**IEEE Beijing Section Report 2017**

**PART A - SECTION SUMMARY**

**A.1 Executive Summary – (**Please follow the format given below)

* Section Executive Committee Member List (2018.1.1-2019.12.31)

|  |  |  |
| --- | --- | --- |
| Name | Roll | Email |
| Ruan Qiuqi | Chair | qqruan@bjtu.edu.cn |
| Zhou Mengqi | Vice Chair | zhou698@vip.sina.com |
| An Gaoyun | Secretary/Treasurer | an.gaoyun@gmail.com |
| Li Hua | Technical Activities Committee Chair | ihua@ict.ac.cn |
| Zhuo Li | Education Committee Chair | zhuoli@bjut.edu.cn |
| Hu Yinfu | Membership Development Committee Chair | huyinfu@hotmail.com |
| Wang Shengjin | Professional Activities Committee Chair | wgsgj@tsinghua.edu.cn |
| Qiu Xuejun | Humanitarian Technology Activities Committee Chair | xj7628@163.com |
| Liu Chenglin | Fellows Committee Chair | chenglin.liu@ia.ac.cn |
| Zhou Mengqi | Conference Committee Chair | zhou698@vip.sina.com |
| Ni Rongrong  Zhang Man | Student Activities Committee Chair  Student Activities Committee Vice Chair | rrni@bjtu.edu.cn  zhangman@nlpr.ia.ac.cn |
| Feng Lishaung | Women in Engineering Committee Chair | fenglishuang@buaa.edu.cn |
| Feng Jinjun | Industry Committee Chair | fengjj@ieee.org |
| An Gaoyun | Chapter Coordination Committee Chair | an.gaoyun@gmail.com |
| An Jianping | Proposal Committee Chair | an@bit.edu.cn |
| Jia Kebin | Education Accreditation Committee Chair | kebinj@bjut.edu.cn |
| Liu Yuanan | Awards & Recognition Committee Chair | yuliu@bupt.edu.cn |

* Section Highlights

1). Development of new members

2). Sponsorship of international and national conferences

3). Academic exchanges and communications

4). Various activities were held by Chapters and Student Branches

5). "WIE Rose Bloom" was held by IEEE WIE Beijing Affinity Group

* Major Events (International, National)

1). Totally 11 international conferences have been sponsored or co-sponsored by Beijing section:

|  |  |
| --- | --- |
| Meeting Title | Meeting Date |
| 2017 IEEE 2nd Information Technology, Networking, Electronic and Automation Control Conference | 2017/12/15 |
| 2017 International Conference on Progress in Informatics and Computing | 2017/12/15 |
| The IET 7th International Conference on Wireless, Mobile & Multimedia Networks | 2017/11/17 |
| 2017 IEEE International Conference on Medical Imaging Physics and Engineering | 2017/11/4 |
| The 5th International Symposium on Electromagnetic Compatibility | 2017/10/29 |
| 2017 11th IEEE International Conference on Anti-counterfeiting,Security,and Identification(ASID) | 2017/10/27 |
| 2017 IEEE International Conference on Unmanned Systems | 2017/10/27 |
| 2017 International Electrical and Energy Conference (CIEEC 2017) | 2017/10/25 |
| 2017 7th IEEE International Symposium on Microwave, Antenna, Propagation, and EMC Technologies | 2017/10/24 |
| 2017 IEEE 3rd Information Technology and Mechatronics Engineering Conference | 2017/10/3 |
| IEEE FENDT 2017 | 2017/6/22 |

* Major Chapter Activities

|  |  |
| --- | --- |
| Event Title | Event Date |
| Key Issues on Publishing Scientific Papers in IEEE and Hyperspectral Image Classification | 2017/12/30 |
| Non-recursive Controller Design Approach for Nonlinear Systems | 2017/12/29 |
| [Lecture] Research and application of space microwave remote sensing | 2017/12/13 |
| Design Alternatives for Reliable and Scalable Data Acquisition From IoT Domains | 2017/12/11 |
| VM2M: An Overlay Network to Support Vehicular Traffic over LTE | 2017/12/8 |
| Why Does Software Fail and What Should be Done About It? | 2017/12/7 |
| Data-driven Network Analytics in SDN-based Programmable Optical Networks | 2017/12/4 |
| Understanding Human Behaviors: from Pose Estimation to Action Recognition | 2017/11/22 |
| High-speed transceiver design for >100Gb/s broadband communications | 2017/11/17 |
| Optical MEMS Technologies for Infrared Spectroscopy, Sensing, and Imaging | 2017/11/17 |
| 2017 SAR in Big Data Era: Models, Methods and Applications (BIGSARDATA) | 2017/11/13 |
| Numerical Approach for Modelling Across Scales Infusion-Based Processing of Aircraft Primary Structure | 2017/11/8 |
| Advancing Neural Machine Translation with Phrase and Syntax | 2017/11/2 |
| Nanostructured Indium Tin Oxides and other Transparent Conducting Oxides: Characteristics and Applications in the THz Frequency Range | 2017/10/30 |
| Data-Driven Identification of High-Dimensional Additive Nonlinear Dynamical Systems | 2017/10/29 |
| 2017 IEEE Electron Device Mini-colloquium, Shenzhen | 2017/10/28 |
| Lecture in Tsinghua University, Beijing, China | 2017/10/20 |
| Recent Developments in Visible Light Communication - Applications and SoC Design | 2017/10/12 |
| Transparent Dielectric Resonator Antenna & Sharing of writing a technical paper, Lecture in Beijing Institute of Technology, Beijing, China | 2017/10/10 |
| Computational Intelligence in Condition Based Maintenance | 2017/9/23 |
| Model Predictive Control: from large-scale industrial applications to embedded systems | 2017/9/18 |
| Big Data Analytics in Large Scale Power System Economic Planning | 2017/9/15 |
| From Ubiquitous Connection to Immersive Experience: Automated Driving and Connected Vehicles for Modern Transportation Systems | 2017/9/1 |
| Two-Dimensional Layered Materials for Nanoelectronics - Interconnect and Transistor | 2017/8/29 |
| Split-Ring-Resonator Elements, Lecture in Tsinghua University | 2017/8/28 |
| Frequency Selective Surfaces with Fractal or Split-Ring-Resonator Elements, Lecture in Tsinghua University, Beijing, China | 2017/8/28 |
| Lecture in Tsinghua University, Beijing, China | 2017/8/23 |
| Seminar: Reverberation Chambers for Electromagnetic Measurements | 2017/8/23 |
| Physical layer security for wireless communication: a random beamforming approach | 2017/8/23 |
| IEEE China YWS(YP, WIE, Student) Congress 2017 | 2017/8/5 |
| Phase Change Memory | 2017/7/21 |
| Energy Efficient Resource Allocation for Non-Orthogonal Multiple Access Wireless Networks | 2017/7/12 |
| Creating Intelligence via Big Learning | 2017/6/29 |
| Android Malware Development on Public Malware Scanning Platforms: A Large-scale Data-driven Study | 2017/6/27 |
| Human attribute recognition by refining attention heat map | 2017/6/20 |
| Signal and Power Integrity ü Research in EMC | 2017/6/19 |
| Automation in interactive theorem proving | 2017/6/12 |
| Identifying SDN State Inconsistency in OpenStack | 2017/6/12 |
| Biometric-based Two-level Secure Access Control for Implantable Medical Devices | 2017/6/9 |
| Adaptive Asymptotic Control of Multivariable Systems Based on a One-Parameter Estimation Approach | 2017/6/9 |
| A Dual-Circular-Polarization Reflectarray with Independently Controlled Beams for Next-Generation High-Throughput Satellites | 2017/6/1 |
| Analyzing the Behaviors of Articulated Objects in 3D: Applications to Human and Animals, Lecture in Beijing Institute of Technology, Beijing, China | 2017/6/1 |
| Goal-representation Adaptive Dynamic Programming for Decision and Control | 2017/5/29 |
| Brain-inspired Intelligent Robotics: Integration of Vision, Motion and Planning | 2017/5/29 |
| Decision Problems and Methodologies in the Forth Party Logistics | 2017/5/29 |
| Collaborative Road Freight Transport | 2017/5/29 |
| Control Problems in Quantum Sensing | 2017/5/29 |
| Hybrid Control of Complex Intelligent Networks | 2017/5/28 |
| Advanced Nonlinear Output Regulation Techniques- Theory and Experimental Validation | 2017/5/28 |
| Data based methods for energy systems | 2017/5/28 |
| Challenges and Solutions in Automotive Powertrain Control Applications | 2017/5/28 |
| Convex Optimization | 2017/5/28 |
| Traffic Flow Control: Closing the loop | 2017/5/28 |
| When it is unnecessary to be optimal and enough to be greedy | 2017/5/28 |
| Distributed privacy-aware fast selection algorithm for large-scale data | 2017/5/26 |
| Energy Scheduling Based Remote Estimation in Cyber-Physical Systems | 2017/5/26 |
| Multiscale Data Analysis: Framelets, Manifolds and Graphs | 2017/5/22 |
| Three Recent New Developments with the Finite-Difference Time-Domain (FDTD) Method | 2017/5/19 |
| Design strategies for wearable sensor interface circuits ü from electrodes to signal processing | 2017/5/18 |
| Efficient Use of Space-time Clustering for Underwater Acoustic Communications | 2017/5/15 |
| An Overview of Data Centers | 2017/5/12 |
| Investigation of High Efficiency perovskite-based Solar Cells | 2017/5/8 |
| Signal Integrity Fundamental | 2017/5/7 |
| Outlook and Challenges of Electrostatic Discharge (ESD) Protection of Modern and Future Integrated Circuits | 2017/5/4 |
| Recent progress of semiconductor power devices | 2017/5/4 |
| Inverse Problems in Electromagnetics - Challenges and New Frontiers | 2017/4/25 |
| Inverse Problems in Electromagnetics - Challenges and New Frontiers | 2017/4/25 |
| Statistical Inference of Deleterious Genetic Variants from Functional and Population Genomic Data | 2017/4/24 |
| Network Architecture of 5GüKey Technology and Channel Model,Lecture in Beijing Institute of Technology, Beijing, China | 2017/4/21 |
| The Wonderful World of Nonlinearity: Modeling and Characterization of RF and Microwave Circuits | 2017/4/20 |
| From Ordinary to Extraodinary:2D Materials, Devices and System | 2017/4/13 |
| PET image reconstruction in the kernel space | 2017/4/11 |
| Resolving Distributed Knowledge | 2017/3/20 |
| Micro-ultrasound: routes to clinical practice | 2017/3/19 |
| Log Management: From Log Learning, Log Parsing, to Anomaly Detection | 2017/3/17 |
| On how the development of active harmonic load-pull is driving the development of RFPAs | 2017/3/14 |
| Present and Future Research Activity in III-V High Frequency Devices and Circuits | 2017/3/14 |
| On how the development of active harmonic load-pull is driving the development of RFPAs | 2017/3/14 |
| Workshops of HTS Power Systems and HTS Motors | 2017/1/8 |
| Fan-Out Wafer-Level Packaging and 3D Packaging | 2017/1/7 |
| Person Re-identification: Benchmarks and Our Solutions | 2017/1/4 |

* Major Student and Affinity Group Activities

IEEE China YWS(YP, WIE, Student) Congress 2017 was successfully held

* Awards

**A.2 Financial Report – (**Please follow the format given below)

* Summary

As submitted in the NetSuite System

* Any other financial activities

**PART B - ORGANIZATIONAL ACTIVITIES**

**B.1 Membership Development Activities**

* Total number of active members in the past 3 years.

7829

* Summary and evidence of work done to improve the value of membership, which leads to retention and growth of members

**B.2 Chapter Activities**

* Total number of Chapters in the Section

27

* Number of Chapters formed in the current year

3

* Number of active Chapters (Chapters who have reported required number of meetings during the year)

21

* Summary of Chapter activities (Chapter wise with attachment table/information)

**B.3 Professional and Continuing Education Activities**

Summary of continuing Educational activities including conferences, technical activities, training courses, and distinguished lecture programs with attachment table / information

**B.4 Students Activities**

* Total number of Student Branches in the Section

19

* Number of Student Branches formed in the current year

3

* Section level student activities (student congress, paper and other contests, awards etc)
* Number of active Student Branches (Student Branches who have reported required number of meetings during the year)
* Summary of Student Branch activities (Student Branch wise with attachment table/information)

**B.5 Affinity Group Activities**

* Young Professional (YP)

|  |  |
| --- | --- |
| Event Title | Event Date |
| Data-driven Network Analytics in SDN-based Programmable Optical Networks | 2017/12/4 |
| IEEE China YWS(YP, WIE, Student) Congress 2017 | 2017/8/5 |

* Women In Engineering (WIE)

**IEEE WIE Forum on “Career Planning towards Success for Female Engineering”**

The IEEE University of Chinese Academy of Sciences - Beijing Women in Engineering Student Branch Affinity Group (IEEE WIE UCAS SB AG) held the “Career Planning towards Success for Female Engineering " on March 8, 2017 at the Center for Research on Intelligent Perception and Computing, CASIA, Beijing.

Young female researchers and engineers are usually going through more pressure at work as well as in family. The forum is to inspire women engineers to be passionate and confident in pursuit of the success of career and enjoy better life every day.

Ms. Lan Wang from IEEE China office give a talk on this forum and Dr. Seyed Rashid Fallah Shamsi also gave a great talk with the topic “Sceince & Technology Parks, and Business Startups!” in the forum. Attendees shared their experiences and feelings on how to do research, how to design a good resume for job hunting and how to choose the work for living. It was a great time for brain storm and all attendees enjoyed very much in the discussion.

**"WIE Rose Bloom" was held by IEEE WIE Beijing Affinity Group**

On the afternoon of April 18, "WIE Rose Bloom" IEEE WIE Beijing Affinity Group inaugurated at the meeting room of IBM China Research. Nearly 100 female elite from academia, industry and government participated in the event.

First, Ms. Yonghua Lin, the chair of WIE Beijing AG and Ms. Jing Dong, the WIE committee chair of IEEE Region 10 inaugurated the ceremony. Ms Sophie Vandebroek, IBM Research COO, IEEE Fellow, Ms. Zhiling Yi, Chief Scientist, China Mobile, Professor Yuanchun Shi, Professor, Director of HCI& Media Integration Institute, Tsinghua University, Ms. Lan Wang, the IEEE China Office witnessed the unveiling.

Next, Ms Vandebroek, Ms. Yi, Ms. Shi respectively gave the keynote speech from their own experience to introduce the latest industry development trends, innovation, workplace culture, especially as a female leader, sharing a lot of stories of their career development, brought a lot of inspiration to audience. A followed panel about “Dialogue with Female Engineers” mobilized the audience together to explore careers, family, education and other hot topics.

Finally a public welfare project "Deep Breath initiative” officially launched by WIE Beijing AG. This project aims to share indoor air quality (PM2.5,PM10, formaldehyde, benzene) actual data through the public participation, to give personalized recommendations of indoor activities, indoor air quality forecasting and other functions.

* Life Member

**B.6 Awards & Recognition Activities**

* Award constituted by the Section
* Please list all Awards and Recognitions received by the Section, and members in the Section, from R10 and IEEE HQ during the year 2017

**B.7 Communication Activities (Newsletter, Home Page, E-mail etc.)**

* Newsletter (name and number of issues in the year)
* Home Page of the Section (give the URL and how often it is updated)
* Other means of contacts with Section members including social media

**B.8 Industry Relations**

* Membership growth and retention
* Activities for/with industrial members

**B.9 Humanitarian Technology Activities**

* Humanitarian Technology related activities supported by the Section including collaboration with other OUs.
* SIGHT Activities

**B.10 Community Activities**

* IEEE Social activities (Family day, IEEE day, Engineers Week)”

**PART C - OTHERS**

**C.1 Special Events**

* Please briefly describe the importance of special events and the outcomes achieved
* Funding secured from the IEEE and external sources including sponsorships

**C.2 Relationship with National and International Societies and Non-Government Organizations (NGO)**

* Nature of relationship and details of any formal agreement signed
* Details of joint activities
* Benefit to IEEE members (for example discounts, access to technical information etc.)
* Benefit to Section (for example help in membership development, venue facilities, cost saving etc.)

**C3. Collaboration with other IEEE Sections**

* Support extended to neighboring Sections
* Joint activities with any other Section

**C.4 Support extended to Sub-sections & Society Chapters within the Section**

* Support extended for organising technical, educational and professional activities
* Joint activities for membership development
* Support extended for the formation of a Sub-section or transition of a Sub-section into a full Section

**C.5 Best Practices of your Section (which you would like to share with other Sections for the benefits of members)**

**C.6 Problems anticipated and suggestions for solutions, if any**

**PART D - GOALS AND PLANS**

**D.1 Continuation of project/activity in progress and their implementation  
plans**

**D.2 Goals and Future Plans**

Our goal is to develop section members smoothly up to 10,000 in the near future and serves our members better by more academic activities, including conferences, workshops, seminars, visit exchanges etc.

**D.3 Any innovative ideas to make IEEE more creative and value added for sustaining the membership retention and recruitment goals.**

**D.4.  Business Plan for Sustainable Growth and Financial Stability.**