

2016/12/22-2016/12/22 , Impact of Wide Bandgap Semiconductor Devices to Power Electronics Designs and Applications

5. Li- Shen Fu , 2016/12/23 , Pragmatic innovation and strive for excellence ,

A.1.4. Major Chapter Activities

In 2016, the AP Tainan Chapter was very active in organizing technical activities. "IEEE 5th Asia-Pacific Conference on Antennas and Propagation" was held on July 26, 2016 and resulted in a very successful activity with around 280 attendances. Further in 2016, AP Chapter held 6 more technical activities. AP Chapter Chair, Prof. Shun-Yun Lin, worked hard to apply for support from IEEE AP Society, and thus AP Tainan Chapter was awarded 2016 Best Chapter Awards by AP Society.

The C16 Tainan Chapter co-organized the 27th VLSI Design and CAD Symposium at 85 Sky Tower Hotel, Kaohsiung, Taiwan on Aug. 02-05, 2016. There were more than 1000 attendees, including professors, IEEE members, students and local professionals in Taiwan attended this VLSI 2016. The theme of the conference is "Showcases of Intelligent Electronics", which is a showcase for the forward-looking technology, training and achievements of the integrated circuit design in Taiwan. To this end, in the feature speech (Keynote Speech and Invited Talk), we invited experts of the field of semiconductor industry and academy, to introduce the world trend, challenges and achievements of intelligent electronic era.

The CAS004 Tainan Chapter co-organized the 2nd Taiwan and Japan Conference on Circuits and Systems (TJCAS 2016) on July 31 to August 2, 2016, at National Cheng Kung University, Tainan, Taiwan. The objectives of TJCAS were to provide a forum for the exchange on the latest results related to circuits and systems and to enhance and/or develop various levels of cooperation between Taiwan and Japan. Papers describing original works in all aspects of circuits and systems were invited.

A.1.5. Awards

2016 was the sixth IEEE Tainan Section Annual Awards which consists of 8 different awards. Following winners were selected from 27 nominees after thorough review by 2 Awards Chairs and 5 reviewers.

Best Master Thesis Award - No award given

Best Ph.D. Thesis Award - Kai-Wei Hu and Hsin-Chih Kuo

Best GOLD Member Award - Zong-Xian Lin and Ing-Chao Lin

Outstanding Technical Achievement Award - Jung-Chuan Chou, Shyh-Jier Huang and Saou-Wen Su

Best Service Award - No award given

IEEE Tainan Section Macronix Award - Chun-Wei Hsu

IEEE Tainan Section Himax Award - Tai-Haur Kuo

IEEE Tainan Section Delta Award - No award given

A.2. Financial Report

Tainan Section supported all programs and activities at both the section and chapter levels in 2016. To encourage and promote student activities, Tainan Section provided budget for supporting Conferences. In 2016, the income was TWD 1120,361 and the expense was TWD 777,102. Thus the final balance is TWD 1975,674 as of December 31, 2016.

PART B - ORGANIZATIONAL ACTIVITIES

B.1. Membership Development Activities

B.1.1. Total number of active members in the past 3 years:

| Grade | 2014 | 2015 | % Change | 2016 | % Change |
|------------------|------------|------------|---------------|------------|---------------|
| Life Fellow | 0 | 2 | 200.00% | 2 | 0.00% |
| Fellow | 16 | 14 | -12.50% | 16 | 14.28% |
| Life Member | 0 | 0 | - | 1 | 100.00% |
| Senior Member | 98 | 104 | 6.12% | 112 | 7.69% |
| Member | 536 | 520 | -2.99% | 531 | 2.11% |
| Associate Member | 20 | 13 | -35.00% | 12 | -7.69% |
| Affiliate | 27 | 27 | 0.00% | 20 | - |
| Graduate/Student | 182 | 190 | 4.40% | 173 | -8.94% |
| TOTAL | 879 | 870 | -1.02% | 867 | -3.44% |

B.1.2. Summary and evidence of work done to improve the value of membership, which leads to retention and growth of members

Recruiting new student member is one of the main focus of Tainan Section. We provided subsidies for the student member first year with half membership fee and supported selected student in attending international conference.

Besides, we opened all the activities held by the section or chapters to non-member participants under the consideration of letting more people know IEEE by providing information on new technologies in every specialized research area. In 2016, we had 1,817 members and 6,066 nonmembers who participated in Tainan Section's activities.

B.2. Chapter Activities

B.2.1. Total number of Chapters and Affinity Groups in the Section

Currently there are 15 Chapters, 1 Council Chapter, 2 Affinity Groups, and 2 Student Branches in the Tainan Section. The detailed information is as follows:

1. Antennas and Propagation Society Tainan Chapter / Shun-Yun Lin
2. Broadcast Technology Society Tainan Chapter / Chih-Peng Li
3. Computer Society Tainan Chapter / Pao-Ann Hsiung
4. Circuits and Systems Society Tainan Chapter / Lih-Yih Chiou
5. Computational Intelligence Society Tainan Chapter / Chang-Shing Lee
6. Communications Society Tainan Chapter / Wern-Ho Sheen
7. Electron Devices Society Tainan Chapter / Wen-Kuan Yeh
8. Engineering in Medicine and Biology Society Tainan Chapter / Kuo-Sheng Cheng
9. IEEE Young Professionals Tainan Chapter / Ing-Chao Lin
10. Information Theory Society Tainan Chapter / Trieu-Kien Truong
11. Microwave Theory and Techniques Society Tainan Chapter / Ching-Wen Tang
12. Nanotechnology Council Tainan Chapter / Yu-Cheng Lin
13. Systems, Man, Cybernetics Tainan Chapter / Jyh-Horng Chou
14. Signal Processing Society Tainan Chapter / Chuan-Yu Chang
15. Solid-State Circuit Society Tainan Chapter / Shuenn-Yuh Lee
16. Vehicular Technology Society Tainan Chapter / Meng-Hsun Tsai
17. Women in Engineering Tainan Chapter / Shu-Mei Guo
18. Sensors Council Chapter Tainan Chapter / Teen-Hang Meen
19. National Cheng Kung University Student Branch / Chi-Ray Huang
20. National Sun Yat-sen University Student Branch / Bin-Han Liu

B.2.2. Chapter Activities

| Chapter Name | Administrative | Nontechnical | Technical | Sub-Total |
|----------------------|----------------|--------------|-----------|-----------|
| Tainan Section | 4 | | 6 | 10 |
| AP03 | | | 7 | 7 |
| BT02 | | | 6 | 6 |
| C16 | | | 5 | 5 |
| CAS04 | 1 | 1 | 10 | 12 |
| CIS11 | | | 3 | 3 |
| COM19 | | | 4 | 4 |
| ED15 | | 1 | 1 | 2 |
| EMB18 | 1 | | 3 | 4 |
| IT21 | | | 2 | 2 |
| MTT17 | | | 2 | 2 |
| NANO42 | | | 2 | 2 |
| SEN39 | | | | 0 |
| SMC28 | | | 2 | 2 |
| SP01 | | | 5 | 5 |
| SSC37 | | 2 | 3 | 5 |
| VT06 | | | 8 | 8 |
| Women in Engineering | | | 4 | 4 |
| Young Professionals | | | 1 | 1 |
| Total | 6 | 4 | 74 | 84 |

| # | Meeting Title | Meeting Date | Total | Member | Non-Member | Event Category |
|----------------|--|--------------|-------|--------|------------|----------------|
| Section | | | | | | |
| 1 | Officer Meeting | 2016/06/15 | 23 | 20 | 3 | Administrative |
| 2 | Regular meeting | 2016/10/06 | 23 | 20 | 3 | Administrative |
| 3 | Regular meeting | 2016/12/23 | 23 | 20 | 3 | Administrative |
| 4 | Speech | 2016/08/19 | 40 | 5 | 35 | Technical |
| 5 | Speech | 2016/11/09 | 50 | 10 | 40 | Technical |
| 6 | Speech | 2016/12/22 | 50 | 5 | 45 | Technical |
| 7 | Speech | 2016/12/13 | 67 | 12 | 55 | Technical |
| 8 | Annual meeting | 2016/12/23 | 86 | 76 | 10 | Administrative |
| 9 | 2016 IEEE International Conference on Advanced Materials for Science and Engineering | 2016/11/12 | 200 | 50 | 150 | Technical |
| 10 | 2016 IEEE International Conference on Applied System Innovation | 2016/05/28 | 450 | 100 | 350 | Technical |
| AP03 | | | | | | |
| 1 | RFID radio frequency identification system | 2016/01/17 | 22 | 2 | 20 | Technical |
| 2 | Terminal Device Antenna Technology | 2016/09/23 | 50 | 10 | 40 | Technical |
| 3 | B4G/5G Advanced RF Front-End and Antenna System Solution | 2016/11/11 | 50 | 10 | 40 | Technical |
| 4 | B4G/5G advanced RF Front-End | 2016/09/24 | 50 | 10 | 40 | Technical |
| 5 | Terminal Device Antenna Technology | 2016/11/11 | 50 | 10 | 40 | Technical |
| 6 | Workshop on Electromagnetics-A Bridge to the Future (EM Education Initiative-Winter Program) | 2016/01/28 | 180 | 30 | 150 | Technical |
| 7 | IEEE 5th Asia-Pacific Conference on Antennas and Propagation | 2016/07/26 | 280 | 180 | 100 | Technical |

| BT02 | | | | | | |
|--------------|---|------------|------|-----|-----|----------------|
| 1 | Wireless Prototyping Fundamentals (LabView Communication + USRP RIO) | 2016/02/17 | 30 | 5 | 25 | Technical |
| 2 | Training Course on LabVIEW Core 1 | 2016/02/01 | 40 | 10 | 30 | Technical |
| 3 | Invited speech | 2016/03/15 | 40 | 10 | 30 | Technical |
| 4 | Invited Speech | 2016/07/14 | 40 | 10 | 30 | Technical |
| 5 | Invited speech | 2016/09/06 | 40 | 10 | 30 | Technical |
| 6 | The 7th Brainstorming Workshop on 5G Wireless | 2016/03/14 | 250 | 100 | 150 | Technical |
| C16 | | | | | | |
| 1 | Talk on Signal Processing Architectures and VLSI for Energy-Efficient Intelligent Visual Perception System | 2016/05/02 | 20 | 10 | 10 | Technical |
| 2 | Talk on IEEE Global Collaboration Framework | 2016/08/29 | 20 | 10 | 10 | Technical |
| 3 | Talk on rom Circuits to Computing Big Opportunities from Hardware Perspectives | 2016/03/30 | 25 | 10 | 15 | Technical |
| 4 | Talk on Digital Microfluidic Biochips: From Manipulating Droplets to Quantitative Gene-Expression Analysis | 2016/01/12 | 55 | 20 | 35 | Technical |
| 5 | The 27th VLSI Design and Cad Symposium | 2016/08/02 | 1100 | 300 | 800 | Technical |
| CAS04 | | | | | | |
| 1 | Program Generation for Performance | 2016/10/17 | 28 | 20 | 8 | Technical |
| 2 | Low Power Design and Predictive Failure Analytics in Silicon | 2016/04/29 | 32 | 7 | 25 | Technical |
| 3 | Mining Network Traffic Data | 2016/07/12 | 33 | 25 | 8 | Technical |
| 4 | Overview of Approximate Computing | 2016/04/28 | 42 | 9 | 33 | Technical |
| 5 | CASS Tainan Annual Meeting | 2016/08/03 | 46 | 40 | 6 | Administrative |
| 6 | Designing Photovoltaic-Sourced Charger-Supply Microsystems | 2016/11/21 | 55 | 12 | 43 | Technical |
| 7 | More Than Moore: Implications of the Obvious | 2016/06/16 | 71 | 15 | 56 | Technical |
| 8 | Design Insight and Intuition of Negative Feedback at the Transistor Level | 2016/11/17 | 79 | 14 | 65 | Technical |
| 9 | CASS DLP Talk: Challenges and Opportunities of circuits and systems on Internet of Things | 2016/06/02 | 83 | 17 | 66 | Technical |
| 10 | Fast High-Resolution Thermal Simulation for Integrated Circuits Using Multi-Block Proper Orthogonal Decomposition | 2016/12/22 | 83 | 10 | 73 | Technical |
| 11 | IEEE Tainan CASS Student Outreach Program | 2016/11/17 | 93 | 21 | 72 | Nontechnical |
| 12 | Taiwan and Japan Conference on Circuits and Systems (TJCAS) 2016 | 2016/07/31 | 127 | 25 | 102 | Technical |
| CIS11 | | | | | | |
| 1 | Invited Talk: Do We Accept an AI Judge | 2016/11/29 | 25 | 5 | 20 | Technical |
| 2 | MANY-OBJECTIVE EVOLUTIONARY ALGORITHMS FOR OPTIMIZATION | 2016/05/23 | 70 | 20 | 50 | Technical |
| 3 | Invited talk: MCTS on Single Agent Problems | 2016/04/28 | 70 | 10 | 60 | Technical |
| COM19 | | | | | | |
| 1 | Invited Speech(Prof. Yuan-Hao Huang) | 2016/10/21 | 140 | 6 | 134 | Technical |
| 2 | Invited Speech(Dr. FU, YI-KANG) | 2016/12/30 | 153 | 8 | 145 | Technical |
| 3 | 2016 Fall Workshop on Information Theory and Communications | 2016/08/18 | 243 | 48 | 195 | Technical |
| 4 | 2016 Spring Workshop on Information Theory and Communications | 2016/01/28 | 277 | 52 | 225 | Technical |

| ED15 | | | | | | |
|---------------|---|------------|-----|----|-----|--------------|
| 1 | Workshop of Characterization for Advanced Device and Material 2016 | 2016/11/30 | 100 | 10 | 90 | Technical |
| 2 | 2016 Symposium on Nano Device Technology | 2016/05/12 | 270 | 20 | 250 | Professional |
| IT21 | | | | | | |
| 1 | Invited Talk | 2016/11/01 | 53 | 5 | 48 | Technical |
| 2 | Invited Talk | 2016/05/03 | 57 | 3 | 54 | Technical |
| MTT17 | | | | | | |
| 1 | Invited Talk | 2016/03/11 | 130 | 10 | 120 | Technical |
| 2 | 2016 Electromagnetics Workshop: A Bridge to the Future | 2016/01/25 | 260 | 60 | 200 | Technical |
| NANO42 | | | | | | |
| 1 | Startups Sing In Vitro Diagnostic Devices as an Example | 2016/05/05 | 99 | 9 | 90 | Technical |
| 2 | From Innovation Through Cross-Discipline Research To Innovation, Entrepreneurship, Education and Economic Competitiveness | 2016/10/06 | 110 | 10 | 100 | Technical |
| SMC28 | | | | | | |
| 1 | INVITED SPEECH | 2016/06/23 | 50 | 5 | 45 | Technical |
| 2 | A Overview of System Control: Past, Present and Future. | 2016/06/16 | 55 | 5 | 50 | Technical |
| SP01 | | | | | | |
| 1 | INVITED TALK | 2016/11/23 | 56 | 4 | 52 | Technical |
| 2 | INVITED TALK | 2016/05/04 | 57 | 4 | 53 | Technical |
| 3 | INVITED TALK | 2016/11/02 | 59 | 5 | 54 | Technical |
| 4 | INVITED TALK | 2016/10/05 | 61 | 5 | 56 | Technical |
| 5 | INVITED TALK | 2016/03/30 | 67 | 6 | 61 | Technical |
| SSC37 | | | | | | |
| 1 | Embedded flash memory: technology, circuits to systems and MCU/SOC applications | 2016/12/07 | 35 | 10 | 25 | Technical |
| 2 | SSCS/CASS joint annual meeting | 2016/08/03 | 45 | 45 | 0 | Nontechnical |
| 3 | Wearable and Implantable Bioelectronics for the Diagnostic and Treatment of Neurodegenerative Diseases | 2016/11/09 | 62 | 18 | 44 | Professional |
| 4 | Security and Privacy in Content-Centric Networks | 2016/11/17 | 65 | 10 | 55 | Technical |
| 5 | Wearable and Implantable Bioelectronics for the Diagnostic and Treatment of Neurodegenerative Diseases | 2016/11/10 | 75 | 15 | 60 | Technical |
| VT06 | | | | | | |
| 1 | Distinguished Lecture - Modeling, Theory and Practice: Lessons Learned | 2016/06/13 | 25 | 5 | 20 | Technical |
| 2 | OpenAirInterface (OAI) research progress in III | 2016/10/19 | 35 | 5 | 30 | Technical |
| 3 | Distinguished Lecture - Wireless Network Modeling and Simulations | 2016/04/20 | 46 | 6 | 40 | Technical |
| 4 | Software-defined Networking (SDN)/Network Function Virtualization (NFV) | 2016/06/29 | 50 | 5 | 45 | Technical |
| 5 | Simulation for Networking | 2016/01/22 | 80 | 10 | 70 | Technical |
| 6 | Finding light in the darkness | 2016/11/04 | 90 | 10 | 80 | Technical |
| 7 | Distinguished Lecture - Broadband Mobile Communications for High Speed Vehicles: Challenges and Opportunities | 2016/03/18 | 100 | 10 | 90 | Technical |
| 8 | SDN technical trend and development in OpenStack | 2016/11/10 | 100 | 10 | 90 | Technical |

| WOMEN IN ENGINEERING | | | | | | |
|----------------------|---|------------|-----|----|-----|-----------|
| 1 | Designing Physical Toys in Augmented Reality | 2016/03/22 | 55 | 6 | 49 | Technical |
| 2 | Internet Product Manager of Things | 2016/04/08 | 95 | 15 | 80 | Technical |
| 3 | Security Science and Engineering: Taking IOT as an example | 2016/04/15 | 110 | 20 | 90 | Technical |
| 4 | Playing with Pixel Art: From Brick Sculptures Construction to Feature-Aware Animation | 2016/10/21 | 197 | 17 | 180 | Technical |
| YOUNG PROFESSIONALS | | | | | | |
| 1 | International workshop on 3D multimedia | 2016/10/03 | 30 | 10 | 20 | Technical |

B.3. Professional and Continuing Education Activities

N/A

B.4. Students Activities

B.4.1 Total number of Student branches in the Section

There two Student Branches in Tainan Section:

- National Cheng Kung University Student Branch (est. 2005)
- National Sun Yat-sen University Student Branch (est. 2006)

Student activities held in 2016 for student members are listed in B.4.3.

B.4.2 Section level student activities (student congress, paper and other contests, awards etc)

Tainan Section grants annual awards to encourage and recognize our members for their achievements in research. Two awards are dedicated specifically to our student members:

- Best Ph.D. Thesis Award
- Best Master Thesis Award

In the year of 2016, graduated student members, Kai-Wei Hu and Hsin-Chih Kuo, were awarded in the 2016 IEEE Tainan Section Annual Meeting.

B.4.3 Summary of Student branch activities student branch wise with attachment table / information

1. National Cheng Kung University Student Branch

| | | | | | |
|----------|---|---------------------------------|----|--------|----|
| Date | 2016/11/17 (yyyy/mm/dd) | | | | |
| Event | IEEE CASS Student Outreach | | | | |
| Location | Ling-Yang Room, EE Department, National Cheng Kung University | | | | |
| Category | Technical | Sub-Category | | | |
| | Name | Prof. Gabriel A. Rincon-Mora | | | |
| Speaker | Affiliation | Georgia Institute of Technology | | | |
| | Attendances | IEEE Members | 21 | Guests | 72 |

2. National Sun Yat-sen University Student Branch

N/A

B.5 Awards & Recognition Activities

- Antennas and Propagation Society Tainan Chapter has been granted 2016 special project support and also annual support funding.
- Circuits and Systems Society Tainan Chapter has been grant 2016 CAS Chapter Funding.
- Computer Society Tainan Chapter has been granted 2016 COMSOC Chapter Funding.
- Vehicular Technology Society Tainan Chapter has been granted 2016 VTS Chapter Support Funding.
- The senior member of Tainan Section, Prof. T Kuen-Jong Lee has been elevated to IEEE FELLOW for his contributions to low-cost testing of digital VLSI circuits.

B.6 Communication Activities

Home Page of the section : <http://ewh.ieee.org/r10/tainan/>

Other means of contacts with section members: The mostly used means of contacts with our affiliated chapters or members are email and phone. Information about IEEE, conferences, or activities held by our chapters are announced via emails.

PART C - GOALS AND PLANS

C.1 Continuation of Project/Activity in Progress and Their Implementation Plans

C.2 Goals and Future Plans

In the year of 2017, IEEE Tainan Section will further promote globalization and will continue

- To encourage the establishment of new society chapters.
- To provide assistance to members of the Tainan Section in their IEEE career.
- To encourage and assist members participating in IEEE activities and award applications.
- To provide support to Student Branches.
- Dissemination of knowledge in the broader fields of Electrical and Electronics Engineering through organizing of technical talk, seminars, conferences, symposiums, workshops, tutorials, etc.
- To activate the connections and cooperations with the industry.

The following activities and plans will be initiated by our chapters in 2017.

- Antennas and Propagation Society Tainan Chapter
 - (1) Holding 2017 Annual Meeting
 - (2) Holding 2017 Electromagnetics Workshop
 - (3) Continuing Education Activities
- Broadcast Technology Society Tainan Chapter
 - (1) IEEE Information Theory Workshop (IEEE ITW 2017)
- Computer Society Tainan Chapter
 - (1) Two technical speeches will be held at the National Pingtung University in 2017.
 - (2) Two technical speeches will be held at the National Chung Cheng University in 2017.
 - (3) One workshop on emergent topics will be held in 2017. Location will be somewhere in the south of Taiwan.
 - (4) One collaboration discussion will be held in 2017.
- Circuits and Systems Society Tainan Chapter
 - (1) Plan to organize Human vs. Computer Go Competition at FUZZ-IEEE 2017
 - (2) Plan to organize Competition on FML-based Applications at FUZZ-IEEE 2017
- Communications Society Tainan Chapter
 - (1) Invited Talk: Manager Ping-Hai Hsu, Industrial Technology Research Institute, Taiwan
 - (2) Invited Talk: Dr. FU, YI-KANG, MediaTek Inc, Taiwan
 - (3) 2017 National Symposium on Telecommunication & 2017 Spring Workshop on Information Theory and Communications
- Electron Devices Society Tainan Chapter
 - (1) Planning to hold 2~3 IEEE Distinguished Lecturer Program in Tainan/Kaohsiung or south Taiwan
 - (2) 2017 Symposium on Nano Device Technology. Topic: Nanoelectronic Devices and Technology, Emerging Memory Devices, MEMS Sensors, High-Frequency Technology and Applications, Nano Metrology Technology and Applications.
 - (3) 2017 IEEE Mini-Colloquium on New Material on Nano Decive and Application
- IEEE Young Professionals
 - (1) Planning to hold 2 technical and one non-technical meeting
 - (2) Planning to hold Young Professionals 2017 annual meeting

- Microwave Theory and Techniques Society Tainan Chapter
 - (1) Electromagnetics Workshop - A Bridge to the Future

- Sensors Council Chapter Tainan Chapter
 - (1) 2017 International Conference On Applied System Innovation
 - (2) 2017 International Conference on Innovation, Communication and Engineering

- Systems, Man, Cybernetics Tainan Chapter
 - (1) Planning to hold five speeches, and one academia-industry forum.
 - (2) Planning to recruit at least 10 new members to join IEEE SMC Society Tainan Chapter

- Vehicular Technology Society Tainan Chapter
 - (1) Two Distinguished Lectures.
 - (2) Two Invited talks from domestic/overseas speakers
 - (3) VTS Tainan Chapter annual members meeting