following four main viewpoints so that people could lead safe, secure and sustainable lives.

(1) To construct an efficient energy infrastructure to support ICT systems

(2) To develop clean-energy technologies for ICT

(3) To develop sensors and environmental technologies to visualize and/or reduce environmental loads

(4) To develop environmental-impact assessment technology for



## ICT services



The second speech "Solar Energy and IT" was given by Dr. Young-Sun Kim, Principal Member of Engineering Staff, Advanced Solar Technologies, ETRI, Korea as summarized: the solar energy is very positive and evolves in many different forms. Most of us are familiar with solar

cells except the work of solar energy due to many different ways to create and store solar energy as listed below.

(1) Solar Cell – It is available on calculators with LCDs. Furthermore they can be used in many other ways through electricity generation with the sunlight.

(2) Solar Fiber – It is also a kind of photovoltaic device but it does not use the silicon which is used in solar cells. It looks like a solar tape made of titanium dioxide. It can be combined with building materials or even clothing.

(3) Solar Pond – It is made of three layers: the top layer as low density salty content, the middle layer as an insulating layer with salt which prevents the water from natural convection causing heat exchange and the bottom layer as a very high density salty content leading high temperatures. Thus, the solar energy can be reserved at the bottom of the pond. The solar pond is promising for the many opportunities.



The third speech "KT Mobile USN Technologies for Green IT" is given by Dr. Yoon-Kee Kim, Director, Future Technology Laboratory, KT, Korea as summarized: the energy saving and protection of environment for the future sustainable society are now global agenda for the next generation. The speech was

focused on the energy saving by IT/ICT technologies to the other Green IT/ICT activities focused on the energy saving of IT/ICT equipments. The real target is to establish ubiquitous digital sensor and actuator network environment and to encourage the technical innovation including new applications based on the network platform. Mobile USN technologies for green IT and computer monitoring of environment by KT project were introduced. The real goal of this project is to share every digital information over the world and achieve higher efficiency on social activities with the sustainable network infrastructure.

The administrative members of Korea, Communication Section in this fiscal year are:

Representative: Prof. Chi-Moon Han, Hankuk University of Foreign Studies, cmhan@hufs.ac.kr.

Deputy Local Area Representative: Dr. Choong-Seon Hong, Kyung Hee University, cshong@khu.ac.kr.

Secretary: Dr. Hyun-Ji Kim, hjkim1211@hufs.ac.kr

## Activities of Korea, Electronics Section

**Duk-Gyoo Kim, Prof. Dr.**  
**Kyungpook National University**

The activities of Korea, Electronics Section in 2008 are summarized as following:

In the year 2008, the IEICE Korea, Electronics Section organized two workshops.

The first workshop was "Colloquia on Recent Advances in Brain-Information Technology, Nanotechnology & Nanodevices" which was held on May 14, 2008 at EXCO Daegu, Daegu Korea and sponsored by the related institutions including KEA (Korea Electronics Association), Daegu City, IEEK and IEICE Korea, Electronics Section. The workshop was held with KES (Korea Electronics Show) Spring which was the first KES event held in local area (Fig.3).

The workshop provided Keynote speech session and two parallel sessions; Brain IT & Nano Technology. In keynote speech session, Prof. Takao Someya, University of Tokyo, Japan gave a lecture on "Molecular Nanotechnology &

Ubiquitous Electronics World" and Prof. Soo-Young Lee, KAIST, Korea



Fig.3 Proceedings for the first workshop in Daegu, Korea.

gave a lecture on "Artificial Brain : A Brain-Inspired Intelligent System Based on the Integration of Computational Neuroscience, Cognitive Science and Information Technology".

In Brain IT session, three international and two Korean scholars were invited, namely Prof. Kunihiro Fukushima, Kansai University, Japan, Prof. Daniel D. Lee, University of Pennsylvania, USA, Prof. Ren-Jye Dzen, National Chiao Tung University, Taiwan, Prof. Eung-Je Woo, KAIST, Korea, and Prof. Soo-Young Lee, KAIST, Korea. The topics of their talks were "Neural Network Model for Completing Occluded Contours," "Biologically-Inspired Sensorimotor Processing," "Ecology-City, Network Platform for Lifestyle of Healthy and Sustainability," "Electrical Impedance Imaging for Biomedical Applications," and "Unsupervised Feature Extraction, Supervised Feature Selection and Adaptation for Efficient Classification," respectively.

In Nano Technology session, three international and two Korean scholars were invited, namely Prof. Takao Someya, University of Tokyo, Japan, Prof. Moon-Ho Jo, POSTECH, Korea, Prof. Huei Wang, National Taiwan University, Taiwan, Prof. Juin Liou, University of Central Florida, USA, and Prof. Jong Ho Lee, KNU, Korea. The topics of their talks were "Organic transistor integrated circuits: Towards ambient electronics," "Bottom-up semiconductor nanowires, materials syntheses and device developments," "Current Status and Future Trends for Si and Compound MMICs in Millimeter-Wave Regime and Related Issues for System on Chip (SoC) and/or System in Package (SiP)," "ESD Protection for nano CMOS devices," and "Nano CMOS/Nanowire FET & 3D Device Modeling," respectively.

The second workshop was a Joint Seminar on Linear Drive and Its Application at Kyungpook National University, Daegu Korea which was held on January 16, 2009 and was sponsored by IEICE Korea, Electronics Section, IEEE Taegu Section, and IEEK Daegu-Gyeongbuk Branch. Professor Takafumi Koseki, the University of Tokyo, Japan was invited for giving a lecture on "Technical Trend and Activity of International Standardization of Rail-guided Public Transportation Driven by Linear Induction Motors" at the workshop (Fig.4). Three other Korean scholars were also invited and they were Dr. B. Shin, KIMM, Professor J. Chang, Yeungnam University, and Professor S. Yeom, Daegu University. The topics of three Korean scholars' talks were "Development of Korean Urban Maglev Train," "Development of High Efficiency GaN-based Light-emitting Diodes for the Realization of Various LED Applications," and



Fig.4 Prof.Koseki providing a lecture at the second workshop. "Low Resolution Facial Image Recognition Using Photon-counting Linear Discriminant Analysis," respectively.

At the workshop, the introduction of IEICE and the Section was given by Prof. Kim, Section Representative, about those organizations, activities and membership benefit, and visiting homepage was also encouraged.

Above two workshops were organized and steered by the committee chaired by Prof. Duk-Gyoo Kim, the representative of IEICE Korea Electronics Section.

## Activities of Korea, Information Section

*Chan-Hyun Youn, Prof. Dr.*

*Korea Advanced Institute of Science and Technology*

The activities of the IEICE Korea, Information Section had been managed by the Ex-Representative, Prof.Yong-Jin Park , Hanyang University, since Korea Sections commenced in 2005. He introduced the 2008 fiscal year activities of the Section on the occasion of his invited speech in General Session TK-2 "Trend of Electronics or Communications in Overseas Section" in 2009 IEICE General Conference at Matsuyama, in March 19, 2009 (See [http://www.ieice.org/eng/global\\_plaza/2009/05.html](http://www.ieice.org/eng/global_plaza/2009/05.html)). Hereby, the activities can be summarized as following:

The Section provided a workshop sponsored by IEICE Korea, Information Section, IEEE Seoul Section and BK21 Project on IT at Hanyang University, and entitled "Advanced Networking Technology Workshop" at Fusion Technology Center of Hanyang University, Seoul on November 28 in 2008. The number of participants reached 51.

The Workshop started with the Opening Address by Prof.Yong-Jin Park and two guest speeches followed it (Fig.5). The features are the delivery of Proceedings, display of IEICE publications at the reception.



Fig.5 Advanced Networking Technology Workshop at Hanyang University, IEICE Reception and Proceedings

The first guest speech entitled "R&D on Computer Graphics and Virtual Reality Technology in Japan" was given by Prof.Mitsunori Makino, Chuo University (Fig.6).

The second guest speech entitled "The Problems Facing Us in the Engineering Design Education" by Prof.Shoji Shinoda, Chuo University (Fig.7).





Fig.6 Guest Speech by  
Prof.Mitsunori Makino



Fig.7 Guest Speech by  
Prof.Shoji Shinoda

After the speeches, guest speakers and participants had opportunities of meaningful opinion exchange with dinner.

The Representative of Korea, Information Section was taken over from Prof.Yong-Jin Park to Prof.Chan-Hyun Youn, KAIST at the end of 2008 fiscal year of IEICE. If you have any comments, please contact Prof.Youn at [chyoun@kaist.ac.kr](mailto:chyoun@kaist.ac.kr).

## Useful Remarks

### Introduction of IEICE Transactions on Fundamentals, Japanese Edition

*Mitsunori Makino, Prof. Dr., Chuo University,  
Editor in Chief, IEICE Trans. on Fund., Japanese Edition  
Kiyoshi Nishikawa, Assc.Prof. Dr., Tokyo Metropolitan  
University, Secretary for the Edition  
IEICE Engineering Sciences Society*

As you know, IEICE Engineering Sciences Society publishes monthly Transactions on Fundamentals in both Japanese and English. Every year, the Society publishes 12 issues of Transactions in both. The Japanese Transactions has a longer history than the English one. Originally, the IEICE published reviewed papers on its journal in April 1936. We think it was an energetic age for electrical and communication engineering. For example, before the year TV broadcasting service kicked off in Europe. Over 30 years since that time, in January 1968, the IEICE decided to separate reviewed papers from journal articles, and we published the memorial 500<sup>th</sup> issue in August, this year.

Our Transactions have two categories of manuscripts, i.e., papers and letters. In papers, authors present new theories, new developments, and/or their consideration on the existing methods. The primary objective of letters, on the other hand, is to announce their research reports promptly. On the average we receive about 300 submissions per year and 100 to 200 are accepted and published. Since the first issue in 1968, almost 8,000 papers and letters have been published. Relatively, many papers are submitted by young members in graduate schools and industries. You can check innovative ideas from the papers.

In addition to the regular sections, we publish Special Sections (SSs) on specific research topics twice or three times a year. SSs published in the past three years are listed:

- SS on Blind Signal Processing and Its Applications (Vol.J92-A, No.5, 2009)
- SS on Papers Written in Japanese by International Students (Vol. J92-A, No.3, 2009)
- SS on New Developments on Nonlinear Acoustics (Vol.J91-A, No.12, 2008)
- SS on Image Media Quality (Vol.J91-A, No.6, 2008)
- SS on Intelligent Transport Systems (Vol.J91-A, No.1, 2007)
- SS on Quantum Information Processing (Vol.J90-A, No.5, 2007)

As the list shows, our publication provides the latest results on important topics in a wide variety of research fields of electrical, information, and communications engineering. Corresponding to electronic publication in recent years, we are planning to publish a new type of papers having some electronic contents such as video, audio, image, and computer programs.

You might feel frustrated at not being to read Japanese manuscripts even if you want to access to papers in regular or

special sessions. To settle this issue, we provide English abstracts of all the manuscripts published in the Japanese Transactions. We also provide figure and table captions in English, so that those who are unable to read Japanese also can follow the outline of the manuscripts and their contents.

Members can easily access the contents of Japanese Editions through IEICE Transactions On-line available at [http://www.ieice.org/eng/trans\\_online/index.html](http://www.ieice.org/eng/trans_online/index.html).

## APSITT 2010 will be held at Kuching, East Malaysia, in June 2010 IEICE Communications Society

Asia-Pacific Symposium on Information and Telecommunication Technologies (APSITT) was set up in Bangkok in 1993 and has been followed in many Asia Pacific countries. It is planned to put forward mutual encouragement and collaborative R&D of Information and Communication Technologies in Asia Pacific region, with the initiative of IEICE Communications Society.

Now, the 8th APSITT 2010 will be held at Kuching in Sarawak State, East Malaysia, on June 15-18 in 2010. It will be technically co-sponsored by IEEE Communications Society. The interested topics cover broad areas of information and telecommunication technologies. The important due dates are: Abstract due : October 15, 2009 (closed)

Final Camera-ready due: January 20, 2010 after the notification of acceptance around December 15.

Please see details at: <http://www.ieice.org/cs/in/APSITT/2010/>.

## APARM 2010 will be held in Wellington, New Zealand in December, 2010 IEICE Engineering Sciences Society

The 4<sup>th</sup> Asia-Pacific International Symposium on Advanced Reliability and Maintenance Modeling (APARM 2010) will be held in Wellington, New Zealand, on December 2-4, 2010. The theme of APARM 2010 is "Beyond the Traditional Reliability and Maintainability Approaches". APARM 2010 is an international symposium for the dissemination of state-of-the-art research and its practice in reliability engineering, maintenance and related issues in the Asia-Pacific region. The symposium was planned to bring together researchers, scientists and practitioners from the Asia-Pacific region and identify important and updated issues in the fields of reliability and maintainability, and to work together to find feasible solutions for these problems.

The symposium will cover all the key topics in reliability, maintainability, and safety engineering. It will provide an in-depth representation of theory and practice in these areas. Submissions from both industry and academia on all topics related to reliability modeling and design techniques for all kinds of systems are welcome. For more details, please visit the symposium website:

<http://msor.victoria.ac.nz/Events/APARM2010/APARM2010>.

Wellington, located at the southern tip of the North Island, is the capital city of New Zealand. The city has a beautiful harbour surrounded by the high hills which offer couple of excellent views. A number of national and international cultural events such as film, arts and wine festivals are held regularly. Participants can also enjoy the museums, art galleries, historical buildings and botanic gardens. For more information about Wellington, see the following website:

[http://www.wellingtonnz.com/about\\_wellington](http://www.wellingtonnz.com/about_wellington).

If you have any question, please contact Prof. Yu Hayakawa, Waseda University, one of Publicity Co-Chair of APARM2010.

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### ***Message from TFIPP Secretariat***

This issue is also delivered by a mail magazine “IEICE Global Plaza on Line” with more information covering the updated IEICE conference calendar and news of scholarships for students. It is free of charge and can be easily unsubscribed on demand basis.

We wish this mail magazine will help you and simultaneously provide a community where you can participate and communicate each other. Your constructive opinions are most welcome. For any questions or requests, please do not hesitate to contact Prof. Kenzo Takahashi, IEICE-TFIPP (Task Force for International Policy and Planning), at [global@ieice.org](mailto:global@ieice.org). Back numbers of this issue are available at the Homepage [http://www.ieice.org/eng/global\\_plaza/index.html](http://www.ieice.org/eng/global_plaza/index.html) .