

## 1. Overview of IEICE Beijing Section

With the rapid development of engineering science, communication, electronics, and information and systems in recent decades, the Institute of Electronics, Information and Communication Engineers (IEICE) ranks as one of the largest institutes of engineers in Japan. Currently, it has 10 sections nationwide and 12 international sections. IEICE initiated its Overseas Area Representative Program in 2003 in order to expand its academic activities to the world. IEICE Beijing Section was established at that time, as one of the first four IEICE overseas sections.

In Beijing, there are lots of universities and research institutes which are famous in the field of information and communication technology (ICT), including Tsinghua University (THU), Peking University (PKU), Beijing University of Posts and Telecommunications (BUP), Beihang University (BUAA), Beijing Jiaotong University (BJTU), Beijing Institute of Technology (BIT), Chinese Academy of Science (Institute of Information Engineering, Institute of Electrics, Institute of Microelectronics, Institute of Computing Technology, etc.), Chinese Academy of Engineering, etc.. The academic environment provides unparalleled advantages in organizing international academic activities.

The goal of IEICE Beijing Section is to promote the academic communication between China and Japan, and provide specific services to its members. First, it is going to invite distinguished professors and researchers

to deliver special lectures to introduce their advanced R & D achievements. Second, it will technically co-sponsor international conference, symposium, workshop or similar event. Third, it will promote the communication and collaboration among section members and with other sections. In addition, it plans to encourage young researchers and students to join IEICE overseas membership. We hope these activities can deliver updated and useful information to more researchers and students in China and let them understand the academic research in Japan and the role of IEICE; promote the internationalization of IEICE; open a window for the outside world which let them know more about the academic activities in China.

## 2. Organization of IEICE Beijing Section

Assembly of IEICE Beijing Section is composed of members of the section and representative office. Fig. 1 shows the four successive representative of IEICE Beijing Section. As the first representative appointed in 2003, Professor Zhisheng Niu of Tsinghua University has made a great contribution to the development of IEICE Beijing Section. He was named Fellow of IEICE in 2007 for his contributions on network engineering and IEICE globalization. Professor Jian Yang of Tsinghua University was appointed to serve as the second representative in 2007. Professor Tao Zhang of Tsinghua University was appointed to serve as the third representative in 2011. Professor Yongmei Sun of Beijing University of Posts and Telecommunications was appointed to serve as the forth representative in 2015. Currently, the representative office of IEICE Beijing Section also includes duty representative, treasurer and advisor board. A good organizational structure is an important guarantee for achieving the goal of IEICE Beijing

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Prof. Zhisheng Niu, THU  
(tenure: 2003-2007)



Prof. Jian Yang, THU  
(tenure: 2007-2011)



Prof. Tao Zhang, THU  
(tenure: 2011-2015)



Prof. Yongmei Sun, BUPT  
(tenure: 2015-2019)

Fig. 1 The four successive representatives of IEICE Beijing Section

Section.

### 3. Activities of IEICE Beijing Section

In the past 14 years, IEICE Beijing Section has made a lot of efforts to realize the goal described above. It has organized about 40 special lectures by inviting distinguished professors and researchers from the whole world to introduce their cutting-edge research achievements; technically co-sponsored nearly 20 international conferences, symposia, workshops or similar events; enhanced the communication among section members and with other sections by various activities, e.g., established the mailing list of section members, distributed I-Scover leaflets in international conference, and attended annual IEICE All Section Meeting. Besides these activities, another contribution of IEICE Beijing Section is to encourage and attract many researchers and students to join IEICE overseas membership. Currently, the number of IEICE overseas membership in China reaches to 1500, which is over 10 times more than that in 2003. Among them, nearly 300 memberships are in Beijing. These activities of IEICE Beijing Section greatly promoted the academic communication between China and Japan, and enhanced the internationalization of IEICE.

#### 3.1 Special Academic Lectures

As the most important activities of IEICE Beijing Section, we have organized and hosted about 40 special academic lectures by choosing hot topics and inviting highly-reputed speakers. The hot topics are mostly concerned with ICT, including advanced wireless networks, cutting-edge optical networks, next-generation Internet, intelligent information processing, Internet of Things, cloud computing, big data processing and service, artificial intelligence, etc.. The highly-reputed



Fig. 2 Special lectures held in Jan. 2017

speakers came from the universities and R & D institutes all over the world, including Japan (The University of Tokyo, Tokyo Institute of Technology, Keio University, Kyoto University, Osaka University, The University of Electro-Communications, Yokohama National University, Saga University, Niigata University, NTT Network Innovation Laboratories, Fujitsu Laboratories Ltd, KDDI Research, Inc., etc.), the United States (Columbia University, Illinois University at Chicago, Naval Research Laboratory, etc.) and Canada (University of Ottawa, etc.). Details of some special lectures are given as follows in chronological order.

- (1) On Jan. 12, 2017, Prof. Shigeyuki Akiba of Tokyo Institute of Technology and Dr. Masatoshi Suzuki from KDDI Research Inc. delivered lectures to IEICE members and students at BUPT, Beijing (Fig. 2). Prof. Akiba gave two speeches titled "Photonic Array Antenna for Beam Forming in Future Radio Access Network" and "Happiness Co-creation Society through 'Ishin-Denshin' Intelligent Communications". Dr. Suzuki introduced the Internship Program of KDDI Research Inc. Many attendees showed



Fig. 3 Special lectures held in Nov. 2015

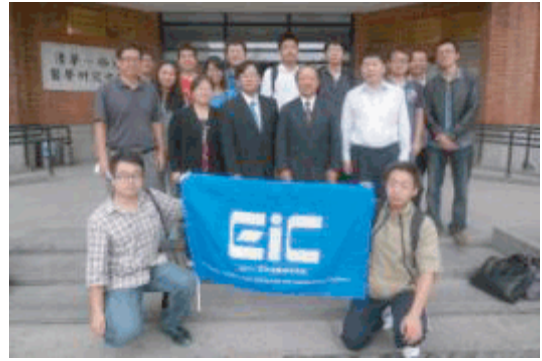


Fig. 5 Lecturers and participants in Sept. 2013



Fig. 4 Lecturers and participants in Nov. 2013



Fig. 6 Special lecture held in Oct. 2009

significant interest.

- (2) On Nov. 18, 2015, Prof. Tomonori Aoyama, Visiting Professor of Keio University and Emeritus Professor of The University of Tokyo, delivered two speeches titled "Evolution of Information Network to Handle Big Data" and "Academic Institute" at BUPT, Beijing (Fig. 3). The former one focused on hot issues of SDN and cloud computing, analyzing the current status and challenges. The later one introduced IEEE and IEICE for students and young professionals. There were more than 40 attendees, including IEICE members, domestic and international students from BUPT and THU.
- (3) On Nov. 12, 2013, Mr. Yutaka Miyamoto, Senior Distinguished Researcher and Group Leader of NTT Network Innovation Laboratories, delivered a lecture titled "High Capacity Optical Transmission Beyond 1 Pbit/s Using Crosstalk-managed Space Division Multiplexing" at BUPT, Beijing (Fig. 4). About 40 people attended the lecture and discussed technical issues with the speaker.

- (4) On Sept. 20, 2013, Prof. A. Ikeda of Kyoto University and Prof. M. Nakamura of Saga University gave special lectures on their research achievements at THU, Beijing (Fig. 5). The title of Prof. A. Ikeda's presentation is "Digital EEG Recording and Reading in Neurology Patients" and the title of Prof. M. Nakamura's presentation is "Automatic EEG Interpretation". EEG is a kind of neurobiological signal from human brain. It is a very important signal to extract human intention or diagnose the illness from human brain.
- (5) On Oct. 31, 2009, Dr. Jong-Sen Lee of Naval Research Laboratory, USA, gave a lecture titled "Imaging Filtering and Analysis" at THU, Beijing (Fig. 6). On Nov. 6, 2009, Prof. Wolfgang Martin Boerner of Illinois University at Chicago, USA, gave a lecture titled "Recent Developments of Airborne, High-altitude and Spaceborne Microwave POL-IN-SAR Sensors for Environmental Remote Sensing" at THU, Beijing.
- (6) On April 14, 2006, Prof. Henning Schulzrinne of Columbia University, USA, delivered a speech titled "Challenges for a Next-Generation Internet"





Fig. 7 Special lecture held in April 2006



Fig. 9 Special lectures held in 2003



Fig. 8 Special lecture held in March 2006

at THU, Beijing (Fig.7). In this talk, he highlighted the existing network challenges and called for a more structured development of network services that minimizes user-visible complexity, maximizes network predictability and allows new services to be deployed more quickly.

- (7) On March 14, 2006, Dr. Yukou Mochida, Advisor of Fujitsu Laboratories Ltd, delivered a speech titled "Ubiquitous Network and Services-with Views on Future Networks" at THU, Beijing (Fig.8). He shared his view on the future networks and various research directions in the world. More than 50 local IEICE members as well as students from local universities attended the lecture.
- (8) In 2003, Prof. Oliver Yang of University of Ottawa, Canada, gave two special lectures titled "Failure Control Schemes in Optical Network" and "Latest Development and Technologies in Wireless Communication", and Prof. Susumu Yoshida of Kyoto University gave a speech titled "Toward Beyond-3G Wireless Networks: Ad-Hoc

Networks and Space-time Transmission Techniques" at THU, Beijing (Fig.9). These three lectures have attracted more than 200 attendees from all over the country.

Due to the hot topics and the distinguished speakers, each special lecture attracted many attendees, especially young students. At the beginning of each lecture, Representative of IEICE Beijing Section introduced IEICE organization and encouraged the attendees to apply for the membership of IEICE. These impressed lectures have definitely promoted the communication between China and Japan, and enhanced the internalization of IEICE.

### 3.2 International Conferences/Symposia/Workshops

Another kind of important activity of IEICE Beijing Section is to co-sponsor international conference, symposium, workshop or similar event. Nearly 20 international events have been technically co-sponsored in the past 14 years, e.g., Asia-Pacific Conference on Communications (APCC), International Symposium on the History of Indigenous Knowledge (ISHIK), Asia Communications and Photonics Conference (ACP), and Asia-Pacific Conference on Synthetic Aperture Radar (APSAR). To co-sponsor international conferences, IEICE Beijing Section has worked closely with IEICE Headquarters, Chinese Institute of Communication (CIC), and Korea Institute of Communication Society (KICS) by delivering Call For Papers to section members and encouraging them to attend the conference.

Besides co-sponsoring international conference, we also pay attention to internationally cooperative post-graduate education. We technically co-sponsored International Project Based Learning (Int. PBL) course

annually carried out among Beijing University of Posts and Telecommunications (China), The University of Electro-Communications (Japan), and Hanyang University (Korea). PBL was designed to cultivate the academic ability and international outlook of the postgraduates based on three self-developed academic courses, including wireless network, robot control and digital signal processing. It is a very good chance for students to know research activities and academic organizations in Japan. Some students showed their interest to join IEICE.

By co-sponsoring the academic events above, we successfully enhanced the existence of IEICE in China and even all over the world through the attendees of the international events.

### 3.3 Improvement of the Section Membership

Attracting more and more researchers and students to join IEICE is an essential part of the contributions of IEICE Beijing Section. In the past 14 years, the number of IEICE overseas membership in China increased significantly from over 100 to nearly 1,500, among which, the number of overseas membership in Beijing increased from several dozens to about 300. Fig. 10 shows the structure of IEICE overseas membership of societies in China and Beijing, respectively. From this figure, we observe that the numbers of memberships of Information and Systems Society (ISS) and Communications Society (CS) are more than those of Electronics Society (ES) and Engineering Sciences Society (ESS), which is similar with the structure of IEICE membership of societies in total.

### 3.4 Other Related Events

Besides the activities above, IEICE Beijing Section has been devoting itself to provide more services to members by enhancing the communication among section members and with other sections. The following lists some details of several related events.

IEICE Beijing Section established the mailing list of section members in 2003, and updated it after that. The mailing list has been playing an important role for announcing special lecture and other information. It also provides a bridge for communication among section members.

IEICE Beijing Section has set up an IEICE booth at Tsinghua University (Room 3-326, FIT Building), where all the IEICE Transactions, Journals, as well as CD-ROMs are exhibited all the year (Fig. 11). By email,

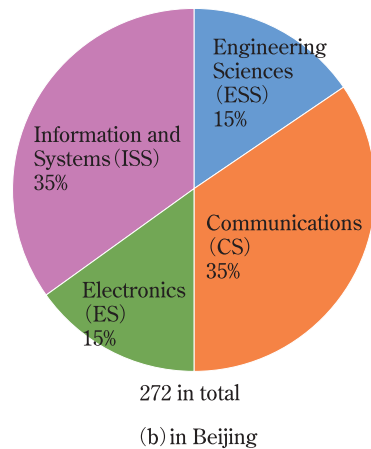
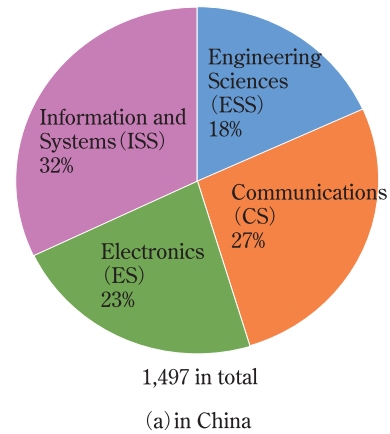


Fig. 10 IEICE memberships of societies (Feb., 2016)

airmail or fax, it provides copies of contents of IEICE Transactions and Journals to section members as well as Chinese students.

IEICE Beijing Section has also given a great deal to encourage the spread and the use of IEICE's new search engine called "I-Scover". First, Professor Kenzo Takahashi of IEICE headquarters visited IEICE Beijing Section to discuss the future vision of our section and the utilization of I-Scover on Sept. 24, 2013. Later, we attended the worldwide audio remote meeting on I-Scover organized by IEICE headquarters on Oct. 28, 2013. To promote the utilization of I-Scover, we proposed to disseminate I-Scover in international conference and applied for 400 leaflets of I-Scover from IEICE headquarters. These I-Scover leaflets were distributed in Asia Communications and Photonics Conference 2013 (ACP2013), which was a large-scale and influential conference (Fig. 12). Many ACP attendees showed their interest and took I-Scover leaflets. Furthermore, we organized postgraduate students to participate "I-Scover challenge 2013" by designing and



Fig. 11 IEICE booth at THU

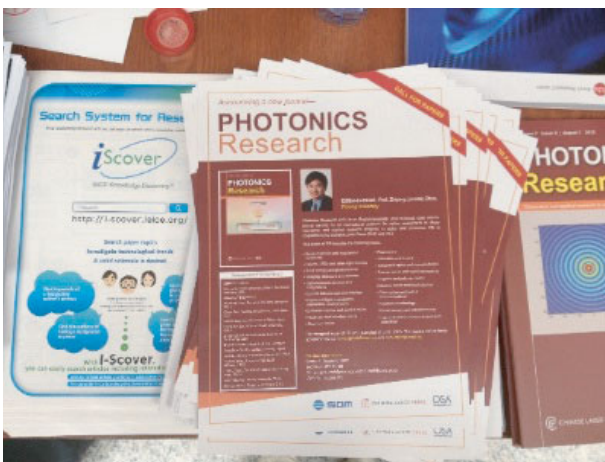


Fig. 12 I-Scover leaflet in ACP2013

developing APP related with I-Scover. We believe these activities definitely promote the spread and the internationally cooperative use of I-Scover in China and even all over the world through the attendees of ACP2013.

Each year, IEICE Beijing Section attends IEICE All Section Meeting ("Meeting of IEICE Overseas Section Representatives" from 2003-2013) to share its experience and learn from other sections. Beijing Section also regularly organizes a meeting to discuss what kind of activities should be conducted, e.g., planning a special issue on IEICE Transactions or Journals. From time to time, it exchanges opinions on academic activities with IEICE headquarters or Shanghai Section. In addition, I

was invited to write an article titled "Globalization Progress at Beijing University of Posts and Telecommunications", which was published on No. 58 of IEICE Global Plaza. We believe the article will encourage the young students to attend the future international activities.

#### 4. Future Prospects

From the abundant activities above, we can feel the rapid development and internationalization in the ICT related fields in China, and the strong existence of IEICE in China. With the continuous development of Chinese economy, the rapid progress of technologies and the globalization of academic activities, we believe IEICE Beijing Section will play a more important role in promoting the internationalization of IEICE. In the future, we are going to provide more services for members from the following several aspects: ① organizing special lectures every year to educate young researchers and students; ② technically co-sponsoring international conferences/symposia/workshop; ③ maintaining the mailing list of section members for the information exchange among members and enhancing the collaboration with other IEICE sections; ④ encouraging researchers and students to contribute to IEICE Transactions or Journals; ⑤ attracting more volunteers to join Representative Office and more people to join IEICE overseas membership.

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**Yongmei SUN** (Member)

Yongmei Sun received the B.E. and M.E. degrees from Xi'an Jiaotong University, China, in 1992 and 1995 respectively, and Ph.D. degree from the University of Tokyo, Japan, in 2006. Currently she is a professor at Beijing University of Posts & Telecommunications (BUPT). Her research interests include optical networks and sensor networks.