



# **IEEE Taipei Section**

## **Annual Report 2016**

**Prepared by**

**Jing-Jia Liou**

**Secretary (2016/2017)**

**Chin-Liang Wang**

**Chair (2016/2017)**

# Suggested Section Report Format

## PART A - SECTION SUMMARY

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

- Section Executive Committee Member List

#### **Section Officer (2016-2017)**

##### **Chair**

Prof. Chin-Liang Wang (National Tsing Hua University)

Email: clwang@ee.nthu.edu.tw

##### **Vice Chair**

Prof. Wen-June Wang (National Central University)

Email: wjwang@ee.ncu.edu.tw

##### **Secretary**

Prof. Jing-Jia Liou (National Tsing Hua University)

Email: jjliou@ee.nthu.edu.tw

##### **Treasurer**

Prof. Yuh-Ren Tsai (National Tsing Hua University)

Email: yrtsai@ee.nthu.edu.tw

##### **Membership Development**

Prof. Jiun-In Guo (National Chiao Tung University)

Email: jiguo@nctu.edu.tw

##### **Student Activities**

Prof. Ai-Chun Pang (National Taiwan University)

Email: acpang@csie.ntu.edu.tw

##### **Educational Activities**

Prof. Shawn S. H. Shu (National Tsing Hua University)

Email: shhsu@ee.nthu.edu.tw

##### **Award and Recognition**

Prof. Wen-June Wang (National Central University)

Email: wjwang@ee.ncu.edu.tw

##### **Webmaster**

Prof. Yuan-Hao Huang (National Tsing Hua University)

Email: yhhuang@ee.nthu.edu.tw

- Section Highlights
  - Sponsor more national and international conferences.
  - To encourage the intention of member applications, IEEE Taipei Section subsidized students to take part in conferences overseas, and there are 16 students who had been benefited from 16 applications in 2016.
  - IEEE Taipei Section YP group established in March 2016.
  - Section website redesign was completed in Jan 2017.
- Major Events (International, National)
  - Sponsor

Category	Meeting	Date
Administrative	Section Executive Committee Meeting	2016.01.20 2016.10.21 2017.01.16
	Taipei Section 2016 Regular Meeting	2016.01.20 2016.06.27 2016.10.28 2016.11.29

- Co-sponsor

Category	Meeting	Date
Technical (Advertisement)	International Solid-State Circuits Conference 2016 (ISSCC 2016) review workshop	2016.05.15~16
	2016 IEEE International Conference on Consumer Electronics (ICCE 2016)	2016.05.27~29
	2016 Summer School on Information/Communication Theory and Technologies	2016.08.01~04
	2016 IT-COM Fall	2016.08.18~19
	International Symposium on Physics and Applications of Laser Dynamics 2016 (IS-PALD 2016)	2016.09.07~09
	International Conference on Space, Aeronautical and Navigational Electronics 2016 (ICSANE 2016)	2016.11.24~25
	IEEE Symposium on Product Safety Engineering 2016 (ISPSE 2016)	2016.12.22

- Major Chapter Activities
  - Encourage members to participate in IEEE activities.
  - Sponsor national and International conf. to promote the visibility of IEEE as well as IEEE Taipei Section and Chapters.
- Major Student and Affinity Group Activities
  - IEEE Taipei Section YP group established in this year.
  - Dr. Yuan-Hao Chang was elected as the chair of IEEE Taipei Section YP Group.

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

- Summary (as per submitted L50)
  - Refer to the attached document.

- Any other financial activities

The financial status of this Section is comfortable for supporting those planned programs. Some of the chapters have contributed a reasonable percentage of their income to this Section. This allows the Section to maintain the routine functions and to hold more conferences. We also sponsored more student activities than before. The total income of the Section in 2016 was NT\$8,656,721 including NT\$657,204 of 2016 rebate in July 2016. The total expenses was NT\$5,448,401. The final balance at the End of 2016 is NT\$12,703,112. More detail is included in the 2015 Annual Geographic Unit Financial Report.

## PART B - ORGANIZATIONAL ACTIVITIES

### B.1 Membership Development Activities

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

IEEE Grade	2014 Members	2015 Members	2016 Members
Affiliate	78	84	63
Associate	81	84	69
Fellow	102	99	95
Graduate Student	481	399	357
Life Fellow	18	19	24
Life Member	10	11	13
Life Senior	3	4	8
Member	2038	1968	1895
Senior Member	322	352	366
Student	222	192	186
<b>Total</b>	<b>3355</b>	<b>3212</b>	<b>3076</b>

- Summary and evidence of work done to improve the value of membership, which leads to retention and growth of members
  - We keep recruiting new members and plan activities this and next years, including Rendering Awards (Outstanding Chapter Award and Outstanding Student Branch/Chapter Award).

### B.2 Chapter Activities

- Total number of Chapters in the Section: 34
  - Chapter Name: Antennas and Propagation Society Taipei Chapter (AP03)**  
**Chapter Chair:** Chow-Yen-Desmond Sim  
**Title and Affiliation:** Distinguished Professor, Department of Electrical Engineering, Feng Chia University  
**Email:** cysim@fcu.edu.tw
  - Chapter Name: Broadcast Technology Society Taipei Chapter (BT02)**  
**Chapter Chair:** Shih-Chia Huang

**Title and Affiliation:** Professor, Department of Electronic Engineering, National Taipei University of Technology

**Email:** schuang@ntut.edu.tw

3. **Chapter Name: Computer Society Taipei Chapter (C16)**  
**Chapter Chair:** Jan-Ming Ho  
**Title and Affiliation:** Research Fellow, Institute of Information Science, Academia Sinica  
**Email:** hoho@iis.sinica.edu.tw
  
4. **Chapter Name: Circuits and Systems Society Taipei Chapter (CAS04)**  
**Chapter Chair:** Ke-Horng Chen  
**Title and Affiliation:** Professor and Chair, Department of Electrical and Computer Engineering, National Chiao Tung University.  
**Email:** khchen@faculty.nctu.edu.tw
  
5. **Chapter Name: Consumer Electronics Society Taipei Chapter (CE08)**  
**Chapter Chair:** Wen-Chung Kao  
**Title and Affiliation:** Professor, Department of Electrical Engineering, National Taiwan Normal University  
**Email:** jungkao@ntnu.edu.tw
  
6. **Chapter Name: Council on Electronic Design Automation Taipei Chapter (CEDA44)**  
**Chapter Chair:** Hung-Ming Chen  
**Title and Affiliation:** Professor, Department of Electronics Engineering, National Chiao Tung University.  
**Email:** hmchen@mail.nctu.edu.tw
  
7. **Chapter Name: Computational Intelligence Society Taipei Chapter (CIS11)**  
**Chapter Chair:** Rong-Jong Wai  
**Title and Affiliation:** Professor, Department of Electronic and Computer Engineering, National Taiwan University of Science and Technology.  
**Email:** rjwai@mail.ntust.edu.tw
  
8. **Chapter Name: Communications Society Taipei Chapter (COM19)**  
**Chapter Chair:** Hsiao-Feng Francis Lu  
**Title and Affiliation:** Professor, Department of Electrical and Computer Engineering, National Chiao Tung University  
**Email:** francis@mail.nctu.edu.tw
  
9. **Chapter Name: Components, Packaging, and Manufacturing Technology Society Taipei Chapter (CPMT21)**

**Chapter Chair:** Shen-Li Fu

**Title and Affiliation:** Professor, Department of Electronic Engineering, I-Shou University

**Email:** slfu@isu.edu.tw

**10. Chapter Name: Control Systems Society Taipei Chapter (CS23)**

**Chapter Chair:** Kuang-Yow Lian

**Title and Affiliation:** Professor, Department of Electrical Engineering, National Taipei University of Technology

**Email:** kylian@ntut.edu.tw

**11. Chapter Name: Education Society Taipei Chapter (E25)**

**Chapter Chair:** Juing-Huei Su

**Title and Affiliation:** Professor, Department of Electronic Engineering, Lunghwa University of Science and Technology

**Email:** suhu@mail.lhu.edu.tw

**12. Chapter Name: Electron Devices Society Taipei Chapter (ED15)**

**Chapter Chair:** Steve S. Chung

**Title and Affiliation:** Professor, Department of Electronics Engineering, National Chiao Tung University

**Email:** schung@cc.nctu.edu.tw

**13. Chapter Name: Engineering in Medicine and Biology Society Taipei Chapter (EMB18)**

**Chapter Chair:** Jyh-Horng Chen

**Title and Affiliation:** Professor, Department of Electrical Engineering, National Taiwan University

**Email:** jhchen@ntu.edu.tw

**14. Chapter Name: Electromagnetic Compatibility Society Taipei Chapter (EMC27)**

**Chapter Chair:** Ding-Bing Lin

**Title and Affiliation:** Professor, Department of Electronic and Computer Engineering, National Taiwan University of Science Technology

**Email:** dmlin@mail.ntust.edu.tw

**15. Chapter Name: Geoscience and Remote Sensing Society Taipei Chapter (GRS29)**

**Chapter Chair:** Yang-Lang Chang

**Title and Affiliation:** Professor, Department of Electrical Engineering, National Taipei University of Technology

**Email:** ylchang@mail.ntut.edu.tw

16. **Chapter Name: Industry Applications Society Taipei Chapter (IA34)**  
**Chapter Chair:** Tian-Hua Liu  
**Title and Affiliation:** Professor, Department of Electrical Engineering, National Taiwan University of Science and Technology  
**Email:** liu@mail.ntust.edu.tw
  
17. **Chapter Name: Industrial Electronics Society Taipei Chapter (IE13)**  
**Chapter Chair:** Huang-Jen Chiu  
**Title and Affiliation:** Professor, Department of Electronic and Computer Engineering, National Taiwan University of Science and Technology  
**Email:** hjchiu@mail.ntust.edu.tw
  
18. **Chapter Name: Instrumentation and Measurement Society Taipei Chapter (IM09)**  
**Chapter Chair:** Jer-Liang Andrew Yeh  
**Title and Affiliation:** Professor, Department of Power Mechanical Engineering, National Tsing Hua University  
**Email:** jayeh@itrc.narl.org.tw; jayeh@pme.nthu.edu.tw
  
19. **Chapter Name: Information Theory Society Taipei Chapter (IT12)**  
**Chapter Chair:** Yu-Sun Liu  
**Title and Affiliation:** Professor, Department of Electronic Engineering, National Taipei University of Technology  
**Email:** ysliu@mail.ntut.edu.tw
  
20. **Chapter Name: Magnetics Society Taipei Chapter (MAG33)**  
**Chapter Chair:** Chih-Huang Lai  
**Title and Affiliation:** Professor, Department of Materials Science and Engineering, National Tsing Hua University  
**Email:** chlai@mx.nthu.edu.tw
  
21. **Chapter Name: Microwave Theory and Techniques Society Taipei Chapter (MTT17)**  
**Chapter Chair:** Yi-Jan Emery Chen  
**Title and Affiliation:** Professor, Department of Electrical Engineering, National Taiwan University  
**Email:** emerychen@ntu.edu.tw
  
22. **Chapter Name: Oceanic Engineering Society Taipei Chapter (OE22)**  
**Chapter Chair:** Forng-Chen Chiu  
**Title and Affiliation:** Professor, Department of Engineering Science and Ocean Engineering, National Taiwan University; Director, National Center for Ocean Research (Preparatory Office), NARL  
**Email:** fcchiu@ntu.edu.tw



23. **Chapter Name: Power and Energy Society Taipei Chapter (PE31)**  
**Chapter Chair:** Jun-Zhe Yang  
**Title and Affiliation:** Professor, Department of Electrical Engineering, I-Shou University  
**Email:** jzyang@isu.edu.tw
  
24. **Chapter Name: Power Electronics Society Taipei Chapter (PEL35)**  
**Chapter Chair:** Yaow-Ming Chen  
**Title and Affiliation:** Professor, Department of Electrical Engineering, National Taiwan University  
**Email:** ntuyunchen@ntu.edu.tw
  
25. **Chapter Name: Photonics Society Taipei Chapter (PHO36)**  
**Chapter Chair:** Ray-Hua Horng  
**Title and Affiliation:** Distinguished Professor, Institute of Electronics, National Chiao Tung University  
**Email:** rhh@nctu.edu.tw
  
26. **Chapter Name: Product Safety Engineering Society Taipei Chapter (PSE43)**  
**Chapter Chair:** Claire Tsai  
**Title and Affiliation:** Safety Test Lead, Lenovo Technology B.V. Taiwan Branch  
**Email:** ctsai4@lenovo.com
  
27. **Chapter Name: Robotics and Automation Society Taipei Chapter (RA24)**  
**Chapter Chair:** Chieh-Chih Wang  
**Title and Affiliation:** Professor, Department of Computer Science, National Taiwan University  
**Email:** bobwang@ntu.edu.tw
  
28. **Chapter Name: Reliability Society Taipei Chapter (RL07)**  
**Chapter Chair:** Shihpyng Shieh  
**Title and Affiliation:** Professor, Department of Computer Science, National Chiao Tung University  
**Email:** ssp@cs.nctu.edu.tw
  
29. **Chapter Name: Sensors Council Taipei Chapter (SEN39)**  
**Chapter Chair:** Paul C.-P. Chao  
**Title and Affiliation:** Professor, Department of Electrical Engineering, National Chiao Tung University  
**Email:** pchao@mail.nctu.edu.tw
  
30. **Chapter Name: Systems, Man, and Cybernetics Taipei Chapter (SMC28)**

**Chapter Chair:** Yo-Ping Huang

**Title and Affiliation:** Professor, Department of Electrical Engineering, National Taipei University of Technology

**Email:** yphuang@ntut.edu.tw

**31. Chapter Name: Systems, Man, and Cybernetics Taichung Chapter (SMC28)**

**Chapter Chair:** Ching-Chih Tsai

**Title and Affiliation:** Professor, Department of Electrical Engineering, National Chung Hsing University

**Email:** cctsai@nchu.edu.tw

**32. Chapter Name: Signal Processing Society Taipei Chapter (SP01)**

**Chapter Chair:** Jing-Ming Guo

**Title and Affiliation:** Professor, Department of Electrical Engineering, National Taiwan University of Science and Technology

**Email:** jmguo@seed.net.tw

**33. Chapter Name: Solid-State Circuits Society Taipei Chapter (SSC37)**

**Chapter Chair:** Meng-Fan (Marvin) Chang

**Title and Affiliation:** Professor, Department of Electrical Engineering, National Tsing Hua University

**Email:** mfchang@ee.nthu.edu.tw

**34. Chapter Name: Vehicular Technology Society Taipei Chapter (VT06)**

**Chapter Chair:** Hung-Yu Wei

**Title and Affiliation:** Professor, Department of Electrical Engineering, National Taiwan University

**Email:** hywei@ntu.edu.tw

- Number of Active Chapters (Chapters who have reported required number of meetings during the year): 28

**1. Chapter Name: Antennas and Propagation Society Taipei Chapter (AP03)**

AP-S Chapter Co-sponsor Activities in 2015:

- 2015 International Microwave Workshop Series on RF and Wireless Technologies for Biomedical and Healthcare Applications (IMWS-Bio 2015), Venue: Chang Yung-Fa Foundation International Convention Center, Taipei, Taiwan. Website: <http://www.imws2015.org/Default.aspx>

Attendees	Technical Papers	IEEE Members	IEEE APS-Members
181	130	76	38

- ii. 2015 International Workshop on Electro-magnetics: Applications and Student Innovation Competition (iWEM 2015), Venue: National Chiao Tung University, Tsinchu, Taiwan. Website: <http://www.iwem2015.org/>

Attendees	Technical Papers	IEEE Members	IEEE APS-Members
143	74	45	31

## 2. **Chapter Name: Broadcast Technology Society Taipei Chapter (BT02)**

Four meeting reports have been submitted to IEEE. They are listed below.

- i. IEEE International Congress on Big Data - Taipei Satellite Session 2016

Date: May 14-17, 2016

Location: Taipei 101, Taipei, Taiwan

Attendance: Member: 20, Guests 120

The Big Data 2016's Taipei Satellite Session focuses on the Big Data Applications and Use Cases. The major topics include but not limited to: Big Data Architecture, Big Data Modeling, Big Data As A Service, Big Data for Vertical Industries, Big Data Analytics, Big Data Toolkits, Big Data Open Platforms, Economic Analysis, Big Data for Enterprise Transformation, Big Data in Business Performance Management, Big Data for Business Model Innovations and Analytics, Big Data in Enterprise Management Models and Practices, Big Data in Government Management Models and Practices, and Big Data in Smart Planet Solutions. The Taipei Satellite Session will be in the format of 4 days' panel discussions. Panelists will be invited from both academia and industry. All submitted manuscripts will be peer-reviewed by 3 reviewers. Accepted and presented papers from the Taipei Satellite Session will appear in the proceedings of the 5th IEEE International Congress on Big Data (Big Data 2016) at San Francisco, USA which will be indexed by EI in IEEE Xplore. At least one author of each accepted paper is required to register to the 5th IEEE International Congress on Big Data (Big Data 2016). The author present the paper at San Francisco, USA on June 27 – July 2, 2016. The following table shows the assumed numbers of regular attendees, the assumed numbers of submissions and the acceptance rates of the 5th IEEE International Congress on Big Data (Big Data 2016):

- ii. 2016 Taiwan Conference on Software Engineering (TCSE 2016)

Date: August 1-2, 2016

Location: National Museum of Marine Science & Technology, KeeLung, Taiwan

Taiwan Conference on Software Engineering (TCSE 2016) is a principle conference to provide industry, government, academia, experts and scholars for discussing principles and practices of software engineering. You could also realize the latest

technological developments and research results in TCSE 2016. The subject is 「Software Engineering for IoT」 this year. We will discuss the relative topics on how to apply software engineering techniques in Internet of Things, IoT systems in TCSE 2016.

We not only select the papers in the field of software engineering, but also invite domestic and overseas outstanding scholars who are in the field of Internet of Things, IoT systems. We strongly invite you to attend at TCSE 2016. We will also hold a meeting with members of Taiwan Software Engineering Institute.

The screenshot shows the website for the 2016 Taiwan Software Engineering Conference (TCSE 2016). The main navigation bar includes links for '最新消息', '大會組織', '大會資訊', '重要行程', '論文徵求', '大會課程', '註冊資訊', '交通地點', and '住宿資訊'. The '大會資訊' section is highlighted, displaying the following details:

主辦單位	日期	地點
臺灣海洋大學	2016年8月1-2日	基隆 海洋科技博物館
承辦單位	指導單位	APP
臺灣海洋大學資工系 臺灣海洋大學電資學院 海洋科技博物館	軟體工程學會 教育部資訊及科技教育司 行政院科技部工程科技推廣中心 IEEE Broadcast Technology Society Taipei Chapter	下載APP

- iii. 2016 Advanced Electrical and Electronic Science Technology Conference-  
Experience sharing of developing consumptive electronic technology

Date: May 6, 2016

Location: Chinese Culture University, Taiwan

Attendance: 100 peoples

In this symposium, we will conduct a series of talks and lectures to introduce the multidisciplinary research experience and describe the cutting age technology, as well as any possible future consumer products. Topic includes 3D Endoscopy Systems, A Quest for Smart Life, LPWAN for Internet on Things and Applications, The Construction of Integer Sequences to Communication Systems

- iv. 2016 IET Transdisciplinary of Microelectronic-Information Systems Application  
and Integration Contest

Location: Chinese Culture University, Taiwan

In recent years, the applications of interdisciplinary learning have swept across the whole world. From a number of domestic and foreign indicated manufacturers, it is extremely important to development interdisciplinary learning in the future. We hope that this development could arouse students to have more creative idea and realizable ability. We also encourage and drill students in doing innovation and core technological research works which are concerned with electrical engineering and computer science. Through developing the mechanism from

interdisciplinary cooperation, we hope that this mechanism could increase the added value for the students. The contest is divided into a series of groups which are based on the field of electrical engineering, computer science and interdisciplinary applications. Each group is not limited to a specific platform for competition. We hope to spread students out from the heterogeneous integration of electrical engineering and computer science, and emphasize the developed abilities of “innovation, integration, and interdisciplinary applications’ on core technologies. Because of the diversity of interdisciplinary applications, the sponsor will define a clear subject to make the difference between each group. It could reduce the situations that subjects have huge difference and hardly scored them.

### 3. **Chapter Name: Computer Society Taipei Chapter (C16)**

#### i. The 27<sup>th</sup> VLSI Design/Cad Symposium, August 2-5, 2016

Venue: 85 Sky Tower Hotel, Kaohsiung, Taiwan

Attendance: Members, Guests

Website:

<http://vlsicad2016.nsysu.edu.tw/site/Page.aspx?pid=901&sid=1092&lang=cht>

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.

#### ii. HITCON Pacific 2016, December 1-2, 2016

Venue: Taipei New Horizon 6 Floor, Taipei, Taiwan

Attendance: Members, Guests

Website: <http://hitcon.org/2016/pacific/en/index.htm>

This year has been a particularly eventful year for the cyber security community. We have witnessed the increasing application of IoT and IoV, many large-scale inception groups or campaigns exposed, Critical Infrastructures attacked, Ransomware rampant, as well as financial systems hacked. The infamous ATM malware heist in Taiwan, for example, shocked international media and various industries across the globe. Cyberspace has matured into a playground of warfare, and has become closely interrelated with national security. This year at HITCON Pacific, our topic “The Fifth Domain: Cyber | Homeland Security” focuses on cyber threats and defense.

We the most renowned speakers and HITCON CTF Final with top ten winning teams come from the world. The Attack and Defense format competition will see the world's best teams competing for the 2016 HITCON CTF Championship. Hope you could come with us to join this Asia's most iconic cyber security convention.

#### 4. **Chapter Name: Circuits and Systems Society Taipei Chapter (CAS04)**

In year 2013, we have accomplished the following activities:

Date	Member Attendees	Non-Member Attendees	Speaker		
			Speaker	Topic	Date
2 March 2016	5	189	Mr. Yi-Min Huang	Becoming A Fascinating Partner at Work (Educational)	2 March 2016
9 March 2016	5	189	Dr. Li-Ren Huang, ITRI	Introduction to Automotive Electronics at ITRI (Technical)	9 March 2016
23 March 2016	5	189	Dr. Chun-Lung Hsu, ITRI	BIST/BISR Design for 3D-Stacked Wide-I/O DRAM (Technical)	23 March 2016
6 April 2016	5	189	Ms. Chi-Ya Wang	Youth Participation in Politics (Educational)	6 April 2016
20 April 2016	5	189	Mr. Chun-Juei Chung, AVerMedia Technologies	Digital Imaging Signal Processing (Technical)	20 April 2016
4 May 2016	5	189	Mr. Hsu-Shui Liu, TSMC	Evolution and Transformation of Process Equipment at TSMC (Technical)	4 May 2016
25 May 2016	5	189	Mr. Yun-Chung Cho, co-founder of Avanti	American Jokes, Slangs, and Business Tactics (Technical)	25 May 2016
29 July 2016	3	36	Dr. Sebastien Marion, founder of Comufy	Entrepreneurship of Social Media Management (Educational)	29 July 2016
25-27 October 2016	5	50	Mr. Keng-Chi Wu	Analog Power Circuitry - its Mathematics and Physics (Technical, three-day intensive course)	25-27 October 2016
15 November	4	31	Chair Professor Bing J. Sheu,	Artificial Intelligence and	15 November

2016			IEEE Fellow, Chang Gung University	Robotics, What is Young People's Future? (Educational)	2016
Date	Member Attendees	Non- Member Attendees	Speaker	Title	Date
2 March 2016	5	189	Mr. Yi-Min Huang	Becoming A Fascinating Partner at Work (Educational)	2 March 2016

Some activity photos are as below.

Lecture by Dr. Sebastien Marion on 29 July 2016:



Intensive course by Mr. Keng-Chi Wu on 25-27 October 2016:



Lecture by Chair Professor Bing J. Sheu on 15 November 2016:



##### 5. Chapter Name: Consumer Electronics Society Taipei Chapter (CE08)

Annual Activities:

- i. IEEE International Symposium on Product Compliance Engineering-Taiwan

Date: Dec. 22, 2016 (8 A.M. - 17 P.M.)

Topic: “Product Compliance Engineering”

Lecturer: Elya Joffe and John Allen

Venue: National Taiwan Normal University (NTNU), Taipei

Summary: An overall 80 attendees participated and learned about practical technologies related to product safety and compliance engineering for consumer product development.

Summary: On the 22nd of December 2016, we held IEEE International Symposium on Product Compliance Engineering-Taiwan in Taipei. The event was a one day workshop on product safety and compliance and was conducted in English and held in the National Taiwan Normal University (NTNU). The General Chair was Professor Wen-Chung Kao, with the strong assistance of the Taipei PSES Chapter and CE chapter. This workshop is an excellent lead up to the 2017 ISPCE Taiwan. The event had a number of invited speakers, and over 80 attendees. The 2017 PSES President John Allen came to support the first Asian event.

ii. Hosting the 2016 IEEE ICCE-TW

Date: May 27 – May 29, 2016

Topic: IoT in Consumer Electronic: From Vision to Reality

Venue: National Chi Nan University, Nantou.

Summary: IEEE International Conference on Consumer Electronics-Taiwan (ICCE-TW) is held at the National Chi Nan University (NCNU), Taiwan. After the successful experiences of 2014 & 2015 ICCE-Taiwan, the 3rd ICCE-Taiwan is expected to continue its success. As a grand venue for scholars and professional persons all around the world, ICCE-Taiwan aims to initiate profound discussions on research and discovery in electronics and a relevant professional field. Furthermore, its vision is to set ICCE-Taiwan as a milestone in the Consumer Electronic field and become a historic and dominant conference year by year with strong and resourceful support from the IEEE CE Society. Some interesting keynote speeches were organized around this topic. The first keynote speech “The energy revolution in a connected world” was given by Stefan Mozar. Energy consumption patterns in a connected world have changed our household energy footprint. The choices available to buy energy and the introduction of digital technology affect the way we consume energy. This presentation looks at the driving forces of our changing energy requirements. The second one is provided by Prof. Juin J. Liou from Florida. He discussed practical electrostatic discharge



(ESD) protection issues for consumer electronics. Professor Hsueh-Ming Hang from National Chiao Tung University spoke on “3D video: some challenging topics.” He focuses on the next-generation 3D research including so-called virtual-viewpoint (or free-viewpoint) video system and on-going standardization item in the international ITU/MPEG Standards. Finally, Dr. Haruhiko Okumura from Japan spoke about “Display innovation: floating picture in the real space.”

The new virtual space experiences can be achieved by the dome type display, which had fields of vision more than 160 degrees. The new technology and theory of consumer electronics have been developed along with new research globally, and our vision to this field continues to be broadened while we discover more. Therefore, the main theme of 2016 IEEE ICCE-TW is “IoT in Consumer Electronic: From Vision to Reality.” Under the main theme, the conference features a strong and rich program, including four inspiring keynote speeches and one young professional event. On top of that, we attracted more than 190 valuable research papers. Without the excellent papers of authors and co-authors, there would be no fruitful presentations.

**6. Chapter Name: Council on Electronic Design Automation Taipei Chapter (CEDA44)**

CEDA Taipei Chapter hosted or supported the following activities in 2016:

i. Chapter Meetings

No	Date	Venue
1	August 5, 2016	85 Sky Tower Hotel, Kaohsiung
2	December 10, 2016	Mellow Fields Hotel, Taipei

ii. Seminars

No	Title	Speaker	Date	Venue
1	Neural Networks on RRAM	Prof. Yu Wang, Tsinghua University, China	February 15, 2016	National Tsing Hua University
2	Index Generation Functions: Logic Synthesis for Pattern Matching	Prof. Tsutomu Sasao, Meiji University, Japan	March 8, 2016	National Tsing Hua University

3	How to Rescue ICs Using Tunable Components	Prof. Ulf Schlichtmann, Technische Universität München, Germany	March 25, 2016	National Tsing Hua University
4	Brain-inspired Computing: from Hardwares to Applications	Dr. Gi-Joon Nam, IBM T. J. Watson Research Center	March 28 and 29, 2016	National Chiao Tung University and National Taiwan University
5	Analog Layout Synthesis – Concepts and Methodologies	Prof. Mark Lin, National Chung Cheng University	April 12, 2016	National Chiao Tung University
6	Design for Manufacturability and Reliability in Extreme Scaling	Prof. Bei Yu, The Chinese University of Hong Kong	May 17 and 19, 2016	National Tsing Hua University and National Taiwan University
7	Design Automation for Fluidic Sample Preparation Using Digital Microfluidic Biochips	Prof. Sudip Roy, India Institute of Technology (IIT) Roorkee	May 26, 2016	National Chiao Tung University
8	Non-linear Programming Methods for VLSI Placement Problem	Prof. Jianli Chen, Center for Discrete Math and Theoretical CS, Fuzhou University, China	June 12, 2016	National Taiwan University
9	Brain-Inspired Computing: The Extraordinary Voyages in Known and Unknown Worlds	Prof. Yi-Ran Chen, University of Pittsburgh, USA	June 20, 2016	National Tsing Hua University
10	Low Electric Power Design for Video Processing	Prof. Satoshi Goto, Emeritus Professor of Wasada University, Japan	July 26, 2016	National Taiwan University
11	Illuminating Many-Core Architectures with Silicon Photonic Interconnects	Prof. Sébastien Le Beux, École Centrale de Lyon, France	December 22, 2016	National Tsing Hua University
12	Design Obfuscation Methods for 2D and 3D Integrated Circuit Security	Prof. Qiaoyan Yu, University of New Hampshire, USA	December 22, 2016	National Tsing Hua University

iii. 1 EDA Forum (3 speakers from Google, MediaTek, and NCKU Taiwan)

No	Date	Venue
1	November 25, 2016	National Chiao Tung University

## iv. Symposium and Workshops

No	Event	Date	Venue
1	VLSI Design/CAD Symposium	August 2-5, 2016	85 Sky Tower Hotel, Kaohsiung
2	Workshop on Algorithms for Electronic Design Automation	October 14, 2016	National Tsing Hua University
3	Workshop on Electronic Design Automation	December 10-11, 2016	Mellow Fields Hotel, Taipei

7. **Chapter Name: Computational Intelligence Society Taipei Chapter (CIS11)**

Meeting Title	Region	Section	Org. Unit	Meeting Date	Reported on Date	Reported By	Number of Attendees
2016 Green Energy Seminar	10	TAIPEI	CIS11	2016/10/7 08:00	2016/12/14 02:00	Rong-Jong Wai	105
2016 International Conference on Advanced Electronic Science and Technology (AEST2016)	10	TAIPEI	CIS11	2016/8/19 20:00	2016/12/14 01:23	Rong-Jong Wai	215
The International Conference on Information Science and Technology [IST2016]	10	TAIPEI	CIS11	2016/8/13 23:00	2016/12/12 04:17	Rong-Jong Wai	320
The International Conference on Energy and Mechanical Engineering [EME2016]	10	TAIPEI	CIS11	2016/11/19 22:00	2016/12/12 04:07	Rong-Jong Wai	215

8. **Chapter Name: Communications Society Taipei Chapter (COM19)**

Chapter COM19 had submitted eight L31 meeting reports this year.

- i. 2016 Spring Workshop on Information Theory and Communications during January 28 and 29, 2016.

There were more than 200 people attending this workshop, including about 100 members. The workshop consists of seven invited talks:

"Overload Control for Machine-type Communications in LTE-Advanced Networks" by Prof Ray-Guang Cheng

"Game-Theoretic Resource Management in Wireless Networks" by Dr. Chih-Yu Wang

"Relay Precoder Designs for Two-Way AF MIMO Relay Systems: An Eigenmode-Selection Approach" by Prof. Chin-Liang Wang

"Coding Theory for Reliable Signal Processing" by Prof. Yung-Hsiang Han

"Recent Trends of Radio Access Network in 5G Wireless: Architecture, Modeling, and Optimization" by Prof. Li-Chun Wang

"Clouding computing and IoT" by Prof Yi-Bing Lin

"Teleportation-based fault-tolerant quantum computation with ancilla preparation by classical error-correcting codes" by Dr. Ching-Yi Lai

ii. 2016 Shannon Centennial Celebration on April 29, 2016

The day of April 30, 2016 is the one-hundredth birthday of our father of information theory, Claude E. Shannon, who published his landmark paper "A mathematical theory of communication" in year 1948 and henceforth brought forward the modern form of digital communication. To celebrate his centennial birthday and cherish his contribution, the IEEE Information Society has launched a series of worldwide events this year. Joining such effort, our chapter, the IEEE ComSoc Taipei chapter, has technically and financially sponsored three of such activities in Taiwan: one held at National Taiwan University (NTU) hosted by Prof HJ Su, one held at National Chiao Tung University (NCTU) hosted by Prof HF Francis Lu, and one at National Cheng Kung University (NCKU) jointly hosted by Prof SL Su and Prof Stanley Liu. Overall, there were 184 people, including faculty members and graduate students, attending these events on April 29, 2016, to learn from the posters about how Shannon's theory is applied to the latest communications technology. A 30-minutes footage about Shannon was played and watched; free food and beverage were also served, using the money supported by our chapter. It is noteworthy that the activity held at NCKU included also a quick quiz of five short questions about Shannon in the end. Gifts were provided by Prof SL Su and were given to the students who first gave correct answers to these questions. Furthermore, there were two other similar events held on the same day and at the same time in Taiwan. Prof CP Li hosted the same event at National Sun-Yat-Sen University, and so did Prof JY Chen at National Dong Hwa University.

iii. 2016 Summer School on Information Theory, Communication Theory and Technologies from August 1 to 4, 2016.

There were more than 100 students attending the summer school which consists of the following courses

"Polar codes" by Prof Ueng

"Turbo and LDPC Codes" by Prof Chun-hsuan Wang

"Quantum Error-Correcting Codes and Fault-Tolerant Quantum Computation" by Dr. Chin-yi Lai

"Compressed Sensing" by Prof Jwo-yuh Wu

"LTE/LTE-A Standards and Technology" by Dr. CC Chen

"5G and Massive MIMO" by Prof Wen-rong Wu

"Latest Progress and Technology in 3GPP 5G Standardization" by Prof Shin-lin Shieh

- iv. 2016 Fall Workshop on Information Theory and Communications during August 18 and 19, 2016.

There were more than 200 people attending this workshop, including about 100 members. The workshop consists of seven invited talks:

"BER-Improved Quantization of Source-to-Relay Link SNR for Cooperative Beamforming: A Fixed Point Theory Approach" by Prof Jwo-Yuh Wu

"Successive Convex Approximation and Its Application in the Wireless Communication Algorithm Design" by Prof Che Lin

"Top-K ranking: An information-theoretic perspective" by Prof Changho Suh

"Independence Testing and Information Theoretic Cryptography" by Prof. Shun Watanabe

"An Information-Centric Approach to Data Analytics: The New Era to Information Theory, Machine Learning and Signal Processing" by Dr. Shao-Lun Huang

"Bursty Gaussian Broadcast Channel and its Application to 5G" by Prof. Shih-Chun Lin

"MIMO Detection: From Theory to Practice" by Prof. Prof. Chao-Kai Wen

- v. Distinguished Lecture "Fundamental Performance Analysis in Two-Hop Relay Mobile Ad Hoc Networks" given by Prof Jiajia Liu on March 29, 2016 at National Taiwan University

Abstract -- Due to its distinctive features of robustness, self-organization, quick deployment and reconfiguration, mobile ad hoc network (MANET) appears attractive for lots of application scenarios, such as disaster relief, emergency response, daily information exchange, military troop communication, pedestrian network and vehicular ad hoc network, etc. However, there is still a long way to go before MANETs could be widely commercialized and implemented. The very roadblock that has been stunting the application of MANETs is the lack of a general network information theory, which is expected to establish a thorough understanding on the fundamental performances in such networks, like the throughput capacity, delivery delay, end-to-end delay, etc. The available works on this line mainly focus on deriving order sense results, which are helpful for us to explore the general scaling laws of throughput capacity and delay but tell us little about the exact throughput and delay performances there. Towards such a target, we develop theoretical frameworks to analytically study the MANET throughput and delay performances in this talk. Specifically, we focus on an important class of MANETs—the two-hop relay MANETs, i.e., the MANETs adopting the popular and efficient two-hop relay algorithms for packet routing.

- vi. Distinguished Lecture "Key Wireless Access Technologies in 5G and IoT Systems" by Prof Rose Qingyang Hu on December 20, 2016 at National Chiao-Tung University

Abstract: Device-to-Device (D2D) communication, NOMA, MU-MIMO and mmWave are among the key technologies in the next generation (5G) cellular network to support Internet of Things as they can significantly improve the system performance on connectivity, spectrum efficiency and energy efficiency. In this talk, we will address how to exploit these technology advantages and tackle the key technical challenges to achieve high system performance gains. In particular, we will present D2D, MU-MIMO, NOMA and mmWave based schemes and their related performance study in 5G/IoT settings. These schemes include beamforming and NOMA based MU-MIMO in a downlink cellular network with underlay D2D users, power control in D2D underlaid cellular networks, uplink fractional power control based NOMA, and relay-assisted Millimeter Wave cellular networks. The talk will present detailed 5G system model, technology background, mathematical approaches and performance results based on both analysis and simulations. Key technical insights from these studies will be provided.

- vii. Lecture "Modeling, Theory and Practice: Lessons Learned" by Prof. Yuguang "Michael" Fang, Department of Electrical and Computer Engineering, University of Florida on June 17, 2016

Abstract: Research on wireless networks, as any other engineering fields, heavily relies on realistic modeling from which theory can be developed to better understand the network problems and better design methodology can be obtained. Unfortunately, often times pursuit of theoretical developments and mathematical beauty tends to drag models to unrealistic play field, leading to the downfall of seemingly fruitful research directions. In this talk, the speaker will discuss a few research directions in wireless networks and pinpoint the pitfalls from which lessons can be learned.

- viii. Distinguished Lecture "Exploring New Performance Envelope of Wireless Networks" by Prof Tom Hou on December 26, 2016 at National Taiwan University.

9. **Chapter Name: Components, Packing, and Manufacturing Technology Society Taipei Chapter (CPMT21)**

- i. International Microsystems, Packaging, Assembly and Circuits Technology (IMPACT) - IAAC (IMAPS All Asia Conference) Joint Conference 2016  
Date: 10/26/2016~10/28/2016  
Venue: Taipei Nangang Exhibition Hall  
Attendance: 20 Members, 534 Guests  
Activities: 5 plenary speeches, 47 invited speeches, 23 forums and 28 sessions
- ii. I-Rice / IEEE CPMT Seminar  
Date: 12/6/2016  
Venue: National Chiao Tung University  
Attendance: 5 Members, 120 Guests

**10. Chapter Name: Education Society Taipei Chapter (E25)**

Two meeting reports have been submitted to IEEE. They are listed below.

- i. International Micromouse and Robotrace contests (9/11/2016)
  - Attendance: 30
  - The international contest has two important aspects:
    - The vocational and technical university students in Taiwan had a chance to meet international contestants from USA, UK, Japan, Singapore, and China, and to share experiences with each other.
    - The contest improved gradually the implementation skills of mobile robots of the vocational and technical university students in Taiwan.
  
- ii. Experiences sharing- micromouse and robotrace contest (9/10/2016)
  - Attendance: 40
  - This meeting focused on two sensor fusion algorithms that are based on the observer and Kalman filter theories for educational mobile robots. These two algorithms are experimentally validated on an educational mobile robot, and the robot is also developed for classic micromouse contests..

**11. Chapter Name: Electron Devices Society Taipei Chapter (ED15)**

Seven technical activities were organized or co-sponsored by the chapter. Three meetings were co-organized with the EDS NCTU Student chapter. They are listed below.

- i. April 25-29, 2016(Technical-co-sponsor)
  - International Symposium on VLSI-TSA
  - Attendance: Members 150, Guests 350
  - Activities: 6 keynote talks, 59 contributed paper presentations, 2 short courses
  
- ii. May 3, 2016 (co-organized with the EDS NCTU Student Chapter)
  - IEEE EDS WIMNACT-50 Mini-colloquium
  - Attendance: Members 30, Guests 80
  - Activities: invited DL talks
  
- iii. May 3-May 6, 2016
  - The IEEE ISNE International Symposium on Next Generation Electronics (ISNE)
  - Activities: International conference with invited talks

- iv. July 15, 2016 (co-organized with the EDS NCTU Student Chapter)
  - Flexible, Foldable and Multi-Functional Paper-Based Electronics
  - Attendance: Members 30, Guests 20
  - Activities: DL talk
  
- v. July 29, 2016
  - New Channel Materials and Devices Beyond Si CMOS
  - Attendance: Members 20, Guests 20
  - Activities: invited talk
  
- vi. September 9, 2016
  - e-Manufacturing & Design Collaboration Symposium
  - Attendance: Members 20, Guests 130
  - Activities: Technical co-sponsorship
  
- vii. November 11, 2016 (co-organized with the EDS NCTU Student Chapter)
  - The Energy and Variability Efficient Era (E.V.E.) is ahead of us-*When More Moore and More than Moore will meet for 3D*
  - Attendance: Members 20, Guests 40
  - Activities: invited DL talk

**12. Chapter Name: Engineering in Medicine and Biology Society Taipei Chapter (EMB18)**

- i. 2016 MEG Educational Training II
 

2016 MEG Educational Training I has been held from July 6th to July 7th in National Taiwan University, and organized by Ministry of Science and Technology and National Taiwan University, Taiwan. There were 20 participants joined in the two days training course. The course aims at providing in-depth courses in experimental design, data collection, data analysis, and results interpretation to researchers interested in using magnetoencephalography (MEG) to study brain function and its correlates to social sciences.
  
- ii. fMRI Educational Training I 2016
 

Functional MRI Educational Training I 2016 has been held from Jan 20th to Jan 21th, 2016 sponsored by Ministry of Science and Technology, organized by Department of Electrical Engineering, Department of Psychology, and Neurobiology and Cognitive Science Center from National Taiwan University. There were 30 participants joined in the two days events. The event was aim to promote fMRI technique to the Humanities researcher, engineer, psychologist and educated the interdisciplinary student of Science and Social Science.
  
- iii. fMRI Educational Training II 2016



Functional MRI Educational Training II 2016 has been held from Jul 13th to Jul 14th, 2016 sponsored by Ministry of Science and Technology, organized by Department of Electrical Engineering, Department of Psychology, and Neurobiology and Cognitive Science Center from National Taiwan University. There were 20 participants joined in the two days events. The event was aim to promote fMRI technique to the Humanities researcher, engineer, psychologist and educated the interdisciplinary student of Science and Social Science.

iv. Biomedical Electronics and Bioinformatics Camp, 2016

The 2016 National Taiwan University Biomedical Electronics and Bioinformatics Camp was held from July 7th to July 9th at NTU Barry Lam Hall. It was different from last year's event, and included a Hackathon. We hoped to give our participants a broad introduction to emerging and innovative technologies with the theme, "Next decade: the new generation of biomedical technology - opportunities in and challenges of personalized medicine". We invited nine speakers from academic backgrounds and the industry to discuss this topic from different aspects such as biology, software, hardware, and so on.

The core value of "Personalized Medicine" is giving patients precise precaution, diagnosis, and treatments according to the correlation between genes and diseases. The research is done by collecting and analyzing genes from individuals. Therefore, combining biology, medicine, electronics and computer science to develop personalized treatments and drugs is a major topic for those researchers. Meanwhile, combining interdisciplinary expertise, grasping opportunities for effective cross communication, and preparing for upcoming biomedical applications are all challenging tasks that need further exploration by researchers.

A total of 52 participants joined the event, including high school students, college students, graduated students and members of the community. Apart from biomedical and engineering professionals, there were also people with financial and management backgrounds. According to our questionnaires, all participants were quite satisfied with the program and were willing to participate again. At the same time, they gave high ratings to speaker presentations.

Everything went well, other than the appearance of typhoon Nepartak, which forced us to cancel the second day's agenda, as well as the last day's competition. Next year, we will foster new talent from academics and the industry and continue to hold the Biomedical Electronics and Bioinformatics Camp.

v. MEG/MRI Workshop

MEG/MRI Workshop has been held on Jan 13th in National Taiwan University. There were 97 participants joined in the two days training course. The course were providing MEG/MRI data collection, and data analysis. An fMRI analysis of the graphic thinking and creativity in landscape design.

**13. Chapter Name: Electromagnetic Compatibility Society Taipei Chapter (EMC27)**

In 2016, Taipei EMC Chapter (EMC27) held and sponsored three technical activities as follows:

- i. 2016 Taiwan EMC Technology and Practice Symposium
  - Date: June 23-24, 2016.
  - The 2016 Taiwan EMC Technology and Practice Symposium was held on June 23-24, 2016, in Taichung, Taiwan. The symposium was organized by Department of Communications Engineering of Feng Chia University and technically sponsored by IEEE EMC-Society Taipei Chapter. The symposium was scheduled to have five workshops on the first day and six oral-presentation sessions on the second day. Attendees include EMC scholars and students from various universities in Taiwan as well as technical engineers from industrial companies and accredited EMC labs..
  
- ii. EMC Joint Workshop Taipei 2016
  - Date: June 2-3, 2016.
  - EMC Joint Workshop Taipei 2016, (EMCJ 2016) was held on June 2 and 3, at Barry Lam Hall of National Taiwan University, Taiwan. This workshop was supported by IEEE EMC-Society Taipei Chapter, Taiwan Electromagnetic Industry-Academia Consortium (TEMIAC), and IEICE Taipei Section. Both EMC groups from Japan and Taiwan are invited. Also, many leading industries in Taiwan are participated. It is an unprecedented grand event for EMC groups in Japan and Taiwan. There are three parts for the technical program, including oral regular session, invited speech and poster sessions
  
- iii. Next Generation Smart Life, Bio-EM, and Advanced Communications Technology
  - Date: May 30, 2016
  - The Workshop on Next Generation Smart Life, Bio-EM, and Advanced Communications Technology was held on May 30, 2016, in Taipei. The symposium was organized by IEEE EMC-Society Taipei Chapter and sponsored by Auden Technology Corp. The symposium was scheduled to have four topical tracks on Advanced Wireless Communications, Bio-EM Issues, New EMC Technologies and EM Simulation Techniques. More than 300 attendees include EMC professionals, scholars and students from many universities, industrial companies and accredited EMC labs.

**14. Chapter Name: Geoscience and Remote Sensing Society Taipei Chapter (GRS29)**

- i. Date: March 23th, 2016  
 Topic: Doing by learning: Potential of (massive) data driven approaches to image analysis  
 Speaker: Prof. Jiang, Xiaoyi, Computer Science at University of Munster, Germany

Location: National Taipei University of Technology

- ii. Date: May 25th, 2016  
 Topic: Software defined data center, cloud computing and the IoT  
 Speaker: Mr. Kuo, James, R&D Director, Quanta Cloud Technology  
 Location: National Taipei University of Technology
- iii. Date: June 15th, 2016  
 Topic: A Fast Hyperplane-based Minimum-Volume Enclosing Simplex Algorithm for Blind Hyperspectral  
 Speaker: Prof. Chi, Chong-Yung, Institute of Communications Engineering, & Department of Electrical Engineering, National Tsing Hua University  
 Location: National Taipei University of Technology
- iv. Date: September 30th, 2016  
 Topic: Taiwan Satellite Program FORMOSAT-5  
 Speaker: Deputy Chair. Shiann-Jeng Yu, National Space Organization, Taiwan  
 Location: National Taipei University of Technology
- v. Date: October 26th, 2016  
 Topic: Cloud E-learning for Mechatronics  
 Speaker: Prof. Kuo-Ming Chao, Department of Computing, Coventry University, UK  
 Location: National Taipei University of Technology
- vi. Date: Nov. 23th, 2016  
 Topic: Shallow Water Habitat on the Pratas Islands of South China Sea  
 Speaker: Prof. Ren, Hsuan, Department of Computer Science and Information Engineering, National Central University  
 Location: National Taipei University of Technology
- vii. Date: Dec. 21st, 2016  
 Topic: Microsoft Azure IoT Suite  
 Speaker: Mr. Joey Lin, Sr. Technical Account Manager of OEM, Microsoft Taiwan  
 Location: National Taipei University of Technology
- viii. Date: Dec. 24-25, 2016  
 The 12th International Conference on Space, Aeronautical and Navigational Electronics 2016 in conjunction with the 2016 IEEE Geoscience and Remote Sensing Society Joint Chapters Meeting  
 Location: National Taipei University of Technology

**15. Chapter Name: Industry Applications Society Taipei Chapter (IA34)**

- i. IAS/IES/PELS Taipei Joint Symposium, Aug 10, 2016 in National Taiwan University of Science and Technology, Taipei, Taiwan

Date: Aug 10, 2016

Attendance: 50+

Activity: This is the first joint symposium of IAS, IES and PELS Taipei Chapters. Six oral presentations by graduate students of NTUST, NTHU and NTU, and a talk by Prof Katherin Kim (Ulsan Institute of Science and Technology, Ulsan, Korea) are arranged.

- ii. Seminar: Advance Electric Machines Technologies, Ying-chao Luo (Chicony Power, Taiwan)

Date: March 11, 2016

Attendance: 40

Activity: Mr. Ying-chao Luo shares his views of electric machine design and development in Chicony Power, a manufacturer of switching regulators and motor drives in Taiwan.

- iii. Seminar: HVDC Grids and Off-shore Wind farms, Prof. Ramon Blasco-Gimenez (Universssdad Politecnica de Valencia)

Date: August 24, 2016

Attendance: 50

Prof. Blasco-Gimenez gives a talk about HVDC in off-shore windfarm applications.

- iv. Taiwan Power Semiconductor Workshop, Dr. Leo Lorenz, European Center for Power Electronics

Date: August 10-12, 2016

Attendance: 100

Dr. Leo Lorenz gives a short course in the fundanmentals and applications of power semiconductor devices

## 16. Chapter Name: Industrial Electronics Society Taipei Chapter (IE13)

- i. High Frequency GaN Converters for Distributed Power Systems, Prof. Qiang Li

Date: 2016/7/21

Attendance: 102

Activity: There are 102 attendees in total at the IES technical seminar, held at NTUST on July 21, 2016. Some of them are from industry. The event invited Prof. Qiang Li, a distinguished expert of power electronics technology, to give lecture with insight inspiration to the audience. Several in-depth discussions as to why power electronics technologies should be further developed were also found at the activity. The attendant students also got the chance to have a global view about the worldwide trends of power electronics industry development.

- ii. 2016 IES/ PELS/ IAS Taipei Joint Young Professional Symposium

Date: 2016/8/10

Attendance: 36

Activity: The IES/ PELS/ IAS Taipei Joint Young Professional Symposium was held in National Taiwan University of Science and Technology on Aug. 10, 2016. The symposium invited 1 Korean professor and 6 graduate students to give oral presentations with insight inspiration to the audience. As a whole, the symposium has achieved the objectives of communication and experience sharing between several universities in Taiwan.

iii. 2016 SIT Internship Program

Date: 2016/3/2~3/11

Attendance: 6 Japanese students, 1 TA, 3 Professors.

v. 2016 Industrial Electronics International Forum

Date: 2016/8/21~27

Attendance: 117

Activity: The 2016 Industrial Electronics International Forum was held at NTUST, NTU, NTHU, NTUT and NCKU from August 21 to 27, 2016. Prof. Ramon Blasco-Gimenez, a distinguished expert of wind power technology, was invited to give lectures with insight inspiration to the audience. Several in-depth discussions as to why renewable energy and wind power technologies should be further developed were also found at the activity

**17. Chapter Name: Information Theory Society Taipei Chapter (IT12)**

The major activities of the IEEE Information Theory Society Taipei Chapter in 2016 are as follows.

- i. 2016 Fall Information Theory and Communications Workshop was held at Xitou, Nantou in central Taiwan from Aug. 18 to Aug. 19. (<http://itcom2016f.ntu.edu.tw/itcom2016f/conference.html>). The workshop was sponsored by IEEE Information Theory Society Taipei Chapter and IEEE Communication Society Taipei and Tainan Chapters. The workshop program includes 7 invited talks, 2 poster sessions, and an IEEE communication and information theory society member meeting.
- ii. 2016 Spring Information Theory and Communications Workshop was held at National Ilan University, Ilan in northeastern Taiwan from Jan. 28 to Jan. 29. (<http://itcom2016s.niu.edu.tw/>). The workshop was sponsored by both IEEE Information Theory Society Taipei Chapter and IEEE Communication Society Taipei and Tainan Chapter. The workshop program includes 6 invited talks, 2 poster sessions, and an IEEE communication and information theory society member meeting.

- iii. Celebration for Shannon Centennial. We celebrated Shannon's 100<sup>th</sup> birthday in Taiwan on April 29, 2016. The celebration were held in Taipei, Hsinchu, Tainan, and Kaohsiung hosted by Prof. Hsuan-Jung Su from National Taiwan University, Prof. Hsiao-Feng (Francis) Lu from National Chiao Tung University, Prof. S. L. Su and Prof. Kuang-Hao (Stanley) Liu from National Cheng Kung University, and Prof. C.-P. Li from National Sun Yat Sen University, respectively. The event was sponsored by both IEEE Information Theory Society Taipei Chapter and IEEE Communication Society Taipei Chapter. The celebration program includes poster exhibits, a short movie about the life and contributions of Shannon, a quiz with gifts, and a light lunch.

**18. Chapter Name: Magnetics Society Taipei Chapter (MAG33)**

- i. Distinguished Lecturers 2016:
- Professor Josep Fontcuberta
- Topic: The Magnetism of Oxides
  - Time: 05/23
- Professor Kazuhiro Hono
- Topic: Materials Challenges for Next-Generation, High-Density Magnetic Recording: Media and Read Heads
  - Time: 10/11
- Professor Teruo Ono
- Topic: Soliton-like magnetic domain wall motion induced by the interfacial Dzyaloshinskii-Moriya interaction
  - Time: 08/01
- ii. Other Speakers:
- Professor Stéphane Mangin
- Topic: All-Optical Helicity-Dependent switching in magnetic nano-structures and devices
  - Time: 02/18
- Professor Yanglong Hou
- Topic: Magnetic Nanomaterials: Chemical Synthesis and Biomedical Applications
  - Time: 03/21
- Professor Min Tai
- Topic: Introduction of STT-RAM
  - Time: 06/02
- iii. Other Activities:

2016 Taiwan Association Magnetic Technology Annual Meeting and summer school for magnetism

- Time: 7/30-31
- We invite 1 DL and following speakers:
  - (1) Prof. Kang L. Wang (Department of Electrical Engineering, University of California, Los Angeles(UCLA))
  - (2) Dr. William (Bill) Gallagher (Department of Physics, University of California at Davis)
  - (3) Robert D. Shull ( NIST Fellow, National Institute of Standards and Technology)
  - (4) Prof. DIENY Bernard (CEA/Granoble Research Director, SPINTEC Chief Scientist, co-founder of start-up EVADERIS)
  - (5) Prof. Peter Fischer (APS Fellow, IEEE Fellow, Materials Sciences Division, Lawrence Berkeley National Laboratory, Department of Physics, UC Santa Cruz)
  - (6) Dr. John Moreland (IEEE Fellow, National Institute of Standards and Technology )

The 4th International Conference of Asian Union of Magnetics Societies (IcAUMS 2016)

- Time: 7/30-31
- We invite 1 DL and following speakers:
  - (1) Prof. Kang L. Wang (Department of Electrical Engineering, University of California, Los Angeles(UCLA))
  - (2) Dr. William (Bill) Gallagher (Department of Physics, University of California at Davis)
  - (3) Robert D. Shull( NIST Fellow, National Institute of Standards and Technology)
  - (4) Prof. DIENY Bernard (CEA/Granoble Research Director, SPINTEC Chief Scientist, co-founder of start-up EVADERIS)
  - (5) Prof. Peter Fischer (APS Fellow, IEEE Fellow, Materials Sciences Division, Lawrence Berkeley National Laboratory, Department of Physics, UC Santa Cruz)
  - (6) Dr. John Moreland (IEEE Fellow, National Institute of Standards and Technology )
  - (7) Prof. Ching-Ray Chang (APS Fellow, IEEE Fellow, Department of Physics, National Taiwan University)
  - (8) Dr. Steve Hwang (VP, Media R&D, Seagate Technology)

19. **Chapter Name: Microwave Theory and Techniques Society Taipei Chapter (MTT17)**

- i. Microwave Distinguished Lecturer:
  - Speaker: Prof. Amir Mortazawi, IEEE Fellow (ECE Department, University of Michigan, Ann Arbor)
  - Date: August 24, 2016
  - Topic: Switchable and Tunable Ferroelectric Devices for Adaptive and Reconfigurable Circuits
  - Location: Graduate Institute of Communication Engineering, National Taiwan University
  - Attendance : 80
  
- ii. Microwave Distinguished Lecturer:
  - Speaker: Prof. Robert H. Caverly, IEEE Fellow (EE Department, Villanova University, Villanova, PA, USA)
  - Date: October 12, 2016
  - Topic: RF Aspects of Magnetic Resonance Imaging
  - Location: BL-101, National Taiwan University
  - Attendance : 100

**20. Chapter Name: Power Electronics Society Taipei Chapter (PEL35)**

- i. 2016 IEEE International Future Energy Challenge (IEEE IFEC)
  - Date: 2016/07/18~07/20
  - Attendance: 96
  - Activity: IFEC is an international student competition for innovation, conservation, and effective use of electrical energy, which is open to college and university student teams from recognized engineering programs in any location. The competition is sponsored by the Institute of Electrical and Electronics Engineers (IEEE) Power Electronics Society (PELS), Power & Energy Society (PES), Industry Application Society (IAS), Industrial Electronics Society (IES), Vehicular Technology Society (VTS) and Power Sources Manufacturers Association (PSMA). The IFEC is initiated in 2001 as a bi-annual event with two topics. Due to the increasing number of participations, the organizing committee decide to hold this competition annually with one topic starting at 2016. For the coming IFEC 2016, the challenge will be focused on the realization of the AC-DC converter with high power density targeted at  $1 \text{ W/cm}^3$ .
  - Participation is on a proposal basis. Those schools that are interested must submit a proposal to the topic chair before October 15th, 2015. Each Proposal will be judged by a distinguished panel of volunteer experts from the IEEE and from the industry. Schools with successful proposals will be notified and qualified for the rest of the competition. The outstanding teams will be invited to attend the final competition which will be held in National Taiwan University, Taiwan, in summer of 2016. There will be a Grand Prize of \$10,000 and three additional awards granted at



\$5,000, \$3000 and \$1,000 each.

The competition results: The Grand Prize Award: Nanjing University of Aeronautics and Astronautics, China; The Second Price Award: National Cheng-Kung University, Taiwan; The Best Education Impact Award: University of Belgrade, Serbia; The Best Presentation Award: National Taiwan University of Science and Technology, Taiwan; The Best Innovation Award: University of Illinois Urbana-Champaign, USA; The Best Report Award: University of Michigan-Dearborn, USA.

- ii. 2016 IEEE DL: Impedance Modeling and Control of Power Electronics in Power Systems, Professor Jian Sun, Rensselaer Polytechnic Institute, IEEE Fellow

Date: 2016/4/29

Attendance: 20

Activity: There are 20 participants in total at the international distinguished lecture, held in National Taiwan University on April. 29, 2016. This talk presents impedance-based small-signal methods for modeling and analysis of power electronics in power systems. Impedance has been used in stability analysis and control design of dc power electronic systems. The principal difficulty in extending the method to ac power systems lies in the fact that an ac system operates along a sinusoidal trajectory and doesn't have a fixed operation point required for small-signal linearization. Different methods to overcome this difficulty will be introduced and compared, with a focus on harmonic linearization and sequence impedance method. The new sequence impedance models are valid both below and above the synchronous frequency, hence can be used to study instability, resonance and other dynamic problems in the EMT (electromagnetic transient) frequency range where phasor-based power system stability theory fails. Application of the method will be demonstrated for PV inverters and wind turbines connected to weak grids as well as offshore wind farms with high-voltage dc transmission. Opportunities to develop advanced control based on the impedance theory will also be discussed. The attendant students got the chance to understand the impedance mismatch between the power system and the power converter is the main cause of instability of the grid-connect power electronics devices.

- iii. 2016 IEEE DL: HVDC grids and Off-Shore Wind Farms, Professor Ramon Blasco-Gimenez, Technical University of Valencia, Rensselaer Polytechnic Institute, Spain

Date: 2016/8/23

Attendance: 25

Activity: Renewable Energy is a key contributor to fight climate change. Moreover, right now, it provides clean electricity at competitive price. In the past few years, the growth of off-shore wind farms has been spectacular, particularly in Europe (North Sea). To make off-shore wind farms more and more competitive, substantial research is taking place to reduce the total cost of electricity generated by this kind of wind farms. This talk address the following topics: State of off-shore wind farms

in Europe; Power Electronics and their control for the connection of off-shore wind farms using HVDC links, including diode rectifiers; European research on meshed HVDC grids.

- iv. 2016 IEEE DL: Overview of the Center for Power Electronics Systems at Virginia, Professor Dushan Boroyevich, IEEE Fellow, PELS former president  
Date: 2016/11/11  
Attendance: 110
- v. Activity: Over 100 participants attended this international distinguished lecture, held in National Taiwan University on Nov. 11, 2016. This talk presents the overview of the world wide recognized Power Electronic Research Center. The Center for Power Electronics Systems (CPES) is a research center within the Bradley Department of Electrical and Computer Engineering at Virginia Polytechnic Institute and State University – also known as Virginia Tech – in the small town of Blacksburg in the state of Virginia in United States of America. Its 5 professors, 10 staff, 50 graduate students, and US\$ 5 million/year research funding are dedicated to improving electronic processing and distribution of electrical energy that impact systems of all sizes – from battery-operated portable electronics to vehicles to regional and national electrical power systems – through global collaborative research and education. The attendant students got the chance to know the research activities in CPES and the IEEE Power Electronics Society.

**21. Chapter Name: Photonics Society Taipei Chapter (PHO36)**

Chapter PHO36 had submitted two L31 meeting reports in this year (i.e., meetings during IEEE ISNE 2015 and OPTIC 2016)

- 2015 IEEE International Symposium on Next Generation Electronics (ISNE) during May 4-6, 2015 (technical sponsor; more than 20 IPS members attended)
- 2015 Summer School on Photonics in July 2015 at National Taiwan University, Taiwan
- Bilateral Photonics Workshop of the National Science Foundation (NSF), US, and the Ministry of Science and Technology (MOST), Taiwan, hosted on May 29, 2015, by National Taiwan University.
- 2016 Optics and Photonics Taiwan during Dec. 3-5, 2016 (technical sponsor and more than 40 IPS members attended)

Technical support the exhibition of “Photonics festival in Taiwan 2016”, 16-18 June, Taipei, Taiwan (more than 20 IPS members attended)

**22. Chapter Name: Product Safety Engineering Society Taipei Chapter (PSE43)**

We held a symposium in 2016, and it had achieved a great milestone: This IEEE Conference on product safety and compliance engineering was the first conference outside U.S. since 2004. IEEE PSES Taipei Chapter was pleased to hold the very first conference in Taipei.

IEEE International Symposium on Product Compliance Engineering - Taiwan 2016  
(IEEE 2016 ISPCE-TW)

Date: December 22, 2016

Location: National Taiwan Normal University, Taiwan, Taiwan

Attendance: Member: 18, Guests 62 : Product safety professional engineer from Brand company, ODM system and power supply manufacturers.

Speakers: Three international speakers, one IEEE fellow and PSES 2017 Presidents and iNARTE Director to give the presentation. One UL PDE was given the presentation on IEC62368-1 Code of ICT safety. And other speakers are from Certify Body, Industry wise and Taiwan Accreditation Lab.

Subject: 1. Probabilistic Safety; 2. How Accreditation System Support Electrical Safety and EMC Laboratories and Lower Technical Trade Barrier; 3. The Role of External Association on Product Safety: APRN; 4. Introduction of iNARTE; 5. Compliance 101; 6. Battery Hazard; 7. IEC 62368-1 Code of ICT Safety ; 8. Selecting the Appropriate Circuit Protection Components; 9. The Application of High Performance Plastics in Electronics Industry; 10. The Importance of Flame Retardant; 11. Case Study – IEC62368-1.

Taiwan, as a grand venue for Information Technology Equipment main producer and with product safety professional population, PSES Taipei Chapter aims to initiate more international conferences on research and discovery in compliance relevant professional field. The debut of 2016 ISPCE –Taiwan was a great success; we hope that the 2nd conference could continue its success and run by formal Call for Paper. The major mission and our vision is to set PSES-Taipei Chapter as a product safety connecting platform and a resourceful support from the IEEE PSES Society and as well as from the industry manufacturer wise

**23. Chapter Name: Reliability Society Taipei Chapter (RL07)**

i. 12/01/2016

The Technical Lecture

Title: Challenges in Natural Language Processing: Question Answering and Dialog System

Speaker: Prof. Yoshinobu Kano

Attendance: 40

- ii. 11/28/2016  
The Technical Lecture  
Title: Can Big Data Change Opinions on Sensitive Data?  
Speaker: Prof. Hendrik Jacob (Jaap) Van Den Herik  
Attendance: 50
- iii. 11/06/2016  
The Technical Lecture  
Title: Machine Type Communications  
Speaker: Prof. Phone Lin  
Attendance: 90
- iv. 10/26/2016  
The Technical Lecture  
Title: The Secure Authentications in Financial Services  
Speaker: Anderson Yang  
Attendance: 90
- v. 10/06/2016  
The Technical Lecture  
Title: On Evaluation Dilemmas in Social Media Research  
Speaker: Prof. Huan Liu  
Attendance: 50
- vi. 05/11/2016  
The Technical Lecture  
Title: Perspectives in Big Data Era: Emerging Opportunities, Key Challenges and Talents Cultivation  
Speaker: **Prof. Vincent S. Tseng** (Computer Science of NCTU)  
Attendance: 40
- vii. 05/04/2016  
Title: Service Management Based on Software Defined Networking and Network Function Virtualization  
Speaker: Li-Der Chou  
Attendance: 120
- viii. 04/27/2016  
The Technical Lecture  
Title: SDN/NFV Technologies and Applications  
Speaker: Prof. Jiann-Liang Chen  
Attendance: 140

- ix. 04/28/2016  
The Technical Lecture  
Title: Harnessing Big Data to Make Cities Smart  
Speaker: **Dr. See-Kiong Ng at Urban System Initiative, Singapore**  
Attendance: 110
- x. 04/06/20165  
The Technical Lecture  
Title: Statistical Modeling for Big Data Analytics  
Speaker: Henry Horng-Shing Lu  
Attendance: 110
- xi. 03/17/2016  
The Technical Lecture  
Title: Securing the Internet of Things: Need for a New Paradigm and Fog Computing  
Speaker: Dr. Tao Zhang, Cisco  
Attendance: 45
- xii. 03/16/2016  
The Technical Lecture  
Title Influence diffusion and optimization in online social network  
Speaker: **Dr. De-Nian Yang**  
Attendance: 90
- xiii. 03/02/2016  
The Technical Lecture  
Title: Device-to-Device Communication with Simultaneous Transmission  
Speaker: Prof. Su, Hsuan-Jung  
Attendance: 90
- xiv. 01/05/2016  
The Technical Lecture  
Title: Monitoring Policy Compliance  
Speaker: Prof. David Basin, ETH Zurich  
Time: 2016.1.5 13:20-15:30  
Attendance: 140

**24. Chapter Name: Sensors Council Taipei Chapter (SEN39)**

- i. Prof. Paul C.-P. Chao newly elected as the chapter chair of Taipei section for IEEE Sensors Council. Prof. Paul C.-P. Chao is Distinguished Professor, Dept. of Electrical Engineering, National Chiao Tung University, Taiwan.

- Sponsored Speech:

- Chair Prof. Chao responded the **speech invitation** from the Energy Harvest Workshop, Virginia Tech, Washington DC, to deliver a speech Sep **6th, 2016**. The speech topic is on “Towards Batteryless IoT Sensors.”
- Subject: Towards Batteryless IoT Sensors

The internet of things (IoT) has recently drawn much attention from industrial and academic societies, since many believe the related technologies could revolutionize the current faces of mobile devices, communication, biotech and healthcare, etc. These IoT technologies in fact relies on new sensors, fast networking, smart big-data analysis and massive cloud storage. For example, towards long-time monitoring of bio-signals at home, the sensors with wearability in small-form factors, light weights, low-power and wireless transmissibility are required to work with a personal cloud to store long-time bio-data and perform big-data analysis, then would be able to conduct preliminary diagnosis and issue early warning. For wearable and low-power sensors, a technology platform of batteryless IoT sensors developed by Sensors IC Lab at NCTU, Taiwan is presented in this talk. The technologies in this platform include (1) high-efficiency PV panels to harvest indoor light; (2) a high-efficiency charge pump circuit with maximum point tracking (MPPT); (3) a low-power visible light communication (VLC) circuit; (4) a batteryless IoT tag; (5) a strain-type blood pressure (BP) sensor; (6) an optical sensor for blood flow and BP; (7) a gas sensor; (8) big-data analysis for sensor calibration and accuracy. In short, the platform aims to serve as the model to develop key technologies of batteryless IoT sensors that would lead to a new phase of IoT sensors.

- Chair Prof. Chao responded the **speech invitation** from the 2016 NCTU-UCSD Bilateral Symposium, University of California at San Diego, USA, 2016, to deliver a speech Sep **6th, 2016**. The speech topic is on “A wearable PPG blood flow sensor.”

Subject: A wearable PPG blood flow sensor

A new photoplethysmographic (PPG) sensor module is designed and implemented as a blood flow sensor for long-time, ubiquitous monitoring on the quality of the arteriovenous grafts (AV grafts) for patients at end-stage renal disease (ESRD). The sensor is small-sized, light-weight, flexible, wearable, and of wireless transmission capability, with the aim to be worn by patients for an extensive time period at home with satisfactory comfort. The components of the PPG flow sensor, such as light-sources, photodetectors, front-end readout and computation processor, is designed, synthesized and specifically optimized for detecting precisely the blood flow of the vessel at AV grafts, which is typically 0.6 cm under skin surface. The sensed flow data is wirelessly transmitted to handheld devices or other receivers at home, and further relayed to cloud data storages for functional assessment and early warning

- Sponsored Speech

- Chair Prof. Chao delivered **one** lectures
- **12/02/2016**,at01:20~03:30pm

Speaker:Prof.Chao

Attendance: 50 guests and students

**Topic:** An optical, portable blood pressure sensor

This talk is dedicated to a feedback mechanism of automatic emittance tuning on a light emitting diode (LED) in a new cuffless photoplethysmograph (PPG) blood pressure (BP) sensor is proposed to achieve full-dynamic-range for the sensed analog signals entering the analog-to-digital converter (ADC) in the designed readout circuit. This is aimed to maximize signal-to-noise (S/N) ratios before physical sensor signals are converted to digitals. The PPG sensor employed herein consists of a pair of a LED and PD, which is known capable of detecting intravascular blood volume change towards real-time BP estimation. The designed readout circuit includes a pre-amplifier, a band-pass filter, a programmable gain amplifier (PGA), a *microcontroller unit* (MCU), and a wireless transmission module. Continuously sensed PPG waveforms are transmitted to a developed graphical user interface (GUI) in a laptop for data storage, feature extraction and calculations on systolic and diastolic blood pressures (SBPs and DBPs). Experiments are conducted with 27 subjects participated in, the data of which successfully validates the critical role of the proposed LED emittance auto-tuning to improve the accuracy of estimated BPs. The results show that with LED auto-tuning enabled, the BP measurement error can be reduced from  $\pm 10$  mm-Hg to be within  $\pm 5$  mmHg for varied skin colors, ages, heights, weights, genders and races.

- **Activities**

- Chair Prof. Chao invites students for promoting memberships on **Sep 29th, 2016**.
- Students get-together and talk to professors on **Sep 29th, 2016**.



- Chair Prof. Chao held a chapter membership meeting on **Sep 29th, 2016** at awarding ceremony.



- ii. 2016/02/04 Sensor demonstration in “NCTU Sensor IC Laboratory Week Seminar”. The event invited the undergraduate and the graduated students. We displayed the

sensor research results and demonstrated the sensor readout results. We also sent out documents to introduce IEEE Sensor Council chapter in Taipei section.

- iii. 2016/06/06 Sensor demonstration in “NCTU Sensor IC Laboratory Week Meeting for Sensor Development Forum”. We invited all graduated students to join the forum and to display the sensor development shared with IEEE Sensor Council information.
- iv. 2016/08/11 Sensor demonstration in “NCTU Sensor IC Laboratory Meeting for a new sensor project”. We invited the other NCTU professors, Prof. Po-Hung Chen and Prof. Po-Tsun Liu, and graduated students to discuss a new sensor project and to share with IEEE Sensor Council information.

**25. Chapter Name: Systems, Man, and Cybernetics Society Taipei Chapter (SMC28)**

- i. SMC Taipei Chapter received the Outstanding Chapter Award from IEEE Taipei Section in June 2016 and Outstanding Chapter Award from IEEE SMC Society in Oct. 2016. These two awards were a great honor to recognize the efforts done by the SMC28 in the past years.
- ii. SMC Taipei Chapter helped host The 24th National Conf. on Fuzzy Theory and its Application, Taichung, Taiwan, Nov. 9-11, 2016. Participants: 150
- iii. SMC Taipei Chapter helped host The Int. Conf. on Fuzzy Theory and its Application, Taichung, Taiwan, Nov. 9-11, 2016. Participants: 250
- iv. SMC Taipei Chapter helped host IEEE Int. Conf. on Systems, Man, and Cybernetics (IEEE SMC2016), Budapest, Hungary, Oct. 9-12, 2016. Participants: 1100. A group of 10 presenters (delegation leader was Prof. C.-C. Tsai, National Chung-Hsin University) were sponsored by the special budget from the MOST to attend and organize the conference.
- v. SMC Taipei Chapter hosted The National Symposium on Systems Science and Engineering (NSSSE 2016), Nantou County, Taiwan, July 7-9, 2016. Participants: 100
- vi. SMC Taipei Chapter hosted 2016 IEEE Int. Conf. on System Science and Engineering (ICSSE 2016), Nantou County, Taiwan, July 7-9, 2016. Participants: 150

**26. Chapter Name: Systems, Man, and Cybernetics Society Taichung Chapter (SMC28)**

- i. International Conference on Advanced Robotics and Intelligent Systems (ARIS2016)  
Date: 2016.8.31~2016.9.2



Location: Taipei Nangang Exhibition Center

Attendance : 150

Activity : The 2016 International Conference on Advanced Robotics and Intelligent Systems (ARIS2016) was held in Taipei Nangang Exhibition Center on August 31-September 2, 2016, presenting 112 papers in total. Many valuable innovations and the state-of-the-art with regard to the topics of the conference have been submitted; they are advanced robotics, intelligent systems, and medicine and healthcare technologies, etc. Much in-depth discussions concerning with how advanced robotics and intelligent systems should be further developed were found at the conference. The conference comprised not only traditional paper presentations, but also video presentations, demonstrating itself as an effective and efficient way for research synergy of potential research topics. The conference also invited two plenary speakers, Prof. Jae-Bok Song, Prof. Tzoo-Hseng S. Li, and Mr. Rich Walker to give outstanding speeches with insight inspiration to the audiences. As a whole, the conference has achieved the objectives of advocating the theory and applications of advanced robotics and intelligent systems.

ii. 2015 National Symposium on System Science and Engineering (NSSSE2016)

Date: 2016.7.7~2016.7.9

Plenary Speakers: Dr. Jun Liu, Dr. Han-Xiong Li, and Dr. Kai-Tai Song

Location: Tatung University

Attendance : 188

Activity : This symposium was organized by Taiwan Association of System Science and Engineering, and hosted by Tatung University, Taipei, Taiwan, July 7-9, 2016. The symposium was composed of three invited plenary speeches from Dr. Jun Liu, Dr. Han-Xiong Li, and Dr. Kai-Tai Song, about 100 technical oral presentations, one best student paper award competition session and several exhibitions from local technological companies. During the symposium period, Prof. Huang presented recent advances on mobile medical systems and BMI technologies, and Prof. Chou told about key technologies in Industry 4.0. In addition, more than one hundred technical papers were presented by scholars from universities and industrial institutions. This symposium not only had conventional oral presentations, but also encouraged some hands-on systems together with video shows. It is believed that this symposium was very helpful in effectively spreading novel research results, innovations and the state of arts, to appropriate researchers and practitioners, thus facilitating the advance and progress of system science and engineering technology in both academia and industry. Many IEEE SMCS members and student members were very impressed with Professors Huang's and Chou's concise and inspiring presentations and their novel and outstanding research results. In addition, these plenary speeches let the attendees of this symposium learn more about brain machine interfacing (BMI) technologies and their applications.

- iii. TITLE 1:Technology and Policy Options for a Low-Emission Energy System in Canada: Findings of an Expert Panel on Energy Use and Climate Change

TITLE 2:How to Conduct Original Research in Graduate Studies

Date: 2016.05.19

Speaker : Prof. Keith W. Hipel

Location: National Chung Hsing University

Attendance : 70

Activity: In the event, the Taichung Chapter, IEEE SMCS, invited Prof. Keith Hipe, Past President, Academy of Science, Royal Society of Canada. He is a distinguished university professor, PhD, DrHC, PEng, Hon.D.WRE with many recognized institutional fellows of FRSC, FCAE, FEIC, FIEEE, FASCE, FAWRA, FINCOSE, Department of Systems Design Engineering, University of Waterloo, Past President, Academy of Science, Royal Society of Canada.Senior Fellow, Centre for International Governance Innovation. Fellow, Balsillie School of International Affairs. Coordinator, Conflict Analysis Group, University of Waterloo. On the basis of Prof. Keith Hipel's expertise and research results, he gave two very interesting and inspring talks on "Technology and Policy Options for a Low-Emission Energy System in Canada: Findings of an Expert Panel on Energy Use and Climate Change " and "How to Conduct Original Research in Graduate Studies". Many IEEE members and student members were very impressed with his concise and wonderful presentations and his novel and outstanding research results. In addition, his visit and academic exchange at Taichung Chapter, IEEE SMCS, let members and students to learn more about Technology and Policy Options and technical writing.

The event was held by two talks, and by focusing on exchange of research experience. The enthusiastic responses from all participants and students indicate that this activity not only has reached its desired goals, but also has assisted many IEEE members and student members to gain knowledge about technology and olicy Options, and technical writing.

- iv. Multi-scale Control Design for Intelligent Manufacturing

Date: 2016.07.08

Speaker : Prof. Han-Xiong Li

Location: National Chung Hsing University

Attendance : 11

Activity: In the event, the Taichung Chapter, IEEE SMCS, invited Prof. Han-Xiong Li, who is a Professor, Department of Systems Engineering and Engineering Management, City University of Hong Kong, China; School of Mechanical & Electrical Engineering, Central South University Hunan, China. According to Prof. Han-Xiong Li's expertise and research results, he made a very interesting and inspring sppech on "Multi-scale Control Design for Intelligent Manufacturing".

Many IEEE SMCS members and student members were very impressed with his concise and wonderful presentation and his novel and outstanding research results. In addition, his visit and academic exchange at Taichung Chapter, IEEE SMCS, let all the members and student members learn more about multi-level control design using fuzzy logics.

The event was held by a disquisition, and also by focusing on exchange of research experience. The enthusiastic responses from all participants indicate that this activity not only reached its desired goals, but also helped many IEEE SMCS members and student members gain knowledge and experience about intelligent manufacturing using multi-scale fuzzy control methodologies.

v. Physiological platform of Powered Exoskeleton- Intelligent assistant machinery

Date: 2016.09.07

Speaker : Dr. Lijun Shang

Location: National Chung Hsing University

Attendance : 21

Activity: In the event, the Taichung Chapter, IEEE SMCS, invited Dr. Lijun Shang, who is an international lecture at college of Life Science, University of Bradford, UK, an senior visiting scholar at University of Oxford in Biological anatomy and Genetics, and an adjunct Professor at Northwestern University and Shian Chiao-Tung University. According to Dr. Lijun Shang's expertise and research results, he made a very interesting and inspring talk on "Physiological platform of Powered Exoskeleton- Intelligent assistant machinery". Many IEEE SMCS members and student members were impressed with his concise and wonderful presentations and his novel and outstanding research results. In addition, his visit and academic exchange at Taichung Chapter, IEEE SMCS, let members and students learn more about the physical signal measurements and processing for intelligent assistant machinery.

The event was held by a disquisition, and also by focusing on exchange of research experience. The enthusiastic responses from all participants indicate that this activity not only reached its desired goals, but also help many IEEE members and student members gain knowledge about Powered Exoskeleton and intelligent assistant machinery.

vi. Design and Development of Cognitive and Meta-cognitive Machine Learning

Techniques

Date: 2016.11.07

Speaker : Prof. Er Meng Joo

Location: National Chung Hsing University

Attendance : 10

Activity: In the event, the Taichung Chapter, IEEE SMCS, invited Professor Er Meng Joo to give a invited talk at Department of Electrical Engineering, National Chung Hsing University on 7 November, 2016 . Prof. Er is currently a Full Professor in Electrical and Electronic Engineering, Nanyang Technological University, Singapore. He served as the Founding Director of Renaissance Engineering Programme and an elected member of the NTU Advisory Board and from 2009 to 2012. He served as a member of the NTU Senate Steering Committee from 2010 to 2012. Based on Professor Er Meng Joo's expertise and research results, he gave a very interesting and insightful speech on "Design and Development of Cognitive and Meta-cognitive Machine Learning Techniques". Many IEEE SMCS members and student members joined his concise and wonderful presentations and his novel and outstanding research results very much. The audience rased several questions for Prof. Er, and he replied them very well. In addition, his visit and academic exchange at Taichung Chapter, IEEE SMCS, let members and students learn more about Meta-cognitive Machine Learning Techniques.

This event was held by a disquisition, and also by focusing on exchange of research experience. The enthusiastic responses from all participants indicate that this activity not only has reached its desired goals, but also has assisted many IEEE SMCS members and student members to gain knowledge about meta-cognitive machine learning techniques.

- vii. SMC Taichung Chapter organized workshops to promote and recruit new members to join IEEE SMCS, Taichung , Taiwan , 19May and 7 November 7, 2016 , 2015.  
Participants:36

**27. Chapter Name: Solid-State Circuits Society Taipei Chapter (SSC37)**

- i. How Future Mobility Meets IT: Embedded Cyber-Physical System Designs Revisit Semiconductor Technology  
Speaker : Dr. Hideto Hidaka (Renesas)  
Date : 2016/03/10  
Place : National Tsing Hua University (NTHU), Hsicnhu, Taiwan
- ii. Basics of low-power SAR ADCs  
Speaker : Prof. Pieter Harpe (Eindhoven University of Technology)  
Date : 2016/09/05  
Place : National Taiwan University Taipei, Taiwan
- iii. An Inductorless Fractional-N Synthesizer Architecture  
Speaker : Prof. Behzad Razavi (University of California, Los Angeles)

Date :2016/10/14

Place : National Taiwan University Taipei, Taiwan

iv. Recent Developments in Visible Light Communication

Speaker : Prof. C. Patrick YUE (Department of Electronic and Computer Engineering, HKUST)

Date :2016/12/22

Place : National Tsing Hua University (NTHU), Hsichnu, Taiwan

**28. Chapter Name: Vehicular Technology Society Taipei Chapter (VT06)**

IEEE VTS Taipei Chapter has sponsored or co-sponsored 7 events during the year of 2016, each of which is described in more detail as follows:

i. IEEE VTS Distinguished Lecture Given by Prof. Pingzhi Fan from Southwest Jiaotong University, China – *Non-orthogonal Multiple Access Techniques for Fifth Generation (5G) Cellular Network*

Time: 03/15/2016; 16:00 p.m.-17:30 p.m.

City: Taipei

Country: Taiwan

Meeting Keywords: Non-orthogonal Multiple Access, 5G

Guest Attendance: 50-60

IEEE Member Attendance: 15

Invite Students: Yes

Event Description: Thanks to the invitation by Prof. Hung-Yu, Wei (the current chair of IEEE VTS Taipei Chapter) of National Taiwan University, Prof. Pingzhi Fan visited Taiwan on 2016/3/15 to deliver a distinguished lecture in National Taiwan University. More than 50 audiences participated this distinguished lecture; most of whom from the EE, GICE and CSIE department of National Taiwan University. The topic of Prof. Fan is “Non-orthogonal Multiple Access Techniques for Fifth Generation (5G) Cellular Network”. In the beginning, Prof. Fan first provided an introduction to the basics of Non-Orthogonal Multiple Access (NOMA) and Multiple Access (MA), such as typical NOMA power allocation policies, the use of successive interference cancellation (SIC) and the relationship between NOMA and conventional information theoretic concepts, where a simple example with two users is used to illustrate the benefit of NOMA.

Prof. Fan then introduced the difference between conventional MA techniques and NOMA techniques. NOMA is characterized by accommodating more users via non-orthogonal resource allocation. Also, basic principles of orthogonal and non-orthogonal MA techniques were systematically discussed in Prof. Fang’s talk.

Finally, the recent industrial efforts for the standardization of NOMA in LTE and 5G networks have been conclusively mentioned by Prof. Fan, followed by a

detailed discussion of research challenges and potential solutions with the NTU audiences.

This event was co-sponsored by IEEE VTS Taipei Chapter.

- ii. IEEE VTS Distinguished Lecture Given by Dr. Tao Zhang from Cisco –*Fog Computing for Securing Connected Vehicles in 5G Environments*

Time: 03/16/2016; 3:40 p.m.-5:00 p.m.

City: Taipei

Country: Taiwan

Meeting Keywords: Fog Computing, 5G

Guest Attendance: 40-50

IEEE Member Attendance: 15

Invite Students: Yes

Event Description: Dr. Zhang was invited by Prof. Hung-Yu Wei, (the current chair of IEEE VTS Taipei Chapter) of National Taiwan University to give a distinguished speech, entitled as “Fog Computing for Securing Connected Vehicles in 5G Environments” on March 16, 2016. Dr. Zhang delivered a distinguished lecture in National Taiwan University. More than 50 audiences participated this distinguished lecture; most of whom from the EE, GICE and CSIE department of National Taiwan University.

Dr. Zhang first introduced the development of fog computing focusing on its concepts, applications and underlying issues one may encounter in designing and implementing fog computing systems. Dr. Zhang then described the scenario of Securing Connected Vehicles in 5G Environments: With the surge demand on high-security vehicles at anywhere, how to address the ubiquitous user demand and accommodate the explosive growth of mobile traffics are the key issues to the next generation mobile networks. Dr. Zhang also described “The most damaging security vulnerabilities, however, are only emerging as vehicles begin to connect to the external world such as with the Internet, other vehicles, wireless networks at vehicle dealers, and roadside Intelligent Transportation System (ITS) networks”.

In summary, Dr. Zhang highlighted security challenges in 5G environment and introduced a new security paradigm, powered by fog computing, for addressing these new challenges. In Q&A session, Dr. Zhang also shared his professional experience with the NTU audiences.

This event was co-sponsored by IEEE VTS Taipei Chapter.

- iii. IEEE VTS Distinguished Lecture Given by Prof. Yi Qian from University of Nebraska-Lincoln –*Wireless Network Modeling and Simulations*

Time: 2016/04/18; 14:20 p.m.-15:30 p.m.

City: Taipei

Country: Taiwan

Guest Attendance:50-60

IEEE Member Attendance: 10

Invite Students: Yes

Meeting Keywords: Multi-hop, Vehicular ad-doc networks,  
Mobile ad-hoc networks

Event Description: Prof. Qian was invited by Prof. Hung Yu Wei of National Taiwan University to give a VTS Distinguished Lecture, entitled as “*Wireless Network Modeling and Simulations*” on April 18, 2016. He first introduced his recent research on multi-hop mobile wireless networks and protocol issues. Then he presented a performance modeling framework and detailed techniques for analyzing the time varying performance of mobile wireless networks, and also demonstrated the performance modeling framework for dynamic behavior of mobile wireless networks, and showed the scenarios of modeling and performance analysis for two specific wireless networks: vehicular ad-doc networks & mobile ad-hoc networks. Extensions to the basic model include incorporating energy consumption, interference and propagation effects into the hybrid modeling framework to improve its fidelity.

This event was co-sponsored by IEEE VTS Taipei Chapter.

- iv. IEEE VTS Distinguished Lecture Given by Prof. Yuguang “Michael” Fang from Department of Electrical and Computer Engineering, University of Florida—*Modeling, Theory and Practice: Lessons Learned*  
Time: 2016/6/16; 11:00 p.m.-12:00 p.m.  
City: Taipei  
Country: Taiwan  
Meeting Keywords: Modeling, Practice  
Guest Attendance: 70-80  
IEEE Member Attendance: 20  
Invite Students: Yes

Event Description: Thanks to the invitation by Prof. Hung-Yu Wei of National Taiwan University, Prof. Yuguang “Michael” Fang visited Taiwan on 2016/6/16 to deliver a distinguished lecture in National Taiwan University (NTU) in Taipei. This lecture attracted more than 70 audiences to participate in, most of whom are from the EE, GICE and CSIE departments of NTU.

The topic of Prof. Fang is “Modeling, Theory and Practice: Lessons Learned”. In the beginning, Prof. Fang drew the attention of the audience by asking a big question of “What Engineers Do?”, which is quite essential to every undergraduate student or beginning graduate student to ponder and probe into in order to set out to successfully build a research career and end with establishing a good research profession in the future. He then pointed out “Research on wireless networks, as any other engineering fields, heavily relies on realistic modeling from which theory can be developed to better understand the network problems and better design methodology can be obtained. Unfortunately, often times pursuit of theoretical

developments and mathematical beauty tends to drag models to unrealistic play field, leading to the downfall of seemingly fruitful research directions.” Therefore, to avoid significant disconnection between theory and practice, a good engineer should always revisit practical problems, mathematical model, and analysis. Some research directions in wireless networks such as coverage, connectivity, capacity were carefully discussed and the pitfalls were pinpointed by Prof. Fang. On the basis of Prof. Fang’s own research experience and observation, he shared with the audience what he had learned and what he thought a good researcher and engineer should have done in the research fields.

This event was co-sponsored by IEEE VTS Taipei Chapter.

- v. IEEE VTS Distinguished Lecture Given by Prof. Kui Ren from State University of New York at Buffalo(UB) –*Mobile Crowdsourcing for Large-Scale Building Indoor Reconstruction: Floor-plan, Indoor Panorama, and Beyond*  
Time: 2016/9/28; 10:30 a.m.-12:00 noon  
City: Taipei  
Country: Taiwan  
Meeting Keywords: Mobile crowdsourcing, IndoorCrowd2D  
Guest Attendance: 35  
IEEE Member Attendance: 15  
Invite Students: Yes  
Event Description: Prof. Kui Ren from State University of New York at Buffalo (UB), U.S.A., was invited to give a distinguished lecture, entitled as “*Mobile Crowdsourcing for Large-Scale Building Indoor Reconstruction: Floor-plan, Indoor Panorama, and Beyond*”, on September 29<sup>th</sup> in National Taiwan University (NTU) in Taipei.

Prof. Ren gave an overview of their recent research on tackling the reconstruction of the indoor interior-view (panorama) and floor-plan of buildings due to the technology advancements. They aimed to solve the challenge by utilizing the idea of mobile crowdsourcing and proposed, designed, and prototypes, a smartphone-empowered crowdsourcing system for indoor-scene reconstruction in an extremely cost-effective manner. Their evaluation results demonstrated that the proposed IndoorCrowd2D achieves high result-accuracy. During the Q&A section, the interaction between Prof. Ren and attendees was also great and quiet inspiring.

This event was co-sponsored by IEEE VTS Taipei Chapter.

- vi. IEEE VTS Distinguished Lecture Given by Prof. Jumin Wang from , The Ohio State University –*Vehicle Driving Safety and Energy Efficiency Enhancements by V2X-Incorporated Controls*  
Time: 2016/10/3; 16:30 p.m.-17:20 p.m.  
City: Taipei  
Country: Taiwan



Meeting Keywords: Vehicle, V2X, Synergistic combinations

Guest Attendance: 85

IEEE Member Attendance: 15

Invite Students: Yes

Event Description: Thanks to the invitation by Prof. Hung-Yu, Wei (the current chair of IEEE VTS Taipei Chapter) of National Taiwan University, Prof. Junmin Wang visited Taiwan on 2016/10/3 and delivered a distinguished lecture in National Taiwan University. More than 80 audiences participated this distinguished lecture; most of whom are from the EE, GICE and CSIE departments of NTU. Prof. Wang started with an overview of the V2X technologies, such as vehicle-to-vehicle, vehicle-to-infrastructure, and vehicle-to-human communications, offering with an unprecedented information richness and availability, which if utilized intelligently may enable substantial improvements on vehicle driving safety and energy efficiency that are of societal importance. He then introduced a variety of vehicle system estimation and control research activities aiming to safe and efficient ground transportation by leveraging the V2X technology. Innovative syntheses of estimation, optimization, and control theories with physical understanding of vehicle and transportation systems for conventional, electrified, connected and automated vehicles was emphasized through examples. The heated discussion in Q&A session proved this lecture, co-sponsored by the IEEE VTS Taipei Chapter, was quite successful.

- vii. IEEE VTS Distinguished Lecture Given by Prof. Kui Ren from State University of New York at Buffalo(UB) –*Mobile Crowdsourcing for Large-Scale Building Indoor Reconstruction: Floor-plan, Indoor Panorama, and Beyond*

Time: 2016/10/24; 16:00 p.m.-17:00 p.m.

City: Taipei

Country: Taiwan

Meeting Keywords: Privacy-preserving, Differential privacy (DP),  
Dependent differential privacy (DDP)

Guest Attendance: 40-45

IEEE Member Attendance: 5

Invite Students: Yes

Event Description: Thanks to the invitation by Prof. Hung-Yu, Wei (the current chair of IEEE VTS Taipei Chapter) of National Taiwan University, Prof. Junshan Zhan visited Taiwan on 2016/10/24 to deliver a distinguished lecture in National Taiwan University. More than 40 audiences participated this distinguished lecture; most of whom from the Department of Computer Science & Information Engineering of National Taiwan University.

The topic of Prof. Zhang is “Privacy-Preserving Data Analytics: From Economic Foundation to Dependent Differential Privacy”. In the beginning, Prof. Zhang introduced his current study focusing on fundamental problems, such as privacy/security, in information networks and energy networks. The model, collecting

private data based on "informed consent", is becoming untenable, with vague privacy policies and a behind-the-scenes data brokerage market becoming the norm. Therefore, two fundamental issues needed to be addressed: (i) data subjects have no control of data privacy after transferring private data to the data collector; and (ii) the data collector has sole ability to protect users' private data.

In his study, he proposed a paradigm shift and advocated a new, market-based approach: data subjects control their own data privacy by reporting noisy data, and data collectors provide incentives in exchange for receiving more accurate data. To tackle this challenge, he defined dependent differential privacy (DDP) for correlated data based on the semantic meaning of privacy. The result showed that dependent differential privacy notion defended against the strongest adversary and also could be quantitatively deduced by differential privacy with a stronger privacy parameter.

Finally, the recent efforts on privacy-preserving data analytics have been conclusively mentioned by Prof. Zhang, followed by a detailed discussion of research challenges and potential solutions with the NTU audiences. This event was primarily sponsored by IEEE VTS Taipei.

### 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

#### ➤ Conferences

- International Solid-State Circuits Conference 2016 review workshop, 2016.5.15-2016.5.16
- 2016 IEEE International Conference on Consumer Electronics – Taiwan, 2016.5.27-2016.5.29
- 2016 Summer School on Information/Communication Theory and Technologies, 2016.8.1-2016.8.4
- 2016 IT-COM Fall, 2016.8.18-2016.8.19.
- International Symposium on Physics and Applications of Laser Dynamics 2016, 2016.9.7-2016.9.9
- International Conference on Space, Aeronautical and Navigational Electronics 2016, 2016.11.24-2016.11.25
- IEEE Symposium on Product Safety Engineering 2016, 2016.12.22

### B.4 Students Activities

- Total number of Student branches in the Section: 19
1. **Student Branch Name: IEEE NCTU Student Branch (National Chiao Tung University)**

Student Branch Chair: Chian-Yu Lin  
 Student Branch Counselor: Bo-Cheng Lai

2. **Student Branch Name: CE Society (CES) Student Branch Chapter at NCTU**  
 Student Branch Chair: Jia-Ching Chou  
 Student Branch Counselor: Ti-hao Chiang
3. **Student Branch Name: ED Society (EDS) Student Branch Chapter at NCTU**  
 Student Branch Chair: H. W. Chen  
 Student Branch Counselor: Tuo-Hung Hou
4. **Student Branch Name: IEEE NTU Student Branch (National Taiwan University)**  
 Student Branch Chair: Pin-Chun Hsu  
 Student Branch Counselor: Shih-Yuan Chen
5. **Student Branch Name: IEEE NCU Student Branch (National Central University)**  
 Student Branch Chair: Chi Su  
 Student Branch Counselor: Jen-Inn Chyi
6. **Student Branch Name: IEEE YZU Student Branch (Yuan Ze University)**  
 Student Branch Chair: Mostafa Al-Harbawi  
 Student Branch Counselor: Jacky D. Peng
7. **Student Branch Name: SMC Society (SMCS) Student Branch Chapter at YZU**  
 Student Branch Chair: Ming-Hung Lin  
 Student Branch Counselor: Chih-Min Lin
8. **Student Branch Name: IEEE NTUST Student Branch (National Taiwan University of Science and Technology)**  
 Student Branch Chair: Yu-Chuan Chang  
 Student Branch Counselor: Shyi-Ming Chen
9. **Student Branch Name: SMC Society (SMCS) Student Branch Chapter at NTUST**  
 Student Branch Chair: Li-Wei Lee  
 Student Branch Counselor: Shyi-Ming Chen
10. **Student Branch Name: IEEE NTOU Student Branch (National Taiwan Ocean University)**  
 Student Branch Chair: TBD  
 Student Branch Counselor: Mu-Der Jeng
11. **Student Branch Name: IEEE NTHU Student Branch (National Tsing Hua University)**  
 Student Branch Chair: Yi-Shyan Lin  
 Student Branch Counselor: Chih-Cheng Hsieh

12. **Student Branch Name: PEL Society (PELS) Student Branch Chapter at NTHU**  
 Student Branch Chair: Meng-Jiang Tsai  
 Student Branch Counselor: Po-Tai Cheng
13. **Student Branch Name: ED Society (EDS) Student Branch Chapter at NTHU**  
 Student Branch Chair: Li-Chiang Chao  
 Student Branch Counselor: Jia-Huei Zheng
14. **Student Branch Name: IA Society (IAS) Student Branch Chapter at NTHU**  
 Student Branch Chair: Hsin-Chih Chen  
 Student Branch Counselor: Po-Tai Cheng
15. **Student Branch Name: IEEE NCHU Student Branch (National Chung Hsing University)**  
 Student Branch Chair: Feng-Chun Dai  
 Student Branch Counselor: Ching-Chih Tsai
16. **Student Branch Name: SMC Society (SMCS) Student Branch Chapter at NCHU**  
 Student Branch Chair: Feng-Chun Dai  
 Student Branch Counselor: Ching-Chih Tsai
17. **Student Branch Name: IEEE NSYSU Student Branch (National Sun Yat-sen University)**  
 Student Branch Chair: Bin-Han Liu  
 Student Branch Counselor: Jen-Hao Teng
18. **Student Branch Name: IEEE NCUE Student Branch (National Changhua University of Education)**  
 Student Branch Chair: Hui-Xin Qin  
 Student Branch Counselor: De-Jun Deng
19. **Student Branch Name: IEEE CYCU Student Branch (Chung Yuan Christian University)**  
 Student Branch Chair: Hsu-You Kao  
 Student Branch Counselor: Shih-Hsu Huang
- Number of Active Student Branches (Student Branches who have reported required number of meetings during the year): 7
1. **Student Branch Name: IEEE NCTU Student Branch (National Chiao Tung University)**

Topic	When Less is More: Voltage Guardband Management for Heterogeneous Architectures in Exascale System
Speaker	Professor Vijay Janapa Reddi, UT Austin

Time/Date	Oct. 13 (Thursday), 10am~12pm, 2016
Location	Engineering Building C 115
Content	<p>The GPU architecture has become the mainstream workhorse for many of today's scientific and high-performance computing needs. But the GPU's computational capability comes at a high price. A high-end GPU consumes close to 300 watts during normal operation, closely approaching the practical thermal cooling constraints. To ensure its sustained role in building future Exascale systems, current GPU energy-efficiency optimization efforts need to move beyond conventional microarchitecture design and power management (i.e., DVFS) techniques. The talk presents new opportunities and challenges to improve the GPU's energy efficiency by targeting its operating voltage guardband, a previously untapped resource for energy optimization. Measured results from commercial off-the-shelf systems show significant opportunity for optimization. By carefully operating the system at its peak efficiency points (i.e., reducing the supply voltage to its minimal point without compromising reliability), improvements of up 25% can be achieved. The key challenge, however, lies in understanding how transient voltage droops affect GPU application resilience and building mechanisms that can tolerate and predict transient errors. To that end, the talk focuses on the techniques that enable CPU+GPU systems to exploit the benefits of a reduced guardband within the context of a novel architectural framework to tolerate errors.</p>

Topic	Finding Pareto-Optimal Hardware Designs: IP Core Generation and Active Learning
Speaker	Markus Püschel, Department of Computer Science, ETH Zurich, Switzerland
Time/Date	Oct. 19 (Wednesday), 10am~12pm, 2016
Location	Engineering Building C 427
Content	<p>For a given functionality there are usually many possible hardware designs with different area/performance trade-offs. Of interest are only those that represent optimal trade-offs, i.e., are Pareto-optimal, but obtaining those is costly. We present two ideas for obtaining Pareto-optimal designs with dramatically reduced effort for certain basic functions such as the fast Fourier transform or sorting. The first is the computer generation of the design space using domain-specific languages. The second is an active learning method that can predict the Pareto front while evaluating only few designs.</p>

## 2. Student Branch Name: CE Society (CES) Student Branch Chapter at NCTU

- i. Assistance and participation of ICCE-TW 2015
- ii. Section promotion in ISCE 2015 (Madrid, Spain)

## 3. Student Branch Name: IEEE NCU Student Branch (National Central University)

Date	Event	Content	Student
2016/3/1	<b>Introduction of IEEE Xplore</b>	Introduction of IEEE Xplore resource	All student members
2016/3/9	<b>Orientation Party</b>	Introduction of IEEE Student Branch in NCU	All student members
2016/3/23	<b>Student Presentation 1</b>	Drive To Future--Self-driving Cars	TING-RONG LAI
2016/3/30	<b>Student Presentation 2</b>	Software Defined Network	YU- MING HU
2016/4/6	<b>Student Presentation 3</b>	Control of robotic arm	YOU- WEI LIU
2016/4/20	<b>Student Presentation 4</b>	Brain computer interface	YU- REN XIAO
2016/4/27	<b>Student Presentation 5</b>	Physical Information Systems	RONG-CUN PAN

2016/5/3	<b>Institution visit</b>	Taiwan Semiconductor Manufacturing Company, Limited	All student members
2016/5/11	<b>Student Presentation 6</b>	Radiating of Chips	YI-RU YANG
2016/5/18	<b>Student Presentation 7</b>	multitpath TCP	Z- KUAN LIU
2016/5/24	<b>Laboratory visit</b>	MSIC Lab, No reflection lab, MINE Lab, Clean room(Fab)	All student members
2016/6/1	<b>Project Presentation</b>	Introduction of Student's Projects	MING CHEN
2016/6/8	<b>Final Party</b>	Giving award to well-performed students	All student members
2016/9/22	<b>Orientation Party</b>	Introduction of IEEE Student Branch in NCU	All student members
2016/10/12	<b>Student Presentation 1</b>	Wearable-Device	MING CHEN,CHI SU
2016/10/26	<b>Student Presentation 2</b>	Smart City	JENG-SHIUNG CHEN,Yen-Po Lin
2016/11/9	<b>Student Presentation 3</b>	Big Data & Analytics for Healthcare	CHIH-CHUAN CHANG,MING-YU JIANG,JIUN-JIE WANG
2016/11/23	<b>Student Presentation 4</b>	Eye Tracking	YI-RU YANG,SHAUBIN HUANG
2016/12/7	<b>Project Presentation 1</b>	The Development and Status of Semiconductor in Taiwan	CHIH-LUNG LIN
2016/12/21	<b>Project Presentation 2</b>	Introduction of Semiconductor and TSMC	LI-TE HSU
2017/1/4	<b>Final Party</b>	Giving award to well-performed students	All student members

**4. Student Branch Name: IEEE NTUST Student Branch (National Taiwan University of Science and Technology)**

Four talks of the IEEE SMC Student Branch Chapter at NTUST were held in 2016, shown as follows:

- i. Date: September 27, 2016 (Tuesday) 9:30 AM~ 10:30 PM  
Title: An interval-valued intuitionistic fuzzy permutation method with likelihood-based preference functions and its application to multiple criteria decision analysis  
Speaker: Wen-Hsin Han
- ii. Date: September 27, 2016 (Tuesday) 10:30 AM~ 11:30 PM  
Title: Autocratic decision making using group recommendations based on ranking interval type-2 fuzzy sets  
Speaker: Li-Wei Kuo
- iii. Date: December 20, 2016 (Tuesday) 9:30 AM~ 10:30 AM  
Title: A clustering based forecasting algorithm for multivariate fuzzy time series using linear combinations of independent variables  
Speaker: Chai-Yi Li

- iv. Date: December 20, 2016 (Tuesday) 10:30 AM~ 11:30 AM  
 Title: Fuzzy multicriteria decision making method based on the improved accuracy function for interval-valued intuitionistic fuzzy sets  
 Speaker: Yan-Huei Wu

5. **Student Branch Name: ED Society (EDS) Student Branch Chapter at NTHU**

In this year, we held three invited talks, which were performed by distinguished scholars known for their studies in power semiconductor devices. Most of the student chapter members attended these talks.

- i. Date: 2016/11/02  
 Venue: Room 920, Delta Building, National Tsing Hua University, Taiwan  
 Speaker: Prof. Noboru Ohtani (School of Science and Technology, Kwansei Gakuin University, Japan)  
 Talk Title: Progress in SiC Power Semiconductor Technology  
 Summary of Activities: On November 2, 2016, Prof. Noboru Ohtani gave us a speech entitled “Progress in SiC Power Semiconductor Technology”. Prof. Noboru Ohtani does research on the growth of SiC crystal. In this speech, he mainly talks about some state of art technology and quality improvement of SiC crystals for power device application. Some recent achievements in the SiC material and devices technologies are also highlighted. In the last decade, significant progress has been achieved in the crystal growth technology of SiC single crystals. And the ability to controllably dope the crystals with donor and acceptor impurities is improved as well. 100 and 150 mm diameter 4H-SiC epitaxial wafers with low dislocation density have already been brought to market. However, widespread commercialization of SiC power devices is still hindered by technology issues related to SiC crystals. Therefore, to understand SiC crystal growth process is essential for further development of SiC devices.
- ii. Date: 2016/11/18  
 Venue: Room 919, Delta Building, National Tsing Hua University, Taiwan  
 Speaker: Prof. Jr-Hau He (King Abdullah University of Science and Technology)  
 Talk Title: Flexible, Foldable and Multi-Functional Paper-Based Electronics  
 Summary of Activities: On November 18, 2016, Prof. Jr-Hau He gave us a speech entitled “Flexible, Foldable and Multi-Functional Paper-Based Electronics”. Prof. Jr-Hau He’s research interest lies in the development of flexible electronics. In this speech, he mainly talks about the recent progress and achievement in his laboratory. Paper, which is flexible, foldable and cost-efficient, has attracted lots of attention in this field. And Prof. He has used paper as substrate and developed the first nonvolatile resistive memory by all-printing techniques. Moreover, the algorithm of Origami art is also implemented into the device design for the flexible

electronics. Devices, such as photo detector and nano-generators have been developed as well. Prof. He believes that achievements in this kind of devices might provide a new solution for the future energy harvesting and sensor design.

#### 6. Student Branch Name: IA Society (IAS) Student Branch Chapter at NTHU

Topic	習以為常的電價，還是習焉不察的風險？
Speaker	陳中舜 博士 中華經濟研究院
Time/Date	13:30-15:00, FRI., October 7, 2016
Location	Rm 104, EECS

Topic	大同公司能源解決方案
Speaker	陳貽評 博士 大同公司
Time/Date	14:20-16:00, FRI., October 14, 2016
Location	Rm 104, EECS

Topic	台達電馬達變頻驅動與高功率電力電子技術發展
Speaker	林宗佑 大功率產品部研發副理 台達電子公司
Time/Date	13:30-15:00, FRI., October 28, 2016
Location	Rm 104, EECS

Topic	Control of Permanent-Magnet Synchronous Motor and Generator Drives
Speaker	張淵智 教授 國立中正大學
Time/Date	13:30-15:00, FRI., November 04, 2016
Location	Rm 104, EECS

Topic	保護電驛實務
Speaker	簡文通 處長 台灣電力公司
Time/Date	14:20-16:00, FRI., November 18, 2016
Location	Rm 104, EECS

Topic	適用不同電源之電池供應器
Speaker	陳耀銘 教授 國立台灣大學
Time/Date	14:20-16:00, FRI., November 25, 2016
Location	Rm 104, EECS

Topic	Intelligent Control of a Maximum Power Point Tracker for PV Arrays
Speaker	余國瑞教授 國立中正大學
Time/Date	14:20-16:00, FRI., December 02, 2016
Location	Rm 104, EECS

Topic	用於電力電子之協同模擬設計
Speaker	黃明熙教授 國立台北科技大學
Time/Date	14:20-16:00, FRI., December 09, 2016
Location	Rm 104, EECS

Topic	高效能交換式電源
Speaker	林景源教授 國立台灣科技大學電子工程學系
Time/Date	14:20-16:00, FRI., December 23, 2016



Location	Rm 104, EECS
Topic	Control of Power Electronic- High Frequency Signal Injection Techniques
Speaker	胡凱維博士 台達電子
Time/Date	14:20-16:00, FRI., January 06, 2017
Location	Rm 104, EECS

**7. Student Branch Name: IEEE CYCU Student Branch (Chung Yuan Christian University)**

Date	2016/10/18			(yyyy/mm/dd)	
Event	Technical Discussion Meeting				
Location	Electrical Engineering and Computer Science Building, Chung Yuan Christian University				
Category	Professional	Sub-Category	Professional Development		
Attendances	IEEE Members	8	Guests	3	
Photos	(if any)				

Date	2016/12/06			(yyyy/mm/dd)	
Event	Technical Discussion Meeting				
Location	Electrical Engineering and Computer Science Building, Chung Yuan Christian University				
Category	Professional	Sub-Category	Professional Development		
Attendances	IEEE Members	8	Guests	6	
Photos	(if any)				

**8. Student Branch Name: SMC Society (SMCS) Student Branch Chapter at NCHU**

- i. We invited Prof. Keith Hipel to introduce the method of how to write technical papers and how to conduct research in the graduate level on 19 May, 2016.
- ii. 18 SMC student members actively joined the 2016 international conference on advanced robotics and intelligent systems, and presented their papers in an oral form. They learned a lot from the conference attendance and obtained valuable personal experience on how to make good oral presentations.
- iii. We invited Prof. Er come to our campus and give our SMC student members a talk in big data, and also mentioned how the student learning situations in National Nanyang University.

**9. Student Branch Name: IEEE NTHU Student Branch (National Tsing Hua University)**

- i. We have held various kinds of lectures, inclusive of gravitational wave, signal processing, etc.
- ii. We invited those outgoing exchange students and also those who had finished their intern work, to share their invaluable experience.

## B.5 Affinity Group Activities

- GOLD

- **2016 IEEE International Conference on Consumer Electronics- Taiwan**

The 2016 IEEE International Conference on Consumer Electronics– Taiwan was held from May 27-29 at National Chi-Nan University, Nantou County, Taiwan. As a grand venue for scholars and professional persons all around the world, IEEE ICCE-Taiwan aims to initiate profound discussions on research and discovery in electronics and relevant professional field. Furthermore, the vision is to set IEEE ICCE-Taiwan as a milestone in consumer electronic field and become a historic and dominant conference year by year with strong and resourceful support from the IEEE Taipei Section. In this year in total we have 200 participants from 11 various countries. In particular, the Young Professionals event was held in conjunction with the reception as follows:

Speaker: Prof. Kosin Chamnongthai, Department of Electronic and Telecommunication Engineering, King Mongkut's University of Technology, Bangkok, Thailand

Title: To Be an Engineer with Achievement or Morality ?

Abstract: The globalization society, everyday life becomes easier and more convenient due to rapid development and utilization of information technologies. In this talk, people are able to achieve in high-level goals comparing with the past. As a result, some of them who feel difficult to catch up the trend however lack of important morality, and eventually fail in achievement. As a leader of society, engineers who got degrees for mainly contributing in innovative invention should spend their lives in the right ways that people expected such as professor, developer, researcher, manager, engineer, and so on with the need of morality. Actually, this is a good timing for new-face engineers to carefully design their morality-based working lives in order to enhance their career path, and finally reach the success level goals. This talk starts from raising some world-level persons as good and bad samples, and analyze their results. Obviously, to become well known person with excellent career path, we need to seriously consider morality even more than achievement. Some samples typically showing achievement with morality are introduced and discussed as guidelines for the audiences. The talk concludes by a new type of leading engineer matched with the current IT society.



➤ **2016 Conference on Advanced Electrical and Electronics Technology**

In this conference, a series of talks was conducted to introduce the industry experiences, and the new generation technologies were described. This conference was sponsored by the IEEE Taipei Section Young Professional Group and Signal Processing Society, Taipei Chapter, and was held at Chinese Culture University, Taipei, Taiwan.



➤ **2016 IET Multidisciplinary of Microelectronic-Information Systems Application and Integration Contest**

In this contest, a series of presentations and demonstrate were conducted to introduce the multidisciplinary research experiences, and the new generation technologies. This conference was sponsored by the IEEE Taipei Section Young Professional Group and Signal Processing Society, Taipei Chapter, and was held at Chinese Culture University, Taipei, Taiwan.



- WIE
  - A social event was organized to enhance the international networking. A dinner meeting with professor Trajkovic was arranged by Taipei WIE and NTUST EE on 7/5 2016.
  - Prof. Chen and Prof. Hsueh were invited to attend 2016 WIE global summit and 2016 Region 10 SYWL Congress. Prof. Chen also contributed the WIE session as a speaker.
  - A WIE student seminar was organized on 12/29. The number of the attendee is around 50
  
- YP
  - We had a kick-off meeting at Institute of Information Science, Academia Sinica, Taipei, to formally form the affinity group.
  - We invited Mr. Jain Ouyang from Baidu, in April 2016, to give a talk to young professionals. This talk is to share his experience on architecting new data-center systems for big data and cloud applications. The attendees are benefited from his talk a lot, because all the experiences he shared are not unknown to most people, especially students and young professionals who are in academic.

## B.6 Awards & Recognition Activities

- Award constituted by the section
  - Outstanding Chapter Award**
    1. System, Man, and Cybernetics Taipei Chapter (SMC28)
    2. Circuits and Systems Society Taipei Chapter (CAS04)
  - Outstanding Student Branch/Chapter Award**
    1. IEEE NCU Student Branch
  
- Award(s) received from R10  
N/A
- Award(s) received from IEEE HQ  
N/A

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

- Newsletter (name and number of issues in the year)  
IEEE Taipei Section publishes e-newsletter through the section website. Issues published in the year 2016 are listed as follows:

Release Date	E-News URL
07/07/2016	<a href="http://www.ieee.org.tw/newsletter/vol33/epaper_vol33_bar_uni.html">http://www.ieee.org.tw/newsletter/vol33/epaper_vol33_bar_uni.html</a>
11/01/2016	<a href="http://www.ieee.org.tw/newsletter/vol34/epaper_vol34_bar_uni.html">http://www.ieee.org.tw/newsletter/vol34/epaper_vol34_bar_uni.html</a>

- Home Page of the section (give the URL and frequency which it is updated)
  1. IEEE Taipei Section: <http://www.ieee.org.tw/>
  2. IEEE NTU Student Branch: [http://www.ieee.org.tw/chapters/index.php?web\\_class=35](http://www.ieee.org.tw/chapters/index.php?web_class=35)
  3. IEEE NTUST Student Branch: <http://studentbranch.csie.ntust.edu.tw/>
  4. IEEE SMC Society (SMCS) Student Branch Chapter at NTUST:  
<http://studentbranch.csie.ntust.edu.tw/smc/>
  5. IEEE NCU Student Branch: <http://iee.ncu.edu.tw/>
  6. IEEE NTHU Student Branch: [http://www.ieee.org.tw/chapters/index.php?web\\_class=44](http://www.ieee.org.tw/chapters/index.php?web_class=44)
  7. IEEE YZU Student Branch: [http://www.ieee.org.tw/chapters/index.php?web\\_class=38](http://www.ieee.org.tw/chapters/index.php?web_class=38)
  8. IEEE NCTU Student Branch: [http://www.ieee.org.tw/chapters/index.php?web\\_class=36](http://www.ieee.org.tw/chapters/index.php?web_class=36)
  9. IEEE NCHU Student Branch: [http://www.ieee.org.tw/chapters/index.php?web\\_class=45](http://www.ieee.org.tw/chapters/index.php?web_class=45)
  10. IEEE NTOU Student Branch: [http://www.ieee.org.tw/chapters/index.php?web\\_class=40](http://www.ieee.org.tw/chapters/index.php?web_class=40)
  11. SMC Society (SMCS) Student Branch Chapter at YZU:  
[http://www.ieee.org.tw/chapters/index.php?web\\_class=50](http://www.ieee.org.tw/chapters/index.php?web_class=50)
  12. PEL Society (PELS) Student Branch Chapter at NTHU:  
[http://www.ieee.org.tw/chapters/index.php?web\\_class=51](http://www.ieee.org.tw/chapters/index.php?web_class=51)
  13. IEEE NCUE Student Branch: [http://www.ieee.org.tw/chapters/index.php?web\\_class=41](http://www.ieee.org.tw/chapters/index.php?web_class=41)
  14. Antennas and Propagation Society (AP03):  
[http://www.ieee.org.tw/chapters/index.php?web\\_class=3](http://www.ieee.org.tw/chapters/index.php?web_class=3)
  15. Broadcast Technology Society (BT02):  
[http://www.ieee.org.tw/chapters/index.php?web\\_class=5](http://www.ieee.org.tw/chapters/index.php?web_class=5)
  16. Computer Society (C16): [http://www.ieee.org.tw/chapters/index.php?web\\_class=6](http://www.ieee.org.tw/chapters/index.php?web_class=6)
  17. Circuits and Systems Society (CAS04):  
[http://www.ieee.org.tw/chapters/index.php?web\\_class=7](http://www.ieee.org.tw/chapters/index.php?web_class=7)
  18. Consumer Electronics Society (CE08):  
[http://www.ieee.org.tw/chapters/index.php?web\\_class=8](http://www.ieee.org.tw/chapters/index.php?web_class=8)
  19. Communications Society (COM19):  
[http://www.ieee.org.tw/chapters/index.php?web\\_class=10](http://www.ieee.org.tw/chapters/index.php?web_class=10)
  20. Components Packaging, and Manufacturing Technology Society (CPMT21):  
[http://www.ieee.org.tw/chapters/index.php?web\\_class=12](http://www.ieee.org.tw/chapters/index.php?web_class=12)
  21. Control Systems Society (CS23):  
[http://www.ieee.org.tw/chapters/index.php?web\\_class=13](http://www.ieee.org.tw/chapters/index.php?web_class=13)

22. Electron Devices Society (ED15):  
[http://www.ieee.org.tw/chapters/index.php?web\\_class=15](http://www.ieee.org.tw/chapters/index.php?web_class=15)
23. Electromagnetic Compatibility Society (EMC27):  
[http://www.ieee.org.tw/chapters/index.php?web\\_class=17](http://www.ieee.org.tw/chapters/index.php?web_class=17)
24. Industrial Electronics Society (IE13):  
[http://www.ieee.org.tw/chapters/index.php?web\\_class=19](http://www.ieee.org.tw/chapters/index.php?web_class=19)
25. Systems, Man, and Cybernetics Society-Taichung Chapter (SMC28):  
[http://www.ieee.org.tw/chapters/index.php?web\\_class=41](http://www.ieee.org.tw/chapters/index.php?web_class=41)
26. Information Theory Society (IT12):  
[http://www.ieee.org.tw/chapters/index.php?web\\_class=21](http://www.ieee.org.tw/chapters/index.php?web_class=21)
27. Photonics Society (PHO36):  
[http://www.ieee.org.tw/chapters/index.php?web\\_class=22](http://www.ieee.org.tw/chapters/index.php?web_class=22)
28. Microwave Theory and Techniques Society (MTT17):  
[http://www.ieee.org.tw/chapters/index.php?web\\_class=24](http://www.ieee.org.tw/chapters/index.php?web_class=24)
29. Oceanic Engineering Society (OE22):  
[http://www.ieee.org.tw/chapters/index.php?web\\_class=25](http://www.ieee.org.tw/chapters/index.php?web_class=25)
30. Power Electronics Society (PEL35):  
[http://www.ieee.org.tw/chapters/index.php?web\\_class=20](http://www.ieee.org.tw/chapters/index.php?web_class=20)
31. Power and Energy Society (PE31):  
[http://www.ieee.org.tw/chapters/index.php?web\\_class=26](http://www.ieee.org.tw/chapters/index.php?web_class=26)
32. Robotics and Automation Society (RA24):  
[http://www.ieee.org.tw/chapters/index.php?web\\_class=29](http://www.ieee.org.tw/chapters/index.php?web_class=29)
33. Signal Processing Society (SP01):  
[http://www.ieee.org.tw/chapters/index.php?web\\_class=31](http://www.ieee.org.tw/chapters/index.php?web_class=31)
34. Solid-State Circuits Society (SSC37):  
[http://www.ieee.org.tw/chapters/index.php?web\\_class=32](http://www.ieee.org.tw/chapters/index.php?web_class=32)
35. Vehicular Technology Society (VT06):  
[http://www.ieee.org.tw/chapters/index.php?web\\_class=33](http://www.ieee.org.tw/chapters/index.php?web_class=33)
36. Systems, Man, and Cybernetics (SMC28):  
[http://www.ieee.org.tw/chapters/index.php?web\\_class=30](http://www.ieee.org.tw/chapters/index.php?web_class=30)
37. Computational Intelligence Society (CIS11):  
[http://www.ieee.org.tw/chapters/index.php?web\\_class=9](http://www.ieee.org.tw/chapters/index.php?web_class=9)
38. Geoscience and Remote Sensing Society (GRS29):  
[http://www.ieee.org.tw/chapters/index.php?web\\_class=18](http://www.ieee.org.tw/chapters/index.php?web_class=18)
39. Education Society (E25): [http://www.ieee.org.tw/chapters/index.php?web\\_class=14](http://www.ieee.org.tw/chapters/index.php?web_class=14)
40. Magnetics Society (MAG33): [http://www.ieee.org.tw/chapters/index.php?web\\_class=23](http://www.ieee.org.tw/chapters/index.php?web_class=23)
41. Engineering in Medicine and Biology Society (EMB18):  
[http://www.ieee.org.tw/chapters/index.php?web\\_class=16](http://www.ieee.org.tw/chapters/index.php?web_class=16)
42. Product Safety Engineering Society (PSE43):  
[http://www.ieee.org.tw/chapters/index.php?web\\_class=27](http://www.ieee.org.tw/chapters/index.php?web_class=27)
43. Reliability Society (RL07): [http://www.ieee.org.tw/chapters/index.php?web\\_class=28](http://www.ieee.org.tw/chapters/index.php?web_class=28)

- 44. Instrumentation and Measurement Society (IM09):  
[http://www.ieee.org.tw/chapters/index.php?web\\_class=47](http://www.ieee.org.tw/chapters/index.php?web_class=47)
  - 45. Industry Applications Society (IA34):  
[http://www.ieee.org.tw/chapters/index.php?web\\_class=48](http://www.ieee.org.tw/chapters/index.php?web_class=48)
  - 46. Sensors Council (SEN39): [http://www.ieee.org.tw/chapters/index.php?web\\_class=54](http://www.ieee.org.tw/chapters/index.php?web_class=54)
- Other means of contacts with section members  
In order to further improve connections among its members, Taipei Section has formed its Facebook page at <https://www.facebook.com/IEEE.Taipei.Section.fans> in 2011.

## PART C - OTHERS

### C.1 Relationship with National Societies

#### ➤ **Sister Society: TAMT (Taiwan Association of Magnetic Technology)**

- We held 2016 Taiwan Association Magnetic Technology Annual Meeting and summer school for magnetism on July 30<sup>th</sup>-31<sup>th</sup>, 2016. The goals of the meeting are to let researchers and students to understand different research aspects from different groups and then can create more ideas for their research. We invited several IEEE fellow as our invited speakers in the meeting.

The invited speakers are as fallow:

- (1) Prof. Kang L. Wang (Department of Electrical Engineering, University of California, Los Angeles(UCLA))
  - (2) Dr. William (Bill) Gallagher (Department of Physics, University of California at Davis)
  - (3) Robert D. Shull( NIST Fellow, National Institute of Standards and Technology)
  - (4) Prof. DIENY Bernard (CEA/Granoble Research Director, SPINTEC Chief Scientist, co-founder of start-up EVADERIS)
  - (5) Prof. Peter Fischer (APS Fellow, IEEE Fellow, Materials Sciences Division, Lawrence Berkeley National Laboratory, Department of Physics, UC Santa Cruz)
  - (6) Dr. John Moreland (IEEE Fellow, National Institute of Standards and Technology )
- We hosted The 4th International Conference of Asian Union of Magnetism Societies (IcAUMS 2016) during August 1<sup>st</sup>- 5<sup>th</sup>, 2016. In the conference, there were many scientists and engineers working on magnetic materials and devices getting together, and shared their results with the others. The conference held in a professional and interactive way providing the participants privileged opportunities for refreshing knowledge base, enhancing their research capability, and even for networking with other groups. Besides, we invited serveral IEEE fellows as our invited speakers in IcAUMS 2016.

The invited speakers are as fallow:

- (1) Prof. Kang L. Wang (Department of Electrical Engineering, University of California, Los Angeles(UCLA))
- (2) Dr. William (Bill) Gallagher (Department of Physics, University of California at Davis)
- (3) Robert D. Shull( NIST Fellow, National Institute of Standards and Technology)

- (4) Prof. DIENY Bernard (CEA/Granoble Research Director, SPINTEC Chief Scientist, co-founder of start-up EVADERIS)
  - (5) Prof. Peter Fischer (APS Fellow, IEEE Fellow, Materials Sciences Division, Lawrence Berkeley National Laboratory, Department of Physics, UC Santa Cruz)
  - (6) Dr. John Moreland (IEEE Fellow, National Institute of Standards and Technology )
  - (7) Prof. Ching-Ray Chang (APS Fellow, IEEE Fellow, Department of Physics, National Taiwan University)
  - (8) Dr. Steve Hwang (VP, Media R&D, Seagate Technology)
- We held three IEEE Distinguished Lectures, last year(2016). In these three lectures, we invited Professor Josep Fontcuberta, Professor Teruo Ono and Professor Kazuhiro Hono to give the talks. During the lectures, many IEEE members from the relative fields came. The lectures gave the participants a wonderful chance to communicate with each other.
  - This year we will host three activities.
    - (1) The first one is 2017 Taiwan Association Magnetic Technology Annual Meeting. The activity will be held in Taichung, Taiwan from June 26 to 28, 2017. We will also invite some IEEE fellows or DLs to come.
    - (2) The second one is IEEE Distinguished Lecture 2017. We will invite 2017 IEEE Distinguished Lecturer to give the talks.
    - (3) The third one will be summer school of magnetism during the summer, 2017. We will invite IEEE senior members to give lecturers to students.

## C.2 Special Events

- Taipei Section issued the E-NEWS: Issue first issue electronic newspaper since May 26 of 2009, and we keep taking place publication.
- Handles to members and recruits the meeting of proving: Run members to recruit to the academic meeting, research unit, participate. The materials recruiting members and offering the affiliation to handle live are filled in, offer and help outside simply and conveniently, also offer member's consultation service live..
- IEEE Board of Directors visited Taipei in August 2016. Section hosted a meeting with them at Taipei Shangri-La's Far Eastern Plaza Hotel on August 30, 2016. The attendance was 19 including Section Executives.

## C.3 Problems to be Anticipated

- Because of economic crisis, most industry members have no budget that supported from company to join industry activity. It introduces risk in membership development and billable activity.
- Due to the decline in the number of PhD students, the size of our membership decreases.



## **C.4 Best Practices of Your Section (which you would like share with other sections for the benefits of members)**

- Section support can promote joint activities of education and other summer camps. For academic conferences, setting up a booth for membership services and providing membership promotion in academic conferences are good ways to attract new members. In Taiwan, university professors are allowed to pay membership fees for M.S. and Ph.D. students using their research funding from the Ministry of Science and Technology. This shows positive effects for recruiting student members.

## **PART D - GOALS AND PLANS**

### **D.1 Continuation of Project/Activity in Progress and Their Implementation**

#### **Plans**

##### ➤ Taipei Section

#### ▪ **Rendering Awards**

We will plan out best Outstanding Chapter Award and Outstanding Student Branch/Chapter Award for stimulating chapter student members' effort on their annual reports. We will group a selection committee to choose the superior from the reports submitted by all the chapters and student branches. The winners can get rewards and be praised on Taipei Section's website.

#### ▪ **Membership Development**

1. Academic membership development:
  - i. Recruit new members in the related fields of researchers and professors through nation-wide conferences or workshop;
  - ii. Promote senior members from the qualified IEEE members through the major universities in Taiwan.
2. Industrial membership development:
 

Recruit new members in the related fields of engineers in industry through nation-wide conferences or workshop.
3. Student membership development:
  - i. Recruit new members in the related fields of Ph.D./master students through the IEEE Student Branches in Taiwan.
  - ii. Try to enhance the add-on value of IEEE student membership for membership development.

##### ➤ **GOLD**

We will be continuously conducting activities for the young professionals to highlight the benefits of joining the IEEE and its societies. The GOLD affinity group of IEEE Taipei Session will support students and recent graduates and women to become members by

participating at 2017 IEEE International Conference on Consumer Electronics- Taiwan, meaning CE Chapter of the Taipei Session will cover the member fee for the participants. One of the goals of the IEEE Taipei Section GOLD Affinity Group for 2017 will be to retain her existing members and increase membership by recruiting new members. In addition, we will continuously look into ways to enhance the participation of members in all IEEE activities by organizing fun gatherings. Among these, the Young Professionals Event will be held in conjunction to the reception of 2017 IEEE International Conference on Consumer Electronics-Taiwan.

➤ **YP**

- Plan to invite a researcher to give a technical talk for group members. Currently, we have invited Prof. Po-Chun Huang from Yuan Tzu University. His talk title will be “How to Compose Premium-quality Figures for Academic Publications.” The purpose of this activity is to share with young researchers, students, and group members how to compose high quality figures in their reports or academic papers.
- Plan to have a joint workshop with Affinity Group, Young Professionals, Tainan Section. We have contacted Prof. Ing-Chao Lin, Chair of YP AG, IEEE Tainan Section, Taiwan.
- Plan to hold a meeting with members of the general assembly by inviting all the members of group members and some other young professionals who are interested in this affinity group.

➤ **Chapter Name: Antennas and Propagation Society Taipei Chapter (AP03)**

- We have completed all the activities that he has planned in the year 2014/2015, which includes organizing the iWEM 2015 that has attracted more than 30 IEEE AP-S members to participate.
- Other Sponsor Conference: 2015 International Microwave Workshop Series on RF and Wireless Technologies for Biomedical and Healthcare Applications (IMWS-Bio 2015). 76 IEEE members have joint this event.

➤ **Chapter Name: Broadcast Technology Society Taipei Chapter (BT02)**

- Continue to recruit members and student members from academia and industries through technical and educational activities (symposiums, seminars, short courses).
- Continue to cooperate with China Radio Association (CRA) through joint activities. CRA’s two thousand members consist of practical engineers in radio stations and television companies in Taiwan.

➤ **Chapter Name: Computer Society (C16)**

- Sponsored several technical meetings

➤ **Chapter Name: Communications Society Taipei Chapter (COM19)**

- Workshops on Information Theory and Communications will be held biannually, one in spring and the other in fall.
- National Symposium on Telecommunications will be held every year to benefit both of academic and industrial members.
- Summer school on Information Theory, Communication Theory and Technologies will be held every August to benefit student members, especially the newly admitted master students.
- Taiwan Winter School on Information Theory and Communications will be held every two years to benefit Ph.D. student members.
- Information Theory Society Taipei Chapter and Communications Society Taipei/Tainan Chapter Young Research Best Paper Award will be given every two years.

➤ **Chapter Name: Control Systems Society Taipei Chapter (CS23)**

CS Taipei Chapter helps host the following conferences:

- IEEE Int. Conf. on System Science and Engineering (ICSSE 2016), Nantou County, Taiwan, July 7-9, 2016.
- 2016 International Automatic Control Conference (CACs 2016), Taichung, Taiwan, Nov. 9-11, 2016
- 2016 International Conference on Fuzzy Theory and Its Applications (iFUZZY 2015), Taichung, Taiwan, Nov. 9-11, 2016

➤ **Chapter Name: Components, Packing and Manufacturing Technology Society Taipei Chapter (CPMT21)**

CPMT Taipei Chapter, TPCA, ITRI, and IMAPS-Taiwan will organize 2017 International Microsystems, Packaging, Assembly and Circuits Technology (IMPACT) Conference. This conference is to bring together scientists, engineers and experts actively engaged in research and development on IC Packaging, Assembly and PCB to discuss current progress and emerging technologies in the fields. In addition, IMPACT 2017 is in conjunction with TPCA Show which will be held at Taipei Nangang Exhibition Hall during Oct. 25 to 27, 2017.

➤ **Chapter Name: Education Society Taipei Chapter (ED25)**

To recruit new members for the education society

- We will first approach those local Taiwan authors whose papers are published in the IEEE Transactions on Education, or the International Journal of Engineering Education. We will also try to increase the student members for Education Society, because they are now financially supported by the project from the National Science.

➤ **Chapter Name: Electron Devices Society Taipei Chapter (ED15)**

The ED Taipei chapter is in the promotion of helping the ED student branch chapters to recruit more new student members. Also, several members were promoted to senior

members in 2016. Two more members were elected as Distinguished lectures, Prof. P. W. Li(NCTU) and Prof. K. S. Chang-Liao(NTHU).

- In 2016, more than 20-30 new student members were recruited with the assistance from our professor members.
- Need to work more on the promotion of IEEE senior members.

One major event is the organization of a medium scale workshop on May 3<sup>rd</sup>, IEEE EDS WIMNACT-50, in which the chapter took the 50<sup>th</sup> one of the series. This is a remarkable achievement. 2016 IEEE INSE conference held in Hsinchu May 3 to May 6, which is successful and promoted the regional activities.

➤ **Chapter Name: Engineering in Medicine and Biology Society Taipei Chapter (EMB18)**

- Biomedical Electronics and Bioinformatics Camp will be continued every year to promote biomedical engineering to engineers.
- MEG Educational Training Course and MRI Educational Training Course will also be held each year to introduce new technology to medical practitioners and students in medical campus.

➤ **Chapter Name: Electromagnetic Compatibility Society Taipei Chapter (EMC27)**

Taipei EMC Chapter (EMC27) will continue to progress in holding

- More than one EMC technical workshop per season, and
- the National EMC Conference per year.

➤ **Chapter Name: Geoscience and Remote Sensing Society Taipei Chapter (GRS29)**

- Taipei GRSS Chapter (GRS29) had held one successful International Conference (the 12th International Conference on Space, Aeronautical and Navigational Electronics 2016), one Joint Chapters Meeting (the 2016 IEEE Geoscience and Remote Sensing Society Joint Chapters Meeting), one Chapter Best Thesis Award, and seven Technical Activities in 2016.

➤ **Chapter Name: Industrial Electronics Society Taipei Chapter (IE13)**

- Planned Activity 1: 2017 Symposium on Semiconductor Power Conversion

The 2017 Symposium on Semiconductor Power Conversion will be held in National Chung-hua University of Education on Oct. 13~15, 2017. All attendees will be from industry and academic institutions in Taiwan, Japan and Korea. The symposium will invite Japanese and Korean professors and experts, graduate students and Taiwanese delegates, to give oral and poster presentations with insight inspiration to the audience. The objectives of communication and experience sharing among Taiwan, Japan and Korea will be achieved. The attendant students also got the chance to have a global view about the worldwide trends of power conversion technology development.

- Planned Activity 2: 2017 SIT Internship Program

16 SIT undergraduate students and one graduate TA will attend the 2017 Internship Program at National Taiwan University of Science and Technology on March 1~10, 2017. 20 graduate TAs and 3 professors from NTUST will provide lectures and Lab courses during the internship program. The objectives of communication and experience sharing between Taiwanese and Japanese students will be achieved.

➤ **Chapter Name: Information Theory Society Taipei Chapter (IT12)**

Forthcoming events in 2017 include:

- The 2017 Spring Information Theory and Communications Workshop will be held at Sun-Moon lake, Nantou from Jan. 21 to Jan. 23.
- The 2017 Fall Information Theory and Communications Workshop will be held in August.
- The election of the new Chair for IEEE Information Theory Society, Taipei Chapter (IT12).
- IEEE Information Theory Workshop (ITW2017) will be held in Kaoshiung in November 6-10.

➤ **Chapter Name: Magnetics Society Taipei Chapter (MAG33)**

- 2017 IEEE Distinguished Lecturer Progress. This year there are totally four distinguished lecturers:
  - Prof. Michael Farle
  - Prof. Eiji Saitoh
  - Dr. Hendrik Ohldag
  - Prof. Xiaofeng Jin

We plan to invite two of them in the first half of this year and the rest of them in the second half of this year. We have contacted all of them via emails. Due to their tight schedules we are still waiting for their responses to the specific date of visiting Taiwan.

➤ **Chapter Name: Microwave Theory and Techniques Society Taipei Chapter (MTT17)**

- Promoting interactions between members by regular meetings or side meetings held with the other events such as national conferences or activities of Taiwan Electromagnetic Industry-Academia Consortium.
- Recruiting more MTT17 members by various promotions and working on better member services in conferences and events.
- Continuing to invite Microwave Distinguished Lectures to Taiwan and organizing workshops and seminars.

➤ **Chapter Name: Power and Energy Society Taipei Chapter (PE31)**

We had held four successful activities in 2014. All of these activities are technical meetings which been held in I-Shou University. The first one is about “Narrowband PLC Technology and Applications”. The speaker is from industry and provide lots of experience for the

students. The second one is about conserving energy and reducing CO2 emissions. The third one is about the discussion of nuclear power plant, and the last one is about the development of smart grid in Taiwan. We will continuously hold similar technical activities in the future.

➤ **Chapter Name: Power Electronics Society Taipei Chapter (PEL35)**

The Taipei Power Electronics Society Chapter (PEL35) will continue to progress in holding

- one PELS international conference,
- several international distinguished lectures, and
- one young professional workshop.

➤ **Chapter Name: Photonics Society Taipei Chapter (PHOT36)**

- Continuation of technical sponsor of Optics and Photonics Taiwan 2017 (OPTIC 2017), to support the best student papers award. Note that OPTIC conference is the largest annual photonics conference in Taiwan. It may help to broadcast the IPS chapter issues to participants, universities, and industrial fields for stimulating the inter-activity and discussion. To recruit more student members to join the IEEE Photonics Society.
- Support “Touch Taiwan 2017” festival: Optoelectronic & aerospace pavilion 2017 activity. The activity may benefit to IPS members to promote the cooperation between the industry and academic members.
- Summer School on Optics and Photonics will be held in August 2017 at National Central and Chiao Tung University. The activity may benefit to student members.
- TVC annual Symposium 2017 will be held on Oct. 27 at National Cheng Kung University. The activity may benefit to student members.
- We will enrich the content of IPS website.

➤ **Chapter Name: Product Safety Engineering Society Taipei Chapter (PSE43)**

- We have completed seminar activities planned in the year 2016, which includes organizing the industry wise, sponsorship meetings and ISPCE 2016 Taiwan

➤ **Chapter Name: Reliability Society Taipei Chapter (RL07)**

IEEE Taipei Section (RL07) in 2016 has committed itself to promote IEEE Reliability Society in Taiwan. We continuously invite experts, researchers and scholars to deliver keynote speeches sharing the cutting-edge technology and their innovative research results not only with the members of RL07 but also with the non-members in Taiwan. Furthermore, we encourage student members to have in-depth discussions with the invited speakers and exchange opinions with them in the field of Reliability Science and engineering.

➤ **Chapter Name: Sensors Council Taipei Chapter (SEN39)**

In sensor council, the promotion strategy is to use “real demonstration” to attract students’ interest and company’s interest on sensor IC researches/applications. Therefore, we actively attend several forums (including sensor IC tutorial and forum) to do the promotion.

➤ **Chapter Name: Signal Processing Society Taipei Chapter (SP01)**

- We have sponsored IEEE International Conference on Consumer Electronics-TW 2016 (ICCE-TW 2016) in May 27-29, and will continuously sponsor ICCE-TW 2017. The ICCE-TW 2016 had accepted around 200 technical papers.
- We have held some distinguished lectures as follows:
  - ◆ “Overview of Video Coding Standardization for 3D and VR”, Prof. Jens-Rainer Ohm, Oct. 5, 2016
  - ◆ “Action and Event Recognition Using Depth Cameras”, Prof. Pierre Moulin, May 19, 2016
  - ◆ “Image and Video Compression for Efficient Interactive Access”, Prof. David Taubman, June 13, 2016
- We have sponsored 2016 Conference on Advanced Electrical and Electronics Technology. In this conference, a series of talks was conducted to introduce the industry experiences, and the new generation technologies were described.
- IFEC 2016 Proposal Accepted Teams
  - City University of Hong Kong
  - Cologne University of Applied Science
  - Huazhong University of Science and Technology
  - Illinois Institute of Technology
  - Nanjing University of Aeronautics & Astronautics
  - National Cheng Kung University
  - National Taiwan University of Science and Technology
  - NC State University
  - San Diego State University
  - Southwest Jiaotong University
  - University of Belgrade
  - University of Illinois Urbana-Champaign
  - University of Michigan-Dearborn
  - University of Puerto Rico

➤ **Chapter Name: Solid-State Circuits Society Taipei Chapter (SSC37)**

- Cosponsor 2016 VLSI/CAD Symposium and Annual SSCS Taiwan member meeting.

- Cosponsor 2016 IC Design Contest under Taiwan Ministry of Education (MOE) --- The student winners would get free IEEE SSCS student membership for one year.
- Sponsor student travel fund for 2016 A-SSCC accepted authors.
- Create Forums/seminars to promote IC design researches toward undergraduate students.
- ISSCC training course to help Taiwan speakers to make good presentation at ISSCC.

➤ **Chapter Name: Systems, Man, and Cybernetics Society Taipei Chapter (SMC28)**

- SMC Taipei Chapter helps host IEEE Int. Conf. on Systems, Man, and Cybernetics (IEEE SMC2017), Banff, Canada, Oct. 5-8, 2017.
- SMC Taipei Chapter helps host The 11th ICME Int. Conf. on Complex Medical Engineering (CME 2017), Shenzhen, China, Nov. 4-6, 2017.
- SMC Taipei Chapter helps host IEEE Int. Conf. on System Science and Engineering (ICSSE 2017), Ho Chi Minh City, Vietnam, July 21-23, 2017.
- SMC Taipei Chapter helps host National Symp. on System Science and Engineering (NSSSE 2017), Taipei, Taiwan, May 19-20, 2017.
- SMC Taipei Chapter helps host IEEE Int. Conf. on Networking, Sensing and Control (IEEE ICNSC 2017), Calabria, Italy, May 16-18, 2017.

➤ **Chapter Name: Systems, Man, and Cybernetics Society Taichung Chapter (SMC28)**

- SMC Taichung Chapter helped host IEEE Int. Conf. on Systems, Man, and Cybernetics (IEEE SMC2016), Budapest, Hungary, Oct. 9-12, 2016. Prof. Tsai, Taichung Chapter Chair (SMC 28), served as program-co chair for cybernetics.
- SMC Taichung Chapter hosted the 2016 international conference on Advanced Robotics and Intelligent Systems, Taipei Nangang Exhibition Center, August 31-September 2, 2016. Prof. C. C. Tsai, Taichung Chapter Chair (SMC 28), served as the General Chair. .
- SMC Taichung Chapter hosted the 2016 national conference on Advanced Robotics (Chinese), Taipei Nangang Exhibition Center, August 31-September 2, 2016. Prof. C. C. Tsai, Taichung Chapter Chair (SMC 28,) served as the General Chair.
- SMC Taichung Chapter helped host the 2016 National Conference on System Science and Engineering (ICSSE 2016), Nantou County, Taiwan, July 7-9, 2016. Prof. C. C. Tsai, Taichung Chapter Chair (SMC 28), served as the program chair.

➤ **Chapter Name: Vehicular Technology Society Taipei Chapter (VT06)**

- We will continue hosting technical talks given by local or international experts. It is expected that at least two such IEEE VTS Distinguished Lectures will be held in 2017.
- We will continue to organize or co-organize international conferences or workshops in the year of 2017, as what we have done in the past year like the IEEE Vehicular Technology Society Asia Pacific Wireless Communications Symposium (VTS APWCS)



➤ **Student Branch Name: Student Branch Chapter at National Taiwan University (NTU)**

- In the past few months, we reorganized our chapter's structure and set up some annually goals, due to the fact that NTU student branch has not been activated for a few years.
- We've already set up our facebook fanpage(this idea was originated from IEEEESB in UIUC); moreover, we are going to propose an essay-guide slides for getting familiar with our branch, what IEEE is for, how we works, and most importantly, how to join our community and furthermore become an IEEE student member.
- Here is our facebook fanpage (url: <https://www.facebook.com/ieeentu.taipei/> ), and the easy-guide will be posted on facebook in a few days.

➤ **Student Branch Name: IEEE NCTU Student Branch (National Chiao Tung University)**

NCTU Student Branch will keep inviting more lecturers to give talks in NCTU from different universities in different countries with broad range of topics and enlarge the field of view of the members and advertise our members to the great scholars.

➤ **Student Branch Name: PEL Society (PELS) Student Branch Chapter at NTHU**

The future plan is to recruit more member to the power electronics society.

➤ **Student Branch Name: IEEE NSYSU Student Branch (National Sun Yat-sen University)**

NSYSU Student Branch Chair is devoted to recruit members. Experts in EE related field are invited to give us some talks and learn from each other.

➤ **Student Branch Name: IA Society (IAS) Student Branch Chapter at NTHU**

The IAS Student Branch Chapter of NTHU will have following activities in 2017:

- 10+ seminars and workshops on campus.
- 2-3 industry tours.

➤ **Student Branch Name: IEEE NTHU Student Branch (National Tsing Hua University)**

To make members know more about IEEE, we will continue to invite more students to our lectures delivered by outstanding students, EE-concerned professors or those corporations.

➤ **Student Branch Name: ED Society (EDS) Student Branch Chapter at NCTU**

The branch will regularly invite at least 3 invited speakers from overseas in stimulating the academic research, encouraging DL from overseas. In particular, this year will have an interaction with science park companies, arranging our students members to attend open forums/open house provided by the companies.

➤ **Student Branch Name: ED Society (EDS) Student Branch Chapter at NTHU**

The EDS Student Branch Chapter of NTHU will have following activities in 2017:

- Invite 2-3 scholars to give some talks in device development.

## D.2 Goals and Future Plans

### ➤ YP

- Plan to double the number of affinity group members.
- Invite more people from academic and industry to share experiences to share their experiences to young professionals. Meanwhile, we hope to promote such activities to more young professionals who are in the IT fields and located in Taipei.
- Plan to have more communication with YP AGs from different IEEE Sections and even other IEE societies

### ➤ Chapter Name: Antennas and Propagation Society Taipei Chapter (AP03)

- As the newly elected IEEE AP-S Taipei Chapter Chair, my very first major objective is to set up a new domain for the Chapter, follow by constructing a new website template (with courtesy of the IEEE, see: [www.ieee.org/go/subsites](http://www.ieee.org/go/subsites)). The AP-S members will soon be able to observe a very new website that can report the recent activities organized by the AP-S members. Interaction via social media for AP-S members will also be constructed in the new website.
- My next major goal is to increase the membership (especially student members) of our IEEE Taipei Section, and AP-S membership as well. My plan is to visit some of the major universities in the northern part of Taiwan in this year (2016), and give presentations and tutorials to these Universities that have active AP research team/group. I intend to attend all the AP related conference holding in Taiwan this year, not to mention AP related conferences in China (APEMC 2016) and Puerto Rico (APS-URSI 2016), because it is a good way to meet most of the AP members (usually difficult to see) and their post-graduate students, and persuade their students to join the AP-S member.
- My other plan for the next two years is to increase the number of senior membership in our AP-S Chapter. I will gather info of all the non-senior member, and will coordinate with my new Membership Development Chair to help them in applying the senior membership.
- As the TPC Chair of APCAP 2016 (Asia Pacific Antennas and Propagation 2016), and via this conference, I intend to organize some activities that will attract researchers and students to join the IEEE APS.

### ➤ Chapter Name: Broadcast Technology Society Taipei Chapter (BT02)

Cooperate with the new “Digital Convergence Education Promotion Alliance Center” through joint activities. Funded by the ministry of education, the center promotes digital convergence curriculum and course materials development. Participants are mostly faculty members in colleges and universities.

### ➤ Chapter Name: Circuits and Systems Society Taipei Chapter (CAS04)

- We would like to invite a DLP speaker to give lectures at the NTHU in 2017. This aims to improve interaction with international scholars and boarder views of chapter members and guest attendees. This kind of lectures further helps the chapter working together with the IEEE CAS as well. The topics may include challenges and opportunities of circuits and systems on Internet of Things, perpetual wireless video camera for Internet of Things, and so on.
- We plan to organize workshops for high school and university students, for example, High School Students Meeting with Experts, Summer School on IC Design, Workshop on Circuits, Systems and Signal Processing, and so on. These workshops aim to encourage more students to know more about engraining and IC Design, especially those in high school. For university and graduate students, we expect to promote their academic abilities through offering them opportunities to meet with experts and distinguished researchers from different universities and institutions all over the world.
- We hope to apply for finical support from the IEEE CAS and the Taipei Section to invite speakers and facilitate these lectures and workshops successfully.

➤ **Chapter Name: Consumer Electronics Society Taipei Chapter (CE08)**

We plan to do the following few events

- Prepare to host the upcoming ICCE-TW 2017 conference.
- Host several talks in NCTU and other universities.
- Expand the student chapters' universities.

➤ **Chapter Name: Council on Electronic Design Automation Taipei Chapter (CEDA44)**

- The goals of IEEE CEDA Taipei Chapter include the continuation of serving EDA faculty, students, and professionals in Taiwan for more effective discussions and explorations of new ideas. Tentative activities include 12 seminars, 1-2 EDA forums, 1-2 workshops/short course and 2 member meetings. The targeted talent incubation activity will include Taiwan EDA summer camp 2017.

➤ **Chapter Name: Computational Intelligence Society (CIS11)**

- To support the advancement of the professional standing of its members and their continuous education and encourage compliance with the standards of ethical and professional conduct as set forth by the IEEE.
- To promote close cooperation and exchange of technical information among its members and with other professional societies and individuals who share common interests in its field of interest from all over the world, by means of technical committees, public meetings, publications, educational activities, standards, and any other activities which are necessary, suitable, and proper for the fulfillment of these objectives.
- To identify strategic directions for the development of the CIS.
  - Recruit more excellent members to join us.
  - Help our members to upgrade their membership levels.

- At least four chapter activities during one year.
- To cooperate with other Organizational Units of the IEEE or other organizations.

➤ **Chapter Name: Communications Society Taipei Chapter (COM19)**

- 2017 National Symposium on Telecommunication will be held during January 20 and 21, 2017 by National Chiao-Tung University at Nantou, Taiwan.
- 2017 Spring Workshop on Information Theory and Communications will be held during January 21 and 22, 2017 and be hosted by National Chiao-Tung University at Nantou, Taiwan.
- The current plan for 2017 Fall Workshop on Information Theory and Communications is to be hosted by National Penghu University of Science and Technology at Penghu, Taiwan in August 2017.
- 2017 Summer school on Information Theory, Communication Theory and Technologies will be held in August 2017 by National Chiao-Tung University.
- We will collaborate with IT12 Chapter to co-organize 2017 IEEE Information Theory Workshop in Kaohsiung, Taiwan.

➤ **Chapter Name: Computer Society (C16)**

- New member recruitment
- Collaboration with local societies or affiliations, such as CISA, Academia Sinica, NTU, etc.

➤ **Chapter Name: Components, Packing, and Manufacturing Technology Society Taipei Chapter (CPMT21)**

We will continue to boost up the membership of CPMT Taipei Chapter. Besides, CPMT Taipei Chapter will keep on collaborating with TPCA and ITRI to organize the workshop or conferences in the field of IC packaging, assembly and PCB.

➤ **Chapter Name: Control Systems Society Taipei Chapter (CS23)**

Our goal is to promote the society visibility and recruit more faculty and students to join CS23. To this end, we will continue to help host several control-oriented international conferences and invite distinguished scholars to have a talk in Taiwan.

➤ **Chapter Name: Education Society Taipei Chapter (E25)**

To promote local practice oriented courseware design and teaching:

- The chapter chair will join the board of directors of the Taiwan Embedded Microcontroller Development Institute. The society will try to cooperate with the Institute to hold several technical meetings for technical and vocational students and teachers in Taiwan.

To promote local colleagues to submit papers to engineering education oriented international conference and journals:

- The chapter chair was promoted as a Professor by using representative papers published in engineering education oriented international journals. We hope to encourage local colleagues who are not working in research oriented universities to do research works for engineer education, and to benefit those not so smart students in Taiwan

➤ **Chapter Name: Electron Devices Society Taipei Chapter (ED15)**

The ED Taipei chapter has been very active in its activities. In the year 2017, several major tasks have been planned as below.

- Help of the local society to seek for IEEE EDS Co-sponsorship in conferences.
- The chapter will help the EDSSC conference hosted by NTHU in Hsinchu, October, 2017, and the filing for IEEE EDS technical co-sponsorship has been completed.
- In the past 6 years, an international symposium, eMDC, via the help of the chapter has acquired the EDS technical co-sponsorship. Special assistance will be provided in 2017.
- The chapter will regularly invite at least 6-8 invited speakers from overseas in stimulating the academic research, encouraging DL from overseas. These talks are open to university students and engineers in northern Taiwan.
- The chapter will help to solicit more members to become DL (Distinguished Lecturers) and become the TPC members in worldwide conferences.
- Promoting of senior members – a target of 5-10 senior members will be filed and approved in 2017.

➤ **Chapter Name: Engineering in Medicine and Biology Society Taipei Chapter (EMB18)**

- To promote biomedical engineering education to students, engineers, and medical practitioners through workshops and conferences.
- To facilitate biomedical industry through intensive and extensive collaborations between research institutes, universities, and industries.
- To have international visibility through hosting conferences and international collaborations.

➤ **Chapter Name: Geoscience and Remote Sensing Society Taipei Chapter (GRS29)**

GRS29 will continue hosting the IEEE GRS-S Taipei Chapter Best Thesis Award per year.

➤ **Chapter Name: Electromagnetic Compatibility Society Taipei Chapter (EMC27)**

The goals of Taipei EMC Chapter (EMC27) are to advance the Taiwan EMC industry technology, enrich information exchange in the Taiwan EMC society, and foster the links between the society and the world. For these goals, three committees (Executive Committee, Advisory Committee, and Technical Program Committee) were founded and are running well. They will aggressively participate in accomplishing the activities stated in D.1 to achieve the Chapter goals.

➤ **Chapter Name: Information Theory Society Taipei Chapter (IT12)**

- Promote workshop participation by accepting poster submissions from outside of Taiwan in future workshops.
- Promote student networking by adding a student session held in parallel with the panel discussion session in future workshops.

➤ **Chapter Name: Magnetics Society Taipei Chapter (MAG33)**

- Promotion of interactions between members via regular meetings:
  - Plan to hold more meetings in Northern and Southern Taiwan to promote interactions between members.
- Recruiting more MAG33 members:
  - By promotions in any activities.
  - Working out an approach to support the registrations of new members.
- Other Workshops are being planned:
  - More likely to hold some workshops.

➤ **Chapter Name: Microwave Theory and Techniques Society Taipei Chapter (MTT17)**

- MTT-S Taipei Chapter will co-sponsor the 2017 Wireless Power Transfer Conference (WPTC2017), which will be held in Taipei from May 10 to 12. This conference focuses on wireless energy/power transmission, energy harvesting/conversion and related technologies. The meeting intends to cover a broad range of areas related to devices, integrated circuits, systems and applications of WPT. In addition to high-quality technical sessions, the conference will feature tutorials as well as product exhibitions. The conference website is <http://www.wptc2017.org/>.
- The MTT-S Taipei Chapter members will help organize the session of RF/mm-Wave Circuits and Wireless Transceiver for 2017 VLSI/CAD symposium. The conference is the premium national technical meeting in the area of integrated-circuit design, testing, computer-aided-design. The technical session includes oral presentation and invited paper presentation.

➤ **Chapter Name: Power Electronics Society Taipei Chapter (PEL35)**

- Planned Activity 1: Sponsoring an international student competition- IEEE IFEC 2017  
The IFEEC 2017 is an international forum for presentation and discussion of the state of the art technology in Energy Electronics and related topics. It is a bi-annual international conference held in Taiwan. This year, it is a joined conference with the IEEE PELS flagship conference in Asia. The title of the conference becomes IEEE IFEEC 2017- ECCE Asia. This conference is supported by PELS, IAS, and IE.

➤ **Chapter Name: Product Safety Engineering Society Taipei Chapter (PSE43)**

- Organize some workshops in May and Sep 2017 to encourage more industry safety professional to engage IEEE event

- Cooperate with CE chapter to prepare an IEEE International PSES conference

➤ **Chapter Name: Photonics Society Taipei Chapter (PHOT36)**

- Goals for 2017, member of the IPS Taipei Chapter is primarily on participation several international conferences and workshops which will be held in Taiwan. We may broadcast and stimulate the inter-activity and discussion among students, researchers, and industrial people. We could recruit IPS regular members and students members. For example, we will establish an IEEE Student Branch at National Chiao Tung University in 2017.
- Display International 2017 (ICNP 2016) will be held during Sep. 20, 22, 2017. Many IPS PHO36 members serve as organizing committee members and will attend the conference.
- 2017 IEEE International Symposium on Next Generation Electronics (ISNE) will be held during May 23-25, 2017 and be hosted by National Ocean University, Taiwan. IPS Taipei Chapter technical sponsor and a chapter meeting will also be held then.
- 2017 Summer School on Photonics will be held at National Central and Chiao Tung University, Taiwan.
- 2017 Optics and Photonics will be held during Dec., 2017 and be hosted by National Sun Yat-sen University. Again, IPS Taipei Chapter will technically sponsor OPTIC 2017 and a chapter meeting will also be held then.
- TVC annual Symposium 2017 will be held on Oct. 27 at National Cheng Kung University. The activity may benefit to student members..

➤ **Chapter Name: Reliability Society Taipei Chapter (RL07)**

In order to promote IEEE Reliability Society in Taiwan, IEEE Taipei Section (RL07) will continue to serve its members next year by holding invited lectures, keynote speeches, and seminars.

➤ **Chapter Name: Sensors Council Taipei Chapter (SEN39)**

Goal of SEN39 is to promote and to enhance cross-disciplinary collaboration on sensor IC readout design and new sensor research. In future, we will form a course for undergraduate and graduate students to really sensor IC design and to measure read-out sensor signals by using EDA tool such as HSPICE. We hope to stimulate students' motivation by the "experimental project".

➤ **Chapter Name: Solid-State Circuits Society Taipei Chapter (SSC37)**

- Membership promotion: Increase the member of IEEE SSCS.
- Invited speakers for both DL and non-DL: To increase the visibility of IEEE SSCS in Taiwan academic and industry.

➤ **Chapter Name: Systems, Man, and Cybernetics Society Taipei Chapter (SMC28)**

- Goal:
  - Continue to promote IEEE SMC visibility.
  - Recruit more faculty and students to join IEEE SMC membership.
- Future Plans:
  - Continue to expand faculty and students volume in IEEE SMC membership.
  - Host more activities to make faculty and students understand the advantages of becoming members to the SMC society.
  - Organize and host Distinguished Lectures workshops in Taipei.
  - Organize workshops to promote and recruit new members to join IEEE SMCS

➤ **Chapter Name: Systems, Man, and Cybernetics Society Taichung Chapter (SMC28)**

- Goal:
  - Continue to promote the visibility and of IEEE SMC in Taichung .
  - Recruit more faculty and students to join IEEE SMC membership.
- Future Plans:
  - Continue to promote the visibility and of IEEE SMC in Taichung .
  - Recruit more faculty and students to join IEEE SMC membership.
  - Organize workshops to promote and recruit new members to join IEEE SMCS. To recruit more active members for SMC society, particularly members from Central Taiwan.
  - To involve more activities with SMC conferences and SMC supported conferences
  - To organize one session for 2017 IEEE International Conference on Systems, Man, and Cybernetics, 2016.
  - To technically co-sponsor 2017 IEEE International Conference on System Science and Engineering.
  - To technically co-sponsor 2017 International conference on Control, Automation and Systems in Korea.
  - To technically co-sponsor 2017 International conference on Informative and Cybernetics for Computational Social Systems.
  - To technically co-sponsor SICE 2017 Annual Conference of the Society of Instrumentation and Control Engineers (SICE), Japan.
  - To technical co-sponsor 2017 National Symposium on System Science and Engineering.
  - To technical co-sponsor 2017 International conference on Fuzzy Theory and Its Applications
  - To technical co-sponsor 2017 Chinese Automatic Control Conference to organize 2016 CACS International Automatic Control Conference.
  - To promote 2017 International Conference on Advanced Robotics and Intelligent Systems in Taipei, Taiwan.
  - To promote 2017 Cross-Strait Symposium on Robotics, 2017.

➤ **Chapter Name: Vehicular Technology Society Taipei Chapter (VT06)**



- We plan to work on membership promotion and encourage more potential researchers to be VTS members in 2017.
- We plan to sponsor IEEE VTS Taipei members to give technical talks in Taiwan in order to promote technical interactions among IEEE VTS Taipei members.
- We plan to invite IEEE Distinguished Lecturers/Scholars to Taiwan for research interactions and/or possible research collaborations:

➤ **Student Branch Name: IEEE NTU Student Branch (National Taiwan University)**

- Nowadays, we are preparing to build up 2-3 workshops (still under discussion) in NTU campus, and hold a guest lecture in about April. We've already set up our facebook fanpage (this idea was originated from IEEEESB in UIUC); moreover, we are going to propose an essay-guide slides for getting familiar with our branch, what IEEE is for, how we works, and most importantly, how to join our community and furthermore become an IEEE student member.
- Here is our facebook fanpage (url: <https://www.facebook.com/ieeentu.taipei/>), and the essay-guide will be posted on facebook in a few days.

➤ **Student Branch Name: IEEE NCTU Student Branch (National Chiao Tung University)**

Currently, the biggest issue in our section is the lack of active members. So our main goal right now would be trying to increase the number of the members. To achieve this goal, we plan to invite more students in NCTU to join our section's organization. By this way, our section can have the ability to hold more interesting activities and attract more students wanting to become one of our section.

➤ **Student Branch Name: IEEE NCU Student Branch (National Central University)**

The table below shows our future plans.

Date	Event	Contain	Student
2017/2/22	<b>Orientation Party</b>	Introduction of IEEE Student Branch in NCU	All student members
2017/3/22	<b>Student Presentation 1</b>	During the discussion	During the discussion
2017/3/29	<b>Student Presentation 2</b>	During the discussion	During the discussion
2017/4/19	<b>Student Presentation 3</b>	During the discussion	During the discussion
2017/4/25	<b>Institution visit</b>	During the discussion	During the discussion
2017/5/3	<b>Student Presentation 4</b>	During the discussion	During the discussion
2017/5/9	<b>Laboratory visit</b>	Dell Inc.	During the discussion
2017/5/17	<b>Student Presentation 5</b>	During the discussion	During the discussion
2017/5/31	<b>Student Presentation 6</b>	During the discussion	During the discussion
2017/6/7	<b>Final Party</b>	Giving award to well-performed students	During the discussion

Date	Event	Contain	Student
2017/2/22	<b>Orientation Party</b>	Introduction of IEEE Student Branch in NCU	All student members
2017/3/22	<b>Student Presentation 1</b>	During the discussion	During the discussion
2017/3/29	<b>Student Presentation 2</b>	During the discussion	During the discussion
2017/4/19	<b>Student Presentation 3</b>	During the discussion	During the discussion

The members in this year have special interests in this field, we decide to improve their knowledge by discussing, so does presentation.

➤ **Student Branch Name: IEEE NTUST Student Branch (National Taiwan University of Science and Technology)**

Four talks of the IEEE SMC Student Branch Chapter at NTUST will be held in 2017.

➤ **Student Branch Name: PEL Society (PELS) Student Branch Chapter at NTHU**

The future plan is to recruit more member to the power electronic society.

➤ **Student Branch Name: ED Society (EDS) Student Branch Chapter at NTHU**

In 2016, we expect regular invited talks and some additional arrangements.

- Regular seminars – The annual “Taiwan Power Semiconductor” workshop will be held in campus in July. Besides, we will arrange few invited speakers, including DLs and experts from the Science Park.
- A Facebook fan page is established to share some latest news in semiconductor devices.
- The on-site visit to the Science Park companies, in Hsinchu and Taichung, in conjunctions with the companies’ open house activities.

➤ **Student Branch Name: IEEE NSYSU Student Branch (National Sun Yat-sen University)**

We will encourage more students to join IEEE. To achieve this, we will enhance in promoting IEEE and explaining for the benefits of joining IEEE.

➤ **Student Branch Name: IEEE CYCU Student Branch (Chung Yuan Christian University)**

- We will encourage more students to join IEEE.
- Nontechnical meeting in March 2017.
- Technical discussion meeting in June 2017.

➤ **Student Branch Name: SMC Society (SMC) Student Branch chapter at NCHU**

- More student members are encouraged to attend 2017 National conference on systems science and engineering held in July 2017.

- More student members are encouraged to attend 2017 International conference on Advanced Robotics and Intelligent Systems held at Taipei Nangang Exhibition Center, Taipei, Taiwan, in September 2017..

➤ **Student Branch Name: IEEE NTHU Student Branch (National Tsing Hua University)**

More nontechnical and professional lectures and meetings will be held in 2017.

➤ **Student Branch Name: ED Society (EDS) Student Branch Chapter at NCTU**

- The branch chapter will regularly invite at least 3 invited speakers from overseas in stimulating the academic research, encouraging DL from overseas. These talks are open to university students and engineers in the Hsinchu Science Park.
- Promoting of new members through workshops/seminars- a target of 12-17 new members will be recruited in 2016-2017.
- Arrangement of our student members to have a tour of science park companies.