IEEE Taipei Section

Annual Report 2017

Prepared by

Chung-Chih Hung

Secretary (2017/2018)

Yi-Bing Lin

Chair (2017/2018)

Suggested Section Report Format

PART A - SECTION SUMMARY

A.1 Executive Summary

- Section Executive Committee Member List

Section Officer (2017-2018)

Chair

Prof. Yi-Bing Lin (National Chiao Tung University)

Email: liny@cs.nctu.edu.tw

Vice Chair

Prof. Ming-Dou Ker (National Chiao Tung University)

Email: mdker@ieee.org

Secretary

Prof. Chung-Chih Hung (National Chiao Tung University)

Email: cchung@mail.nctu.edu.tw

Treasurer

Prof. Chun-Cheng Lin (National Chiao Tung University)

Email: cclin321@nctu.edu.tw

Membership Development

Prof. Sheng-Wei Lee (National Central University)

Email: swlee@g.ncu.edu.tw

Professional Activities

Prof. Ai-Chun Pang (National Taiwan University)

Email: acpang@csie.ntu.edu.tw

Student Activities

Prof. Po-Hung Chen (National Chiao Tung University)

Email: hakko@nctu.edu.tw

Educational Activities

Prof. Pei-Wen Li (National Chiao Tung University)

Email: pwli@nctu.edu.tw

Webmaster

Prof. Yu-Sung Wu (National Chiao Tung University)

Email: ysw@cs.nctu.edu.tw

- Section Highlights
  - Sponsor many 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 19 students who had been benefited from 19 applications in 2017.
  - Taipei Section has 8 newly elevated IEEE Fellow of 2018.
  - Section website redesign was completed in Jan 2017.
  - Section Treasurer Prof. Chun-Cheng Lin attended the IEEE Sections Congress 2017.
  - Taipei Section has proposed a recommendation of "Develop an incentive program for corporations to join IEEE as 'Corporate Member'" for IEEE Sections Congress. The recommendation had been selected as top recommendation by R10 for Sections Congress and then was voted as the first priority in the IEEE Sections Congress 2017.

- Major Events (International, National)
  - Sponsor

Category	Meeting	Date
Administrative	Section Executive Committee Meeting	2017.03.24 2017.03.28 2017.04.26 2017.05.17 2017.07.17 2017.09.04 2017.11.27 2018.01.09
	Taipei Section 2016 Regular Meeting	2017.01.24 2017.06.12 2017.09.11 2018.01.18

  - **Co-sponsor**

Category	Meeting	Date
Technical (Advertisement)	2017 6th International Symposium on Next Generation Electronics (ISNE)	2017.5.23~25
	2017 International Conference on System Science and Engineering (ICSSE)	2017.7.21~23
	2017 8th International Conference on Awareness Science and Technology (iCAST)	2017.11.8 ~10
	2017 Asia Fog Computing and Networking Summit (AFCNS)	2017.11.30-12.1
	2017 Second International Conference on Computational Intelligence Theory, Systems and	2017.12.12~14

	Applications (CCITSA)	
	2017 18th International Conference on Parallel and Distributed Computing, Applications and Technologies(PDCAT)	2017.12.18~20
	2017 IEEE International Symposium on Product Safety and Compliance Engineering - Taiwan (ISPCE-TW)	2017.12.21~22

- Major Chapter Activities
  - IEEE Council on RFID Taipei Section Chapter was established this year.
  - 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
  - National Kaohsiung Marine University Industry Applications Society Student Branch Chapter established in this year.

- Awards
  - Rendering Awards for outstanding Chapter and outstanding Student Branch/ Chapter.
    Outstanding Chapter Award: Communications Society Taipei Chapter
    Outstanding Student Branch/ Chapter Award: IEEE NCU Student Branch (National Central University)

A.2 Financial Report

- 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 2017 was NT$5,636,433 including NT$574,787 of 2017 rebate in May 2017. The total expenses were NT$4,012,328. The final balance at the End of 2017 is NT$14,327,217. More detail is included in the 2017 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	2015 Members	2016 Members	2017 Members
Affiliate	84	63	60
Associate	84	69	54
Fellow	99	95	94
Graduate Student	399	357	331
Life Fellow	19	24	29
Life Member	11	13	14
Life Senior	4	8	12
Member	1968	1895	1815
Senior Member	352	366	365
Student	192	186	172
Total	**3212**	**3076**	**2946**

- 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: 35

1. **Chapter Name: Antennas and Propagation Society Taipei Chapter (AP03)**
   Chapter Chair: Shih-Yuan Chen
   Title and Affiliation: Professor, Dept. of Electrical Engineering, National Taiwan University
   Email: shihyuan@ntu.edu.tw

2. **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: Kea-Tiong Samuel Tang
   Title and Affiliation: Assistant Professor, Department of Electrical Engineering, National Tsing Hua University.
   Email: kttang@ee.nthu.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: Iris Hui-Ru Jiang
   Title and Affiliation: Professor, Department of Electrical Engineering, National Taiwan University
   Email: huirujiang@ntu.edu.tw

7. **Chapter Name: Computational Intelligence Society Taipei Chapter (CIS11)**
   Chapter Chair: Chia-Feng Juang
   Title and Affiliation: Distinguished Professor, Department of Electrical Engineering, National Chung Hsing University
   Email: cfjuang@nchu.edu.tw

8. **Chapter Name: Communications Society Taipei Chapter (COM19)**
   Chapter Chair: Yao-Win Peter Hong
   Title and Affiliation: Professor, Institute of Communications Engineering, National Tsing-Hua University
   Email: ywhong@ee.nthu.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: Council on RFID (CRFID-741)**
Chapter Chair: Chow-Yen-Desmond Sim
Title and Affiliation: Distinguished Professor, Department of Electrical Engineering, Feng Chia University
Email: cysim@fcu.edu.tw

11. **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

12. **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

13. **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

14. **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

15. **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: dblin@mail.ntust.edu.tw

16. **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

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

Chapter Chair: Po-tai Cheng

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

Email: ptcheng@ee.nthu.edu.tw

18. **Chapter Name: Industrial Electronics Society Taipei Chapter (IE13)**

Chapter Chair: Yi-Hwa Liu

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

Email: yhliu@mail.ntust.edu.tw

19. **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@pme.nthu.edu.tw

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

Chapter Chair: Jwo-Yuh Wu

Title and Affiliation: Professor, Department of Electrical and Computer Engineering, National Chiao Tung University

Email: jywu@cc.nctu.edu.tw

21. **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

22. **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

23. **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

24. **Chapter Name: Power and Energy Society Taipei Chapter (PE31)**
Chapter Chair: Chi-Shan Yu
Title and Affiliation: Associate Professor, Department of Digital Technology Design, National Taipei University of Education
Email: chsyu@tea.ntue.edu.tw

25. **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: ntuymchen@ntu.edu.tw

26. **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

27. **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

28. **Chapter Name: Robotics and Automation Society Taipei Chapter (RA24)**
Chapter Chair: Chieh-Chih Wang
Title and Affiliation: Professor, Department of Electrical and Computer Engineering, National Chiao Tung University
Email: bobwang@nctu.edu.tw

29. **Chapter Name: Reliability Society Taipei Chapter (RL07)**
Chapter Chair: Shiuhpyng Shieh
Title and Affiliation: University Chair Professor, Department of Computer Science, National Chiao Tung University
Email: ssp@cs.nctu.edu.tw

30. **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

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

Chapter Chair: Chen-Chien James Hsu

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

Email: jhsu@ntnu.edu.tw

32. **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

33. **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

34. **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

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

Chapter Chair: Feng, Kai-Ten

Title and Affiliation: Professor, National Chiao-Tung University

Email: ktfeng@g2.nctu.edu.tw

- Number of Chapters formed in the current year: 1
  - IEEE Council on RFID Taipei Section Chapter was established in Oct. 28, 2017
- Number of Active Chapters (Chapters who have reported required number of meetings during the year): 29

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

IEEE AP-S Taipei Chapter Co-Sponsor Activities/Conferences/Talk conducted in 2017:

i. 2017 Electromagnetics Workshop-A Bridge to the future, Venue: Boutix Resort Yehliu, New Taipei City, Taiwan. Date: 16-18 January 2017.

Website: https://sites.google.com/site/2017emworkshop/

Attendees	Technical Reports	IEEE Members	IEEE APS-Members
121	18	45	15

ii. IEEE 2017 Wireless Power Transfer Conference (WPTC 2017), Venue: Howard International House, Taipei, Taiwan. Date: 10-12, May 2017.

Website: http://www.wptc2017.org/

Attendees	Technical Reports	IEEE Members	IEEE APS-Members
160	120	51	13

iii. IEEE AP-S Distinguished Lecturer Talk by Dr. Sudhakar Rao (IEEE Fellow), Title: Antenna Systems for Next Generation Navigation and High Frequency Satellites, Venue: Feng Chia University, Taichung, Taiwan, and National Taiwan University, Taipei, Taiwan. Date: 06 June 2017 and 09 June 2017.

Attendees	IEEE Members	IEEE APS-Members
141	5	5

iv. IEEE AP-S Invited Lecturer Talk by Professor Paolo Nepa (I'Universita di Pisa), Title: Radio Frequency Identification: A key Enabling Technology for Internet-of Things Applications, Venue: National Taiwan University, Taipei, Taiwan. Date: 02 October 2017.

Website: http://temiac.ee.ntu.edu.tw/app/news.php?Sn=372

Attendees	IEEE Members	IEEE APS-Members
121	31	9

2. <u>Chapter Name: Broadcast Technology Society Taipei Chapter (BT02)</u>

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

i. Workshop on Machine Learning for Big Visual Data

Date: March 17 – March19, 2017

Location: Everlight Building 2~3F., No.1, Sec. 3, Zhongxiao E. Rd., Da'an Dist., Taipei City 106, Taiwan R.O.C.

Attendance: Member: 20, Guests 140

There will be an 18-hour workshop on “Machine Learning for Big Visual Data,” which covers many important aspects of machine learning algorithms specifically targeted for image/video and computer vision application. The topics are including Unsupervised Learning of Visual Data、Supervised Learning、 From Neural Networks to Deep Learning、Hidden Markov Model and Re-estimation Learning、Applications to Image Analytics、Application to Video Analytics.

ii. Workshop on Urban Computing: Enabling Urban Intelligence with Big Data and AI

Date: September 1 – September 3, 2017
Location: Everlight Building 2~3F., No.1, Sec. 3, Zhongxiao E. Rd., Da’an Dist., Taipei City 106, Taiwan R.O.C.
Attendance: Member: 20, Guests 120
There will be an 18-hour workshop on “Urban Computing: Enabling Urban Intelligence with Big Data and AI,” which covers many important aspects of Urban Data Computing specifically targeted for Big Data Analytics and Artificial Intelligence. Topics are focusing on Urban sensing、Urban data management、Urban data analytics.

iii. Workshop on Power Electronics for Renewable Energy and Micro Grid Applications

Date: May 6, 2016
Date: November 19 - November 21, 2017
Location: Everlight Building 2~3F., No.1, Sec. 3, Zhongxiao E. Rd., Da’an Dist., Taipei City 106, Taiwan R.O.C.
Attendance: Member: 20, Guests 100
Worldwide promotion of renewable energy prompts the need for advanced power electronics technologies. These technologies not only involve advanced control techniques, but also need to be ultra-high efficient such that the available energy sources are not wasted. A successful design requires a wide range of knowledge in power electronics. This course will focus on energy related power conversion techniques and solve both system level and power conversion level efficiencies. Related subjects include energy source characteristics and power conversions for difference sources. Two type of energy sources are categorized: stationary and rotationary. On stationary sources, solar, fuel cell, and thermoelectric systems are used as examples. On rotationary sources, wind, geothermal, and wind are used as examples. The essential power electronics circuits including dc-dc, ac-dc, and dc-ac converters will be incorporated with the individual energy source as the integral part of discussion. For the grid related issues, solutions of single phase related low-frequency ripples and multilevel converters will be explored. The well-known IEEE 1547 grid interconnect standard and related control technique will also be discussed. Day 1: Renewable Energy Sources and Optimal Energy Production、Day 2: AC-DC and DC-AC Power Conversions、Day 3: Micro Grid and Utility Power Electronics

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

i. The 28th VLSI Design/CAD Symposium, Aug. 1-4, 2017

Venue: Howard Hotel, Kaohsiung, Taiwan

Attendance: Members, Guests

Website:

http://vlsicad2017.nctu.edu.tw/site/page.aspx?pid=901&sid=1141&lang=cht

【Keynote Speeches-1】

Dr. Robert Li, Country Manager, Synopsys Taiwan

With the advancing of Nano technology empowering by Moore's law and the immense demand of complicate applications, .i.e., autonomous driving enabling by AI, we are entering a "Digital Intelligence" era where different algorithms need to integrate together to achieve the design convergence and hardware/software are fused together to provide a "smarter" solution. In this presentation, I will use automotive design as an example to share the key focus areas: IP, Algorithm fusion, HW/SW Verification/Prototyping, Security and Machine Learning, to explain the trend of Digital Intelligence and few examples of AI initiative in EDA application.

【Keynote Speeches-2】

Dr. Kevin Zhang

The relentless pursuit of Moore's law by semiconductor industry has led the feature size of CMOS transistor well into nano-scale regime. Deeply scaled technologies have created many new challenges for circuit design, e.g., variation, and voltage head-room. In this presentation, an overview of today's technology landscape will be presented first, including major innovations that have kept the Moore's law continue. Then the focus will be on how to address scaling challenges with novel circuit design techniques, ranging from digital to memory, to analog, and to mixed signals. A number of real design examples will be used to illustrated the new design concept. A central theme throughout the presentation will be a comprehensive view that technology and design will need to be co-optimized in order to meet the complexity of future product requirements.

ii. IEEE Computer Society Distinguished Visitor Program-2020: Toward Distributed Quantum Computing, Dec. 8, 2017

Venue: Institute of Information Science, Taipei, Taiwan

Attendance: Members, Guests

Website:

http://www.ieee.org.tw/chapters/News/news_more.php?web_class=6&id=114

Very recently, researchers worldwide have started to devote massive efforts in designing and implementing quantum computation, with 17-qubit computing

processors already prototyped and several groups making very fast progress towards the 50-qubit regime. Nevertheless, to fully unleash the ultimate vision of the quantum revolution, it is necessary to design and to implement quantum networks, able to connect distant quantum processors through remote quantum entanglement distribution. However, despite the tremendous progress of quantum technologies, long-distance efficient entanglement distribution still constitutes a key issue, and several key research issues must be addressed to design and eventually deploy quantum networks. Hence, this tutorial aims at providing the participants with a wide view about quantum networks and the unique challenges for transmitting quantum information.

iii. The 18th International Conference on Parallel and Distributed Computing, Applications and Technologies (PDCAT'17), December 18-20, 2017

Venue: NTUST, Taipei, Taiwan
Attendance: Members, Guests
Website: http://pdcat17.csie.ntust.edu.tw/

The International Conference on Parallel and Distributed Computing, Applications and Technologies (PDCAT) is a major forum for scientists, engineers, and practitioners throughout the world to present the latest research, results, ideas, developments and applications in all areas of parallel and distributed computing. Following PDCAT'00 in Hong Kong, PDCAT'01 in Taipei, PDCAT'02 in Kanazawa, Japan, PDCAT'03 in Chengdu, China, PDCAT'04 in Singapore, PDCAT'05 in Dalian, China, PDCAT'06 in Taipei, Taiwan, PDCAT'07 in Adelaide, Australia, PDCAT'08 in Dunedin, New Zealand, PDCAT'09 in Hiroshima, Japan, PDCAT'10 in Wuhan, China, PDCAT'11 in Gwangju, Korea, PDCAT'12 in Beijing, China, PDCAT'13 in Taipei, Taiwan, PDCAT'14 in Hong Kong, China, PDCAT'15 in Jeju, Korea, PDCAT '16 in Guangzhou, China, PDCAT'17 will take place in Taipei, Taiwan.

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

In year 2017, we have accomplished the following activities:

Category	Date	Speaker/title/venue
Technical	Apr. 25, 2017	Distinguished Lecture by Prof. Hao Yu titled " Machine-learning Enhanced Biomedical Data Analytics **(@National Tsing Hua University, Taiwan)**
	July 31, 2017	Distinguished Lecture by Prof. Pantelis Georgiou "CMOS Microelectronics for DNA detection using Ion-Sensitive Field Effect Transistors" **(@National Tsing Hua University, Taiwan)**
	Aug. 1, 2017	Distinguished Lecture by Prof. Pantelis Georgiou "CMOS Microelectronics for DNA detection using Ion-Sensitive Field Effect Transistors" **(@National Cheng Kung University, Taiwan)**

	Aug. 3, 2017	Distinguished Lecture by Prof. Pantelis Georgiou "CMOS Microelectronics for DNA detection using Ion-Sensitive Field Effect Transistors" **(@ Howard Beach Resort KENTING, Taiwan)**
	Aug. 4, 2017	Distinguished Lecture by Prof. Pantelis Georgiou "CMOS Microelectronics for DNA detection using Ion-Sensitive Field Effect Transistors" **(@ National Taiwan University, Taiwan)**
	Apr. 24-27, 2017	2017 VLSI-DAT Conference [@**Ambassador Hotel, Hsinchu, Taiwan**]
	Aug. 21-23, 2017	2017 TJCAS Conference [@**Okayama, Japan**]
	Sep.14 , 2017	Distinguished Lecture by Prof. Yen-Kuang Chen "Perpetual Wireles Video-of-Things" **(@National Tsing Hua University, Taiwan)**
	Oct. 18-20, 2017	2017 IEEE EDSSC Conference [@**Hsinchu, Taiwan**]
Educational	Apr. 28-30, 2017	2017 SEMBA Conference [@**Sheraton Hsinchu Hotel, Hsinchu, Taiwan**]
Admin.	Aug. 3, 2017	Chapter Annual General Assembly **(@ Howard Beach Resort KENTING, Taiwan)**

5. <u>Chapter Name: Consumer Electronics Society Taipei Chapter (CE08)</u>

Annual Activities:

i. IEEE International Symposium on Product Compliance Engineering-Taiwan

Date: Dec. 21-22, 2017

Topic: "Product Compliance Engineering"

Lecturer: John Allen and Stefan Mozar

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 21-22 of December 2017, we held the 2nd IEEE International Symposium on Product Compliance Engineering-Taiwan in Taipei. The event was a two-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. The event had a number of papers and invited speakers, and over 80 attendees. The 2018 PSES President John Allen came to support this event in Asia for the second time.

ii. IEEE Consumer Electronics Taipei Chapter Meeting

Date: Aug. 3, 2017

Topic: MANY-OBJECTIVE EVOLUTIONARY ALGORITHMS-VISUALIZATION AND DECISION-MAKING

Venue: National Taiwan Normal University (NTNU), Taipei

Summary: Prof. Gary G. Yen from Oklahoma State University is invited to provide a talk at NTNU. The topic is "MANY-OBJECTIVE EVOLUTIONARY ALGORITHMS-VISUALIZATION AND DECISION-MAKING. The abstract is as below:

Evolutionary computation is the study of biologically motivated computational paradigms which exert novel ideas and inspiration from natural evolution and adaptation. The applications of population-based heuristics in solving multiobjective optimization problems have been receiving a growing attention. To search for a family of Pareto optimal solutions based on nature-inspiring problem solving paradigms, Evolutionary Multiobjective Optimization Algorithms have been successfully exploited to solve optimization problems in which the fitness measures and even constraints are uncertain and changed over time.

When encounter optimization problems with many objectives, nearly all designs perform poorly because of loss of selection pressure in fitness evaluation solely based upon Pareto optimality principle. In addition to various Many-Objective Evolutionary Algorithms proposed in the last few years, this talk will be devoted to address three issues to complete the real-world applications at hand- visualization, performance metrics and multi-criteria decision-making for the many-objective optimization. Visualization of population in a high-dimensional1 objective space throughout the evolution process presents an attractive feature that could be well exploited in designing many-objective evolutionary algorithms. A performance metric tailored specifically for many-objective optimization is also designed, preventing various artifacts of existing performance metrics violating Pareto optimality principle. A minimum Manhattan distance (MMD) approach to multiple criteria decision making in many-objective optimization problems is proposed. This procedure is equivalent to the knee selection described by a divide and conquers approach that involves iterations of pairwise comparisons.

iii. 2017 IEEE ICCE-TW

Date: June 12 – June 14, 2017

Topic: VR/AR Consumer Electronics: From Dreams to Reality

Venue: National Taipei University of Technology, Taipei, Taiwan

Summary: IEEE International Conference on Consumer Electronics-Taiwan (ICCE-TW) is held at the National Taipei University of Technology, Taiwan. After the successful experiences of 2014 & 2015 & 2016 ICCE-Taiwan, the 4th 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 "Trends in Consumer Electronics and Your Role as an Engineer" was given by Brian Markwalter. Engineers today need to be conversant if not skilled in new areas, such as deep learning, and a few older ones undergoing rapid change, like 5G. This presentation explores changes and trends in consumer electronics and the skills engineers need to be learning today to continue to create products that excite and amaze consumers. The second one "Prospective 3D AR/VR Broadcasting Systems in Taiwan" is provided by Prof. Jar-Ferr Yang from NCKU. He not only overviews the latest 3D visualization technologies developed in current MPEG organization, but forecasts that the future trends of 3D video broadcasting, 3D gaming and 3D edutainment to be merged to an enjoyable and immersive 3D VR/AR world. That is, the conference theme of 2017 IEEE ICCE-TW is "VR/AR Consumer Electronics: From Dreams to Reality." Hence, the conference features a strong and rich program, including five inspiring keynote speeches, several poster sessions and one tutorial. 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 2017:

i. Chapter Meetings

No	Date	Venue
1	August 2, 2017	Howard Beach Resort, Kenting
2	December 2, 2017	Fushin Hotel, Tainan

ii. Seminars

No	Title	Speaker	Date	Venue
1	Towards Efficient Deep Learning Processing on FPGA	Prof. Yu Wang of Tsinghua U., Beijing, China	February 13, 2017	National Tsing Hua University
2	The Good, The Bad and The Ugly of Clock Tree Synthesis	Dr. Wen-Hao Liu of Cadence	March 8 and 14, 2017	National Taiwan University and National Chiao Tung University
3	Automated System-Level Co-design: Are We Finally Ready?	Prof. Deming Chen of UIUC	March 20, 2017	National Tsing Hua University
4	Columba: A Co-Layout Synthesis Tool for Microfluidic Large-	Dr. Tsun-Ming Tseng of TUM, Germany	September 18, 2017	National Chiao Tung University

	Scale Integration (mLSI) Biochips			
5	Going Back to Roots: Fundamental Physical Synthesis Optimization Research for Advanced Technology Nodes	Dr. Gi-Joon Nam of IBM T.J. Watson Research Center, NY, USA	Octobor 18, 2017	National Taiwan University
6	Logic analysis and optimization with quick identification of invariants through one time frame analysis	Prof. Masahiro Fujita of U. of Tokyo, Japan	November 30, 2017	Chung Yuan Christian University
7	Exploiting Ferroelectric FETs: Faster and Cooler Non-Volatile Logic-In-Memory	Prof. Sharon Hu, of U. of Notre Dame	December 1, 2017	National Taiwan University, National Tsing Hua University
8	Innovative Design and Analysis for Intelligent and Connected Vehicles	Dr. Chung-Wei Lin of Toyota InfoTechnology Center	December 28, 2017	National Taiwan University

iii. Symposium and Workshops

No	Event	Date	Venue
1	VLSI Design/CAD Symposium	August 1-4, 2017	Howard Beach Resort, Kenting
2	EDA Summer Camp	August 22-24, 2017	National Taiwan University
3	Workshop on Electronic Design Automation	December 2-3, 2017	Fushin Hotel, Tainan

7. <u>Chapter Name: Computational Intelligence Society Taipei Chapter (CIS11)</u>

i. Invited talk- Vincenzo Piuri (1st March, 2017)

Speaker: Vincenzo Piuri, Full Professor of the Department of Computer Science, University of Milan, Italy.

Title: *Computational intelligence technologies for industrial and environmental applications*

Venue: College of Mechanical & Electrical Engineering, National Taipei University of Technology

Attendance: IEEE member: 30, Guests: 120.

Prof. Vincenzo Piuri is a Full Professor of the Department of Computer Science, University of Milan, Italy. He is an IEEE fellow. He is serving as the EIC of IEEE IEEE Systems Journal. IEEE Computational Intelligence Society, Taipei Section Chapter (CIS 11) invited him to visit Taipei and delivered a lecture at the college of Mechanical & Electrical Engineering, National Taipei University of Technology on 1st March, 2017.

ii. Invited talk- Jun Wang (29th November, 2017)

Speaker: Chair Professor of City University of Hong Kong.
Title: Collaborative Neurodynamic Optimization: Biologically and Socially Plausible Approaches
Venue: National Chung Using University, Taichung
Attendance: IEEE member: 15, Guests: 25.

Prof. Jun Wang is a Chair Professor of City University of Hong Kong. He is IEEE Fellow and FIAR Fellow. He is serving as the EIC of IEEE Transactions on Cybernetics. IEEE Computational Intelligence Society, Taipei Section Chapter (CIS 11) invited him to visit Taichung, Taiwan and gave a talk in National Chung-Hsing University on Nov. 29, 2017. The speech title was "Collaborative Neurodynamic Optimization: Biologically and Socially Plausible Approaches."In this talk, starting with the idea and motivation of neurodynamic optimization, Prof. Wang presented historic review followed by the state of the art of neurodynamic optimization with many individual models for convex and generalized convex optimization. Nearly 40 professors and students attended the talk.

iii. Invited talk- Jun Wang (30th November, 2017)

Speaker: Chair Professor of City University of Hong Kong.
Title: Collaborative Neurodynamic Optimization: Biologically and Socially Plausible Approaches
Venue: National Chung-Cheng University, Taichung
Attendance: IEEE member: 10, Guests: 50.

Prof. Jun Wang is a Chair Professor of City University of Hong Kong. He is IEEE Fellow and FIAR Fellow. IEEE Computational Intelligence Society, Taipei Section Chapter (CIS 11) invited him to visit Chiayi, Taiwan and gave a talk in National Chung-Cheng University on Nov. 30, 2017. The speech title was "Collaborative Neurodynamic Optimization: Biologically and Socially Plausible Approaches." In this talk, starting with the idea and motivation of neurodynamic optimization, Prof. Wang presented historic review followed by the state of the art of neurodynamic optimization with many individual models for convex and generalized convex optimization. Nearly 60 professors and students attended the talk.

iv. Technically Co-sponsored iFUZZY 2017

Conference title: 2017 International Conference on Fuzzy Theory and Its Applications
Date: Nov. 12-15, 2017.
Venue: Pingtung, Taiwan
Attendance: IEEE member: 80, Guests: 30

IEEE Computational Intelligence Society, Taipei Chapter technically co-sponsored the International Conference on Fuzzy Theory and Its Applications (iFUZZY 2017) (http://isdlab.ie.ntnu.edu.tw/ifuzzy2017/). The conference was jointly organized by Taiwan Fuzzy Systems Association (TFSA) and National FORMOSA University (NFU). Five plenary speeches were delivered in the conference. The topics ranged from fuzzy theory to control problems. The distinguished lectures and their talks were as follows:

(1) Tianyou Chai, Professor of Northeastern University, Shenyang, China. Fellow of the IEEE.

(2) Witold Pedrycz, Professor and Canada Research Chair (CRC) in Computational Intelligence in the Department of Electrical and Computer Engineering, University of Alberta, Edmonton, Canada, Fellow of the IEEE.

(3) Edwin K. P. Chong, Professor of Dept. of Electrical and Computer Engineering and Dept. of Mathematics, Colorado State University, Fellow of the IEEE.

(4) Bernard De Baets, Senior full professor in applied mathematics at the Faculty of Bioscience Engineering of Ghent University, Belgium.

(5) Shigeki Sugano, Professor of Department of Mechanical Engineering at Waseda, Japan.

In addition, nearly 100 papers from different countries were presented. The conference featured the organization of an EIC forum. The EIC of Information Science, Co-EIC of Fuzzy Sets and Systems, and EIC of International Journal of Fuzzy Systems were invited to attend the forum. Most members of the IEEE Computational Intelligence Society, Taipei Chapter, attended the conference. This conference provides a very good opportunity for research scientists, investigators, industrial practitioners and government representatives to present their results and to exchange their ideas in fuzzy theory and its applications.

v. Technically Co-sponsored CACS 2017

Conference title: 2017 International Automatic Control Conference
Date: Nov. 12-15, 2017.
Venue: Pingtung, Taiwan
Attendance: IEEE member: 70, Guests: 200

IEEE Computational Intelligence Society, Taipei Chapter technically co-sponsored the 2017 International Automatic Control Conference (CACS 2017) (http://isdlab.ie.ntnu.edu.tw/cacs2017/). The conference was jointly organized by Chinese Automatic Control Society (CACS) and National Taiwan University of Science and Technology, Taipei, Taiwan. Five plenary speeches were delivered in the conference. The topics ranged from fuzzy theory to control problems. The distinguished lectures were:

(1) Tianyou Chai, Professor of Northeastern University, Shenyang, China. Fellow of the IEEE.

(2) Witold Pedrycz, Professor and Canada Research Chair (CRC) in Computational Intelligence in the Department of Electrical and Computer Engineering, University of Alberta, Edmonton, Canada, Fellow of the IEEE.

(3) Edwin K. P. Chong, Professor of Dept. of Electrical and Computer Engineering and Dept. of Mathematics, Colorado State University, Fellow of the IEEE.

(4) Bernard De Baets, Senior full professor in applied mathematics at the Faculty of Bioscience Engineering of Ghent University, Belgium.

(5) Shigeki Sugano, Professor of Department of Mechanical Engineering at Waseda, Japan.

More than 100 oral and poster papers were presented. IEEE Computational Intelligence Society, Taipei Chapter also organized a special session for this conference. Many members of the IEEE Computational Intelligence Society, Taipei Chapter, attended the conference. The conference brings together scholars in the area of computational intelligence to share their recent in the applications to control problems.

vi. Co-organized ARIS 2017

Conference title: 2017 International Conference on Advanced Robotics and Intelligent Systems
Date: Sep. 6-8, 2017.
Venue: Taipei, Taiwan
Attendance: IEEE member: 40, Guests: 120

IEEE CIS, Taipei Chapter co-organized the 2017 International Conference on Advanced Robotics and Intelligent Systems (ARIS 2017) held on 6-8 September, 2017, Taipei, Taiwan. (Website: http://aris2017.nchu.edu.tw/). The National Chung-Hsing University hosted the conference. The Chapter Chair, Prof. Chia-Feng Juang, also served as a General Chair of the conference. Four plenary speakers, Prof. Satoshi Tadokoro, Prof. C. L. Philip Chen, Prof. Li-Chen Fu, and Prof. Raja Chatila were invited. More than 70 papers were presented in the conference. The conference brings together scholars in the area of computational intelligence to share their new works in the applications to robots and intelligent systems.

vii. Technically Co-sponsored NSSSE 2017

Conference title: 2017 National Symposium on Systems Science and Engineering
Date: May 19-20, 2017.
Venue: Taipei, Taiwan
Attendance: IEEE member: 40, Guests: 60

IEEE CIS, Taipei Chapter is a Technical Sponsorship of the Nat. Symp. Systems Science and Engineering (NSSSE 2017) held on 19-20 May, 2017, Taipei, Taiwan. Website: http://isd.ie.ntnu.edu.tw/isdwebsite/nssse2017/

Nearly 80 papers were presented in the conference. The IEEE CIS, Taipei Chapter also organized a special section titled "Intelligent Systems" for the conference. Many members of the IEEE CIS, Taipei Chapter, attended the conference. The conference brings together scholars in the area of computational intelligence to share their recent work.

viii. Technically Co-sponsored PDCAT 2017

Conference title: 2017 National Symposium on Systems Science and Engineering
Date: Dec 18-20, 2017.
Venue: Taipei, Taiwan
Attendance: IEEE member: 40, Guests: 60

IEEE Computational Intelligence Society, Taipei Chapter technically co-sponsored the International Conference on Parallel and Distributed Computing, Applications and Technologies (PDCAT 2017). The conference was organized by National Taiwan University of Science and Technology, Taipei, Taiwan. Five keynote speakers, Prof. Yi Pan, Prof. Yan Yang, Prof. Tianrui Li, Prof. Muhammad Khurram Khan, and Prof. Shen Hong were invited. In addition, more than 70 papers were presented in the conference.

The conference is a major forum for scientists, engineers, and practitioners throughout the world to present the latest research, results, ideas, developments and applications in all areas of parallel and distributed computing. To speed up the implementation of computational intelligence techniques, especially the deep learning, parallel and distributed computing is demanding. The conference brings together CI scholars share their recent work in this area.

ix. Technically Co-sponsored NCFTA 2017

Conference title: 2017 National Conference on Fuzzy Theory and its Applications
Date: Nov. 12-15, 2017.
Venue: Pingtung, Taiwan
Attendance: IEEE member: 20, Guests: 40

IEEE Computational Intelligence Society, Taipei Chapter technically co-sponsored the The 25th National Conference on Fuzzy Theory and its Applications (http://isdlab.ie.ntnu.edu.tw/fuzzy2017/). The conference was jointly organized by Taiwan Fuzzy Systems Association (TFSA) and National FORMOSA University (NFU). Two speeches about fuzzy theory were delivered in the conference. The two distinguished lectures and their talks were as follows:

(1) Witold Pedrycz, Professor and Canada Research Chair (CRC) in Computational Intelligence in the Department of Electrical and Computer Engineering, University of Alberta, Edmonton, Canada, Fellow of the IEEE.

(2) Bernard De Baets, Senior full professor in applied mathematics at the Faculty of Bioscience Engineering of Ghent University, Belgium.

Thirty poster papers were presented in this conference. This conference provides a very good opportunity for researchers in Taiwan to present their results and to exchange their ideas in fuzzy theory and its applications.

8. <u>Chapter Name: Communications Society Taipei Chapter (COM19)</u>

Chapter COM19 hosted or supported the following activities during 2017.

i. 2017 National Symposium on Telecommunication from January 21 to 22, 2017

There were 246 people attending this symposium, including approximately 90 members. The symposium consists of 11 invited talks:

(1) "以大型天線陣列及小蜂巢來緻密化行動網路(Massive MIMO and Small Cells for Dense Mobile Networks)" by Prof. Yu T. Su

(2) "下世代大型無線網路的實現:基於壓縮式感測觀點的研究(Realizing Next Generation Large Scale Wireless Networks: A Compressive Sensing Perspective)" by Prof.Jwo-Yuh Wu

(3) "多通道時槽阿羅哈系統之暫態效能分析(Performance Analysis for Multi-Channel ALOHA Systems)" by Prof. Ray-Guang Cheng.

(4) "惡劣氣候下能保障系統效能之行動定位技術(Mobile Positioning under Harsh Environments)" by Prof. Shih-Hau Fang

(5) "LTE on Unlicensed Band" by Prof. Geoffrey Ye Li

(6) "小型生物定位及識別雷達系統之研發(Radar Systems for Locating and Recognizing Small Creatures)" by Prof. Sheng-Fuh Chang

(7) "The Challenges of Softwarization and Virtualization of Next-Generation Networks" by Prof. Bao-Shuh Lin

(8) "To Beyond 4G Mobile Communication and 5G" by Dr. Pand-An Ting

(9) "NB-IoT for Cellular M2M" by Dr.Chiung-Jang Chen

(10) "5G Massive MIMO design and test solution+D44" by Dr. Philip Chang

(11) "5G 及車用雷達毫米波陣列天線模組設計" by Dr. Milton Lien

ii. 2017 Spring Workshop on Information Theory and Communications from January 22 to 23, 2017

There were 165 people attending this workshop, including approximately 70 members. The workshop consists of 6 invited talks:

(1) "Wireless Challenges for 5G Mobile Broadband Communications" by Prof. Fumiyuki Adachi

(2) "Convex Optimization for Signal Processing and Communications: From Fundamentals to Applications" by Prof. Chong-Yung Chi

(3) "網路科學及其在通訊網路之應用(Network Science and its Application in Communication Networks)" by Prof.Cheng-Shang Chang

(4) "Fault Tolerance and Attack Resilience on Big Data Storage" by Prof. Yunghsiang Han

(5) "On Realizing Gains of Non-Orthogonal Multiple Access in LTE and 5G" by Prof Shin Lin Shieh

(6) "Design and Analysis of Scheduling Algorithms for Age of Information" by Prof. Yu-Pin Hsu

iii. 2017 Information Theory Society Taipei Chapter and Communications Society Taipei/Tainan Chapter Young Research Best Paper Award

The call-for-nomination was between February and April, and the winners were announced in June. The following two papers were selected as the award winners:

C. Karakus, I.-H. Wang, and S. Diggavi, "Gaussian Interference Channel With Intermittent Feedback," IEEE Transactions on Information Theory, vol. 61, no. 9, pp. 4663-4699, Sept. 2015.

C.-C. Cheng and P.-C. Hsiu, "Extend Your Journey: Considering Signal Strength and Fluctuation in Location-Based Applications," IEEE/ACM Transactions on Networking, vol. 23, no. 2, pp. 451-464, April 2015.

iv. 2017 Summer School on Information Theory, Communication Theory and Technologies from August 1 to 4, 2017

There were 147 students and 13 industrial members attending the summer school, including approximately 15 members. The summer school consists of industry panel discussion, research panel discussion and 5 tutorial courses. The courses are listed below:

(1) "Multiuser Information Theory" by Prof. Stefano Rini

(2) "User Scheduling and Beamformer Design in Massive MIMO and mmWave Massive MIMO" by Youngchul Sung

(3) "Compressed Sensing" by Prof. Jwo-Yuh Wu

(4) "Between Shannon and Hamming: Codes Against Limited Adversaries" by Prof. Sidharth Jaggi

(5) "Convex Optimization for Signal Processing and Communications: From Fundamentals to Applications" by Prof. Chong-Yung Chi

v. 2017 ITCOM Graduate Student Seminar on August 17

There were 64 people attending this seminar. The seminar consists of one panel discussion and 6 Ph.D. students' talks. The talks are listed below:

(1) "Dynamic Scheduling Policy for Multi-Pair Cooperative Device-to-Device Communication with Block-Diagonalization Precoding" by Yung-Shun Wang

(2) "Partial Overlapped Time-Shifted Pilots for Massive MIMO Systems" by Yun-Guei Hua

(3) "A Space– Time Fusion Scheme for Dynamic– Event Region Detection in Sensor Networks" by Ming-Hsun Yang

(4) "A survey on Energy Harvesting for Green Vehicular Communications" by Po-Min Hsu

(5) "Degree of Freedom of Bursty MIMO X Channel" by Shih-Yi Yeh

(6) "An Efficient Soft MIMO Detection Based on Differential Metrics" by Wang-Yueh Chang

vi. 2017 IEEE Taiwan/Hong Kong Joint Workshop on Information Theory and Communications from August 17 to 18, 2017

There were 168 people attending this workshop, including approximately 75 members. The workshop consists of 8 invited talks:

(1) "Info-Clustering: From Mathematical Theory to Practical Algorithms" by Prof. Chung Chan

(2) "Efficient Point Cloud Dissemination for Autonomous Vehicles" by Prof. Ivan Wang-Hei Ho

(3) "Designing Locally Repairable Codes According to Network Topology" by Prof. Albert Chi Wan Sung

(4) "Massive MIMO, NOMA and IDMA" by Prof. Ping Li

(5) "Protocol Sequences and their Applications" by Prof. Kenneth Wing Ki Shum

(6) "Algebraic Decoding of Cyclic Codes: A Survey" by Prof. Chong-Dao Lee

(7) "A little knowledge is truly a dangerous thing: interference pre-cancellation in the presence of partial channel knowledge" by Prof. Stefano Rini

(8) "Community Recovery from Beyond-Pairwise Relational and Statistical Information" by Prof. I-Hsiang Wang

vii. Distinguished Lecture "DoS in Vanets an issue or a fatality" given by Prof J. BEN-OTHMAN

The talks were held on November 28, 2017 at National Taiwan University and November 29 at National Tsing-Hua University. The abstract is given below:

Abstract --Wireless and mobile networks have many advantages as easy deployment, user mobility and provides network access to users regardless to their locations. The most critical problems that arise in these networks are on the resource allocations as the bandwidth is limited, the propagation (multi-path, fading, distortion) and security since communications are transmitted over radio waves. In parallel new architectures/technologies have been emerged as Vehicular Networks and Internet of Things. In this lecture, I will present issues about availability problem in those networks and architecture, I will focus on Vehicular Networks, and I will present some works we have done and other works to improve security in those systems.

9. <u>Chapter Name: Components, Packaging, and Manufacturing Technology Society Taipei Chapter (CPMT21)</u>

i. International Microsystems, Packaging, Assembly and Circuits Technology (IMPACT) 2017

Date: 10/25/2017~10/27/2017
Venue: Taipei Nangang Exhibition Hall
Attendance: 20 Members, 508 Guests
Activities: 4 plenary speeches, 56 invited speeches and 28 sessions

ii. IEEE EPS Heterogeneous Integration Roadmap / Forum

Date: 10/26/2017
Venue: Taipei Nangang Exhibition Hall
Attendance: 15 Members, 90 Guests

10. <u>Chapter Name: Control Systems Society Taipei Chapter (CS23)</u>

i. 2017 International Automatic Control Conference (CACS 2017)

The 2017 International Automatic Control Conference (CACS 2017) is an international conference hosted by the Chinese Automatic Control Society (CACS) and National Taiwan University of Science and Technology, Taiwan, and is technically sponsored by IEEE CSS Taipei Chapter. This three-day conference took place in Howard Beach Resort Kenting, Pingtung, Taiwan, over Nov. 12~15, 2017. This event provided a great opportunity for scientists, engineers, and practitioners to present the latest design concepts, research results, developments, and applications, as well as to facilitate interactions between scholars and practitioners. There are more than 125 papers presented in the conference. More than 300 industries, government and science experts, and scholars participated this great event. The invited speakers for the keynote speech are listed below:

(1) <u>Tianyuo Chai</u>, Professor of Northeastern University, Shenyang, China, Fellow of IEEE. Speech Title: CPS Driven Control System.
(2) <u>Edwin K. P. Chong</u>, Professor of Colorado State University, US, Fellow of IEEE. Speech Title: Greedy Strategies and Submodular Optimization.
(3) <u>Witold Pedrycz</u>, Professor of University of Alberta, Cansda, Fellow of IEEE. Speech Title: Association Analysis in Data Analytics: Designing Associative Memories-Architectural, Design, and Interpretation Considerations
(4) <u>Bernard De Baets</u>, Professor of Ghent University, Belgian. Speech Title: Towards a new theory of aggregation.
(5) <u>Shigeki Sugano</u>, Professor of Waseda Univeristy, Japan, Fellow of IEEE. Speech Title: Intelligent Human-Symbiotic Robot as a Cyber-Physical-System in Society5.0.
(6) <u>Zongli Lin</u>, Professor of University of Virginia, US, Fellow of IEEE. Speech Title: A Low Gain Feedback Approach to Dealing with Actuator Saturation and Input Delays.

ii. 2017 International Conference on Fuzzy Theory and Its Applications (iFUZZY 2017)

International Conference iFUZZY 2017 was also held in Howard Beach Resort Kenting, Pingtung, Taiwan, over Nov. 12~15, 2017, which was jointly organized by Taiwan Fuzzy Systems Association (TFSA) and National Formosa University, Yunlin, Taiwan. This conference is also technically sponsored by IEEE CSS Taipei Chapter. iFUZZY 2017 is soliciting novel research results on fuzzy theory and its applications on related topics. This conference provides a very good opportunity for research scientists, investigators, industrial practitioners and government representatives to present their results and to exchange their ideas. There are more than 120 papers presented in the conference. More than 200 industry, government and science experts, and scholars participated this great event. The conference shares the same keynote speeches with the CACS 2017.

11. <u>Chapter Name: Education Society Taipei Chapter (E25)</u>

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:

(1) 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.

(2) 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.

12. <u>Chapter Name: Electron Devices Society Taipei Chapter (ED15)</u>

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. March 28, 2017 (co-organized with the EDS NCTU Student Chapter)

High Performance Selector and 3D Integration for Resistance RAM

Attendance: Members 20, Guests 10

Activities: DL talk

ii. April 24-27, 2017(Technical-co-sponsor)

International Symposium on VLSI-TSA
Attendance: Members 150, Guests 350
Activities: 6 keynote talks, 59 contributed paper presentations, 2 short courses

iii. May 3, 2017 (co-organized with the EDS NCTU Student Chapter)

Investigation of Frequency Behavior and Modeling of Gate-Leakage in Advanced FDSOI CMOS Technology (IIT, Mandar Bhoir)
Attendance: Members 15, Guests 5
Activities: invited talk

iv. September 6, 2017

Invited talks: (1) What Makes Silicon Valley and Stanford University Tick? (speaker: Prof. Krishna Saraswat/Stanford University); (2) III-V/Ge-based Tunneling FET technology (speaker: Prof. Shinichi Takagi/University of Tokyo)
Attendance: Members 20, Guests 30
Activities: Invited talk

v. October 13, 2017 (co-organized with the EDS NCTU Student Chapter)

Introduction to Non-volatile Electronic System Based SOT Engineering (speaker: Prof. G. C. Liang, NUS)
Attendance: Members 30, Guests 90
Activities: invited talk

vi. October 18-20, 2017 (Technical co-sponsorship)

IEEE EDSSC (International Conference on Electron Devices and Solid-State Circuits)
Activities: International conference with invited talks

vii. October 19, 2017(co-organized with the EDS NCTU Student Chapter)

(1) Beyond Weibull and Poisson Statistical Models: Time-dependent clustering model for dielectric breakdown and RRAM Applications (speaker: Ernest Wu, IBM), (2) Filamentary Analog RRAM for Neuromorphic Computing (speaker: Bin Gao, Tsinghua University).
Attendance: Members 10, Guests 20
Activities: invited talk

13. <u>Chapter Name: Engineering in Medicine and Biology Society Taipei Chapter (EMB18)</u>

i. MEG/MRI Workshop 2017

MEG/MRI Workshop was held in National Taiwan University on Mar 25th. There were 117 participants joining the two-day training course. The program provided courses about MEG/MRI data collection and data analysis. An fMRI analysis of the graphic thinking and creativity in landscape design was also included.

ii. Biomedical Electronics and Bioinformatics Camp, 2017

The 2017 National Taiwan University Biomedical Electronics and Bioinformatics Camp was held from Jul 6th to Jul 8th 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, "The Future Development Trend of Taiwan's Medical Industry". We invited nine speakers with academic or industry background to discuss about this topic from different aspects such as biology, software, hardware, etc.

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 76 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.

Next year, we will foster new talent from academics and the industry and continue to hold the Biomedical Electronics and Bioinformatics Camp.

iii. fMRI Educational Training II 2017

Functional MRI Educational Training II 2017, which was sponsored by the Ministry of Science and Technology, organized by the Department of Electrical Engineering, Department of Psychology and Neurobiology and Cognitive Science Center of National Taiwan University was held from Jul 19th to Jul 20th, 2017. There were 52 participants joining the two-day event. The event aimed at promoting fMRI techniques to Humanities researchers, engineers, and psychologists, and educating students the interdisciplinary Science and Social Science.

iv. MEG Educational Training II 2017

2017 MEG Educational Training II, organized by the Ministry of Science and Technology and National Taiwan University, was held in National Taiwan University from July 26th to July 27th. There were 49 participants joined in the two-day training course. The course aimed at providing in-depth courses in experimental design, data collection, data analysis, and result interpretation to researchers interested in using

magnetoencephalography (MEG) to study brain function and its correlation with social sciences.

v. Artificial Intelligence Workshop 2017

2017 Artificial Intelligence Workshop has been held in Nov 4th in National Taiwan University, and organized by Ministry of Science and Technology and National Taiwan University, Taiwan. There were 210 participants joined in this course. We invited sixteen speakers from academic backgrounds to discuss this topic from different aspects such as Psychology, Sociology, Computer Science and Information Engineering, and so on. The workshop focus on the application of artificial intelligence in the development of human intelligence and related industries.

vi. PET/MRI Conference 2017

2017 PET/MRI Conference has been held in Dec 21th in NTU Barry Lam Hall, and organized by National Taiwan University Molecular Imaging Center and National Taiwan University, Taiwan. There were 65 participants joined in this course. The event aimed at promoting PET/MRI techniques to Humanities researchers, engineers, and psychologists, and educating students the current status and future perspectives.

14. <u>Chapter Name: Electromagnetic Compatibility Society Taipei Chapter (EMC27)</u>

In 2017, Taipei EMC Chapter (EMC27) held and sponsored four technical activities as follows:

i. The 8th 2017 Electromagnetic Workshop – A Bridge to the Future

Date: Jan. 16-18, 2017
Attendance: 150
The Electromagnetic Workshop – A Bridge to the Future, provides the platform to exchange the recent advance and future trends in electromagnetic development between academia and industry.
The workshop was initiated since 2012. The 8th 2017 electromagnetic workshop – a bridge to the future, was hosted by Prof. Ding-Bing Lin, National Taiwan University of Science and Technology, and held in BOUTIX Resort Hotel Yehliu, New Taipei City, from Jan. 16 to 18, 2017.
It was co-sponsored and co-organized by IEEE EMC Taipei Chapter, Taiwan Microwave Association, Taiwan Electromagnetic Industry-Academic Consortium, and in cooperation with Educational Ally of RF Circuit Design in Mobile Communication supported by the Ministry of Education.
The workshop has invited several key experts and professors in the area of electromagnetic field. The speakers shared experience and knowledge about their researches which provided a deeper understanding on recent developments and the future of electromagnetic field to the attendees. Student attendees had the opportunity to learn the industrial aspects of technologies in need for industrial applications.

These will help students to develop better skills and abilities, and we wish them to make ground-breaking contributions to the electromagnetic field in their coming career.

Prof. Tzong-Lin Wu, Chairman of Graduate Institute of Communication Engineering, National Taiwan University, gives the talk entitled as “A Story From Academic Research To Industrial Application.”

Prof. T.-S.Jason Horng, Department of Electrical Engineering, National Sun Yet-sen University, gives the talk entitled as “Reflections on the Significance and Value of Electromagnetic Research from the Experience of Skill Transfer to International Country.”

Lawyer Sheng-Yo Tian, King Stone Attorneys-At-Law, gives the talk entitled as “Patent Licensing- A leafless boat of Asian orphans.”

PhD. Rui Guoli from WHA YU Industrial Co., Ltd., gives the talk entitled as “Technology Development on Large Base Station Antenna in Taiwan.”

Prof. Hsin-Piao Lin, Department of Electronic Engineering, Natinal Taipei University of Technology, gives the talk entitled as “Application of wireless communication technology in aerospace industry.”

In addition, younger researchers give the talks for exchanging information on (1) A 55-dB SFDR 16-GS/s Track-and-Hold Amplifier in 0.18 mm SiGe Using Differential Feedthrough Cancellation Technique; (2) Design of 3-D Transmit Array for Ku Band Application; (3) Analysis of Three-Dimensional Microwave Holographic Imaging with Probe Compensation; (4) Wireless Energy Haversting, and so on.

It is worth to mention that more than 150 participants attended this workshop, which indicates a growing interest in this exchange platform between academia and industry – a bridge to the future.

ii. Next Generation Smart Life with Bio-electromagnetics and Advanced Telecommunication Technology

Date: July 6, 2017

Attendance: 300

On July 6, 2017, the IEEE EMC-Society Taipei Chapter, in corporation with Auden Techno. Corp., organized a full-day workshop on “Next Generation Smart Life with Bio-electromagnetics and Advanced Telecommunication Technology,” held at Evergreen International Convention Center of Chang Yung-Fa Charity Foundation. This is the second consecutive year that both organizations to host this event together. The workshop widely covers the topics of fifth-generation (5G) wireless technology, internet of things (IoT), and bio-electromagnetics. The total number of attendees is over 300. Their enthusiasm and support have made workshop a great success.

The morning sessions with keynote speeches covering several main themes of IoT and 5G millimeter-wave technology. The keynote speech of Professor Ruey-Beei Wu, National Taiwan University, is focus on the education programs for cultivating the young talents aiming IoT and cloud solutions. The keynote speech of Professor Niels

Kuster, IT IS Foundation, gets participants' attentions on the topic of a novel electromagnetic system for demonstration and compliance of 5G millimeter-wave sources. Professor Jyh-Yih Hsu, National Chung-Hsing University, talks the topic of exploring business models in the development of IoT and big data analytics. Professor Kin-Lu Wong, National Sun Yat-sen University, presents the design and testing results of various MIMO antennas for mobile devices.

There are three parallel tracks and total 18 discussed topics in the afternoon sessions. In the 5G Communication Track, Professor Cheng-Nan Chiu, Yuan Ze University, is the moderator to introduce speakers to give speech covering topics of 5G technology roadmaps, measurement methods, antenna applications from LTE-M to NB IoT. In the Biomedical Application and Electromagnetic Track, the moderator JianJang Huang, professor of Yuan Ze University, invites speakers to address topics of application and safety test of electrical stimulator, aesthetic medicine and phased array dipole antenna for cancer treatment, and simulation platform and validated hardware solutions for active implant MRI safety assessment. The IoT and Application Track, hosted by Professor Ding-Bing Lin, invites speakers to talk about the topics includeing IoT in mass transportation systems, thread in IoT development, big data analytics and platform. The participants have the chance to get to know the trends of IoT and digitalization development of different industries.

iii. 2017 EM Education Initiative: Summer Program

Date: Aug 21-25, 2017

Attendance: 100

2017 EM Education Initiative: Summer Program was successfully held at Yuan Ze University, Taoyuan City, from Aug. 21 to 25. This program was organized and sponsored by IEEE EMC Taipei Chapter, Chinese Microwave Association, Taiwan Electromagnetic Industry-Academia Consortium, and the Department of Communications Engineering of Yuan Ze University. In this 5-day program, ten introductory courses to the EM-wave profession were provided for more than one hundred graduated students from 19 universities in Taiwan. These courses teach the students the history of electromagnetics, the fundamental concepts of EM-wave engineering, the trend of the EM-wave technology, and the new and attractive EM-wave applications. At the end of the program, most participants felt very satisfied with these courses who had learned.

iv. Practical Application of Massive MIMO Antennas

Date: Oct 2, 2017

Attendance: 210

The workshop in the area of array antennas, co-hosted by Prof. Hsi-Tseng Chou, National Taiwan University and Prof. Ding-Bing Lin, National Taiwan University of Science and Technology, was held in Barry Lam Hall room 101 on Monday, October

2. The objective was to deliver the knowledge about recent advance and future trends in array antennas to industries and students.

It was co-sponsored and co-organized by Taiwan Electromagnetic Industry-Academic Consortium and Educational Ally of RF Circuit Design in Mobile Communication supported by the Ministry of Education, in cooperation with High-Speed RF and mm-wave Technology Center, National Taiwan University, Graduate Institution of Communication Engineering, National Taiwan University, Oriental Institute of Technology Department of Communication Engineering, IEEE EMC Taipei Chapter, Institute for Information Industry, Industrial Technology Research Institute.

Many applications require radiation characteristics that may not be achievable by a single element. However, it may be possible that an aggregation of radiating elements in an electrical and geometrical arrangement (an array) will result in the desired radiation characteristics. Array antenna was first utilized in military field, such as Radar. Nowadays, it has been applied in various areas of communications including MIMO (Multiple Input Multiple Output), Massive MIMO, and so on. With the development in technologies like fifth-generation mobile network, internet of Thing (IoT) etc., the design considerations for the antennas become more diverse and complicated. Larger bandwidth, beam shaping, short range device to device communications, operation in wider range of frequencies etc. are some of the key requirements, and array antennas are expected to play an important role in achieving these requirements.

The workshop has invited several key experts and professors in the field including CEO Yao-Ming Tsai from Training Research Co., LTD, TRC, Prof. Paolo Nepa from University of Pisa, Pisa, Italy, Prof. Yu-Jiu Wang from National Chiao Tung University, PhD. Rui Guoli from WHA YU Industrial Co., Ltd., engineer Jian-Chia Chen from National Instruments. The speakers shared experience and knowledge about their researches which provided a deeper understanding on recent developments and the future of array antenna to the attendees. Student attendees had the opportunity to learn the industrial aspects of technologies in need for industrial applications. These will help students to develop better skills and abilities, and we wish them to make ground-breaking contributions to the field of array antennas in their coming career.

Last but not least, we also provided an hour of forum for exchanging information on the progress of antennas, propagation, electromagnetic theory, and related fields. The mutual interaction among the participants was also one of the important objectives. The forum was chaired by Professor Hsi-Tseng Chou. Attendees used this hour to ask questions to the professors and experts on the stage. In addition to the speakers mentioned earlier, we also invited Prof. Tzong-Lin Wu, Chairman of Graduate Institute of Communication Engineering, National Taiwan University to take part in this forum. In spite of just an hour, everyone participated in the discussion

enthusiastically. It is worth to mention that more than 210 participants attended this workshop, which indicates a growing interest in the field of array antennas.

15. <u>Chapter Name: Geoscience and Remote Sensing Society Taipei Chapter (GRS29)</u>

A. Technical Actives:

i. Distinguished Lecturer Program: IEEE GRSS DLP Talks with IEEE.tv live streams/TV broadcast of the First IEEE GRSS Webinar Series in the history of GRSS.

Date: October June 14-15, 2017

Speaker: Prof. Akira Hirose, The University of Tokyo Graduate School of Engineering Department of Electrical Engineering and Information Systems Advanced Neural Adaptive Processing in Interferometric and Polarimetric Radar Imaging, https://ieeetv.ieee.org/live_event/grss-live

Location: National Taipei University of Technology on June 14, 2:00 pm 2017
National Taiwan Ocean University on June 15, 10:00am 2017
National Tsing Hua University on June 15, 2:00 pm 2017

ii. 2017 IEEE GRSS Taipei Chapter Best Thesis Award Ceremony

Date: Dec, 29, 2017

Location: National Taipei University of Technology

B. Technical Seminars:

i. Seminar: Self-diagnosing Intelligent Surveillance Systems

Date: October 18th, 2017

Speaker: Prof. Hsu-Yung Cheng, Department of Computer Science and Information Engineering, National Central University

Location: National Taipei University of Technology

ii. Seminar: Neural Network Image Processing

Date: November 29th, 2017

Speaker: Dr. Charles Hsu, Trident Systems, VA, USA

Location: National Taipei University of Technology

iii. Seminar: Computer Graphics

Date: December 27th, 2017

Speaker: Prof. Pei-Ying Chiang, Department of Computer Science and Information Engineering, National Taipei University of Technology

Location: National Taipei University of Technology

C. Professional Development (career advising, mentoring):

i. Seminar: Career Enlightenment and Workplace Advising

Date: March 29th, 2017

Speaker: Dr. Chung-Ming Young, Taiwan Semiconductor Manufacturing Company

Location: National Taipei University of Technology

ii. Seminar: Industrial Property and Copyright

Date: March 15th, 2017
Speaker: Prof. Yachi Chiang, Graduate Institute of Intellectual Property of NTUT
Location: National Taipei University of Technology

iii. Seminar: Future of the Medical Engineering Industry

Date: April. 12th, 2017
Speaker: MD. Lin-Chih Huang, Koo Foundation Sun Yat-Sen Cancer Center
Location: National Taipei University of Technology

iv. Seminar: Introduction to Financial Technology Fintech Block Chains

Date: September 27th, 2017
Speaker: Mr. Xuan Hao Chang, Department of Electrical Engineering, Purdue University
Location: National Taipei University of Technology

16. <u>Chapter Name: Instrumentation and Measurement Society Taipei Chapter (IM09)</u>

One of the merits granted to the chapter members is free or discounted admission to the chapter activities, which are listed below in chronological order.

i. IEEE IMS Workshop – *From Measurement to Decision Making*

Time: 06/21/2017; 10:00 a.m.-5:00 p.m.
City: Hsinchu
Country: Taiwan
Meeting Keywords: Instrumentation and measurement, industry
Guest Attendance: 50-60
IEEE Member Attendance: 20
Invite Students: Yes
IEEE IMS Workshop was held on June 21, 2017. The IEEE IMS Taipei Section Chapter vice chair gave a keynote opening speech and provided technical assistance in coordinating the workshop. Four outstanding experts in the field were invited to the workshop, including Dr. Salvatore La Malfa, Application Software Manager from STMicroelectronics, Italy, Mr. Yu-Chieh Wu, Deputy General Manager from Yinsh Precision Industrial Corporation, Taiwan, Prof. Salvatore Baglio from University of Catania, Italy / VP Education of IEEE IMS, and Mr. Tension Wu, Chief Technology Officer from Aerospace Industrial Development Corporation, Taiwan.
Speakers:

- Dr. Salvatore La Malfa (Application Software Manager , STMicroelectronics, Italy)
  Measurements and Metrology in the consumer industry

- **Mr. Yu-Chieh Wu** (Deputy General Manager, Yinsh Precision Industrial Corporation, Taiwan R.O.C.)
  盈錫轉型升級及導入智慧製造經驗分享
- **Prof. Salvatore Baglio** (VP Education of IEEE IMS / University of)
  To Measure is to Know
- **Mr. Tension Wu** (Chief Technology Officer, Aerospace Industrial Development Corporation, Taiwan R.O.C.)
  從量測到決策－航太智慧化製造、智慧化管理

ii. IEEE IMS Taipei Section Chapter Annual Meeting

Time: 06/21/2017
City: Hsinchu
Country: Taiwan
Meeting Keywords: Instrumentation and measurement, member activity
Guest Attendance: 30-40
IEEE Member Attendance: 30-40

iii. IEEE IMS Technical Lecture Given by Prof. Zheng Liu from University of British Columbia Okanagan, Canada – *The Future of Industrial Inspection: Evolution with Digital Transformation*

Time: 08/02/2017; 10:30 a.m.-12:00 p.m.
City: Hsinchu
Country: Taiwan
Meeting Keywords: Instrumentation and measurement, digital
Guest Attendance: 40-50
IEEE Member Attendance: 15
Invite Students: Yes
Event Description: The technical seminar of "The Future of Industrial Inspection: Evolution with Digital Transformation" was delivered by Professor Zheng Liu from University of British Columbia Okanagan on August 2, 2017. Professor Liu is serving as the vice president (publication) of the IEEE Instrumentation and Measurement Society. He is on the editorial boards of IEEE Transactions on Instrumentation and Measurement, Information Fusion, Machine Vision and Applications, and Intelligent Industrial Systems. Dr. Liu also holds a professional engineer (P.Eng.) license of Ontario and British Columbia in Canada.

iv. Chapter Feature Activity: The 9th *i*-ONE International Instrument Technology Innovation Competition

Time: 10/01/2017; 09:00 a.m.-19:00 p.m.
City: Hsinchu
Country: Taiwan

Guest Attendance: 90-100

IEEE Member Attendance: 30

Invite Students: Yes

Meeting Keywords: students, innovation competition

Event Description: The 9th i-ONE International Instrument Technology Innovation Competition was a student innovation competition jointly held by the IMS TPE Chapter, Instrument Technology Research Center, and ASME Taiwan Section from August through October in 2017. It attracts nearly 90 students from Taiwan and other Asian countries to attend. 14 proposals from two groups (youth and amateur) were selected to the final competition and presented their ideas on October 1, 2017. The awards and the prizes (NTD $350,000 in total) were presented at the award ceremony right after the competition.

17. <u>Chapter Name: Information Theory Society Taipei Chapter (IT12)</u>

The major activities of the IEEE Information Theory Society Taipei Chapter in 2017 are as follows.

i. 2017 Spring Information Theory and Communications Workshop was held in conjunction with The 2017 National Telecommunication Symposium at Sun-Moon Lake, from Jan. 22 to Jan. 23. (http://2017nst-itcomm.nctu.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.

ii. The 2017 IEEE Taiwan/Hong Kong Joint Workshop on Information Theory and Communications was held at National Penghu University of Science and Technology, Penghu, Taiwan, from Aug. 17 to Aug. 18. (http://itcom2017f.npu.edu.tw/). The workshop is to promote information exchange between the researchers in Hong Kong and Taiwan in the fields of information theory and communications. The workshop is co-sponsored by IEEE ITSoc Taipei, Tainan, and Hong Kong Chapters, IEEE ComSoc, Taipei, Tainan, and Hong Kong Chapters, and Ministry of Science and Technology. The workshop program includes 8 invited talks, 2 poster sessions, and an IEEE communication and information theory society member meeting.

iii. The 2017 IT & COM Graduate Student Seminar was held together with The 2017 IEEE Taiwan/Hong Kong Joint Workshop on Information Theory and Communications Penghu, on Aug. 17 (http://itcom2017f.npu.edu.tw/agenda.html). The goal of this event is to let senior and junior PhD students from different schools in Taiwan get together to get to know each other, share research ideas, and get career consultation. In the first half of the seminar, six students from National Taiwan University, National Chiao Tung University, National Cheng Kung University, and

National Tsing Hua University presented their research proposal or initial results. In the second half of the seminar, we had a panel discussion about research, graduation, career planning, and job hunting. One of the main purposes of this seminar is to encourage master student to apply PhD program, and at the same time increase the member base of IEEE Information Society and Communication Society.

iv. 2017 IEEE Information Theory Workshop was held in Kaohsiung, Taiwan, from Nov. 6 to Nov. 10 (http://www.itw2017.org/). This is a important annual conference event of IEEE IT Society. This year, the social program included the welcome reception on Nov. 5, a free tour for workshop participants arranged on the afternoon of Nov. 7, the conference banquet dinner held on Nov. 8. Four plenary talks are offered: "Caching - Strategies, Models, Bounds", by Michael C. Gastpar, "Information-theoretic Perspectives on Stability-responsiveness Trade-offs in Biological Systems," by Ilya Shmulevich, "Trading communication resources in quantum Shannon theory" by Mark Wilde, and "A Novel Coding Scheme for Encoding and Iterative Soft-Decision Decoding of Binary BCH Codes of Prime Lengths" by Shu Lin. The technical program included a totoal number of 26 parallel sessions for regular submissions and invited papers, added with a recent result poster session.

18. <u>Chapter Name: Magnetics Society Taipei Chapter (MAG33)</u>

i. Distinguished Lecturers 2017:

Professor Xiaofeng Jin
Topic: The Hall Effects Edwin Hall Never Imagined
Time: 06/26

Professor Eiji Saitoh
Topic: How to create and use spin current?
Time: 06/28

ii. Other Speakers:

Professor Takao Suzuki
Topic: Internet-of-Things-A Recent Development in Soft- and Hard-Magnetic Materials-
Time: 06/26

Professor Koki Takanashi
Topic: Advanced spintronic materials based on ordered alloys
Time: 06/28

Professor Ming Zhong Wu
Topic: Spin-Orbit Torque Assisted Switching in Magnetic Insulators

Time: 06/27

iii. Other Activities:

2017 Taiwan Association Magnetic Technology Annual Meeting and summer school for magnetism

Time: 6/26-28

We invite 2 DL and following speakers:

(1) Prof. Koki Takanashi (Institute for Materials Research (IMR), Tohoku University)

(2) Prof. Takao Suzuki (College of Optical Sciences, University of Arizona in Tucson, AZ)

2017 International Union of Materials Research Societies- International Conference in Asia (IUMRS-ICA 2017): Symposium D4. Advanced Magnetic Materials

Time: 11/05-09

We invite 1 DL and following speakers:

(1) Prof. Koki Takanashi (Tohoku University, Japan)

(2) Prof. Kazuya Ando (Keio University, Japan)

(3) Prof. Shang-Fan Lee (Academia Sinica, Taiwan)

(4) Prof. Jung-Chun Huang (National Cheng Kung University, Taiwan)

(5) Dr. Philip W. T. Pong (The University of Hong Kong, China)

(6) Dr. Tetsuya Nakamura (Japan Synchrotron Radiation Research Institute, Japan)

19. <u>Chapter Name: Microwave Theory and Techniques Society Taipei Chapter (MTT17)</u>

	Title of Presentation/Name of Speaker	Attendance		
		MTT-S	Other	Total
1	Energy Efficient Future Wireless Communications / Nuno Borges Carvalho	5	80	85
2	Current Research and Development of Wireless Power Transfer via Radio Waves and the Application / Naoki Shinohara	4	36	40
3	New Architecture Design for Millimeter Wave Base Station Antenna Systems, Channel Characteristics for Millimeter Wave, and Some Factors to Be Considered for 5G Antennas / Hsueh-Jyh Li	5	75	80
4	CMOS Amplifier Design for Millimeter-wave and Beyond / Chun-Lin Ko	2	48	50
5	Controlling Magnetism from the Milli- to Nano-scale / Rob N. Candler	6	80	86
6	Multi-lane Free Flow ETC IC and System Development and Manufacture / Wen-Jun Lan	4	80	84
7	Design and Challenge of RF SoC / Wen-Jou Wu	5	77	82
8	Introduction to Remote Radio Head (RRH) and Small Cell / Jia-Rong Chang	3	80	83

9	Reconfigurable RF PA in 5G with RF-SOI / Yang Li	4	80	84
10	Create a New Leap Forward in Taiwan's Electronic Science and Technology ─ Turn Defense Technology into Consumer Technology / Dr. Gu, Jin-An	6	60	86
11	A G-band SPST switch with 2.4-dB insertion loss and minimum 28.5-dB isolation using grounded co-planar waveguide folded coupled line topology in 65-nm CMOS technology / Yunshan Wang	2	80	82
12	A compact and low dc power distributed amplifier with cascaded gain stages using signal-reused technique in 0.18-μm CMOS / Chen-Wei Wu	3	77	80
13	A 36-40 GHz full 360˚ultra-low phase error passive phase shifter with a novel phase compensation technique / Cheng-Yu Chen	2	77	79
14	A Q-band amplifier with low noise figure and medium power capability for ALMA band-1 receiver / Shou-Shian Chang	4	76	80
15	A 38-GHz up-conversion sub-harmonic mixer with buffer amplifier in 65-nm CMOS process / Hung-Hao Lin	4	80	84
16	A D-band wide tuning range VCO using switching transformer / Yu-Teng Chang	3	78	81

20. <u>Chapter Name: Power Electronics Society Taipei Chapter (PEL35)</u>

i. IAS/IES/PELS Taipei Chapters Joint Symposium

Date: 2017/03/2

Venue: 201 Barry Lam Hall, National Taiwan University

Attendance: 100+

Activity:

The Symposium is organized and sponsored by Prof. Ching-Jan Chen, National Taiwan University. Prof. Chen served as the chair of the Symposium. One invited speaker, Prof. Kan Akatsu, with the Shibaura Institute of Technology (SIT), Japan, gave a talk with the topic: High Power Long Distance Wireless Power Transfer System for Dynamic EV Charging. Six PhD students give presentations about their research work. 15 students from SIT, Japan. Five Professors and more than 90 students from NTU, NTUST, and NTHU, attend the symposium. A gathering dinner is held at campus restaurant after the symposium providing the great chance for students from different Universities and Countries to communicate with each other.

ii. International Distinguished Lecture

Title: Loss measurement and Characterization of Power Capacitors

Speaker: Prof. Toshihisa Shimizu, Tokyo Metropolitan University, Japan, IEEE Fellow

Date: 2017/03/08

Venue: R142, EE II Building, National Taiwan University

Attendance: 35+

Activity: There are more than 35 participants, including 5 professors, attend the international distinguished lecture, held in National Taiwan University on March 8, 2017. This talk presents the loss measurement and characterization of power capacitors. In order to increase the power density of the power converters, volume and loss reduction, and extension of the lifetime of the passive components used in the power converters are essential. In this talk, a novel loss measurement method considering the practical current and voltage condition is explained. Loss characteristics of typical capacitors, such as electrolytic, ceramic, and film capacitors, are discussed. And finally, an accurate loss calculation method of the capacitors on the arbitral current waveform condition is proposed.

iii. International Distinguished Lecture

Title: Expansion of DC Power from ICT to Smart Solutions
Speaker: Dr. Keiichi Hirose, NTT, Japan, Senior Manager
Date: 2017/05/31
Venue: R102, EE II Building, National Taiwan University
Attendance: 20+
Activity: PELC35 Chapter Chair, Prof. Yaow-Ming Chen, pick up Dr. Hirose at Son-Shan Airport, Taipei at 15:40 May 31st and escort him to check in the Hotel by Taxi. After a short break at the Hotel, they go to the NTU campus by taxi. Before the talk, Prof. Chen accompany Dr. Hirose to take a walk at the campus. The talk start at 17:30 at R102, EE building II. Two EE faculties, one Professor from NTUST and about 20 graduate students attend this talk. Dr. Hirose introduce his company, Nippon Telegram and Telephone Facility, first. Then he give a presentation about the DC grid for various application. Although high-reliability DC power is the fundamental in ICT field, the increase in electrification rates now sees DC power in distributed power grids, electric vehicles and various other powering infrastructure. Dr. Hirose talked about the growing development and commercialization of 380 V DC powering infrastructure across a board range of application areas, as well as active international standards activities. Many questions regarding the DC bus system are asked. The reason why choosing 380V for DC bus voltage is based on many reasons and it has become the standards. Dr. Hirose also express his willing to help to provide an international internship for NTU students.

iv. International Future Energy Electronics Workshop

Time: 2017/06/05 14:00-17:00
Venue: 6011, Engineering Building, National Sun Yat-sen University
Attendance: 40+
Activity: The International Future Energy Electronics Workshop is co-sponsored by the organizing committee of IFEEC 2017- ECCE Asia and PELC35 Chapter. It is organized by PELC35 Chapter Chair, Prof. Yaow-Ming Chen, with the help from colleagues in National Sun Yat-Sen University (NSYU). The workshop is divided

into two parts and each part has two speakers. Four topics related to the future energy electronics are presented by four distinguished Professors from USA, Germany, and Switzerland. Topics in this workshop are related to power devices, power electronics technologies, solar energy for micro-grid, and wireless power transferring. About 40 graduate students and 10 faculties attend this workshop. Prof. Yaow-Ming Chen gave a brief opening remark then introduce the first speaker, Prof. Johan Kolar, to the audience. Prof. Cheng-Tsung Liu with NSYU introduce the second speaker, Prof. Rik W. De Doncker. Both speakers give their talks and take some questions. During the break, cakes, soft drinks, cookies are served. All speakers meet and chat with the attendees. Prof. Huang-Jen Chiu host the second part of the workshop while Prof. Liu shows the lab and campus for the first two speakers. The second part of the workshop carry out very smoothly. And many questions are raised by the students. Prof. Johan Kolar talk about how the newly developed GaN- or SiC-based power devices can help to reduce the size and weight of the power converter. In Prof. Rik W. De Doncker' talk, he explains why the Power Electronics is the key to reduce the CO2 greenhouse gas emission, especially focus on the medium voltage power grid. Prof. Jason Lai show the technology how to integrate the renewable energy into the micro-grids, which is the future trend of the power system. Prof. Chris Mi is an expert in the field of wireless power transferring and his talk focus on the EV and mobile applications. The workshop end as scheduled.

v. IEEE International Future Energy Electronics Conference 2017- ECCE Asia

Time: 2017/06/03-07

Venue: Kaohsiung Exhibition Center, Kaohsiung, Taiwan

Attendance: 620

Activity: The IEEE International Future Energy Electronics Conference (IFEEC) is the bi-annual international conference in the field of Power Electronics organized by the Taiwan Power Electronics Association (TaiPEA). This year is the 3rd time and it becomes the co-conference with ECCE-Asia. The PELS Taipei Chapter is also a co-sponsor of this year's event.

The Chair of PELS Taipei Chapter, Prof. Yaow-Ming Chen, served as the Program Chair of this conference. There are 640 papers from 29 countries submitted to IFEEC 2017-ECCE Asia while 406 papers, 223 oral and 183 poster, are accepted. The acceptance rate is 63.4%. The registered attendance is 620. During the 5 day conference, five tutorials are given by Prof. Johann W. Kolar, Prof. Adrian Ioinovici, Prof. Chris Mi, Prof. Yongheng Yang, and Prof. Mario Pacas. In the opening ceremony, President of TaiPEA Prof. Yen-Shin Lai, President of PELS Prof. Alan Mantooth, and the Steering Committee Chair Prof. Jason Lai give welcome speeches. Six keynote speakers are invited to present their latest research outcomes. They are: Mr. Yancey Hai, Chairman of Delta Electronics, Prof. Rik W. De Doncker, RWTH Aachen University, Prof. Dushan Boroyevich, Virginia Tech, Prof. Alan Mantooth, University of Arkansas, Prof. Toshihisa Shimizu, Tokyo Metropolitan University,

and Prof. Seung-Ki Sul, Seoul National University. The technical program consists of six technical trusts including: Power Electronics Technologies, Lighting Technologies and Application, Devices and Components, Renewable Energy Research and Application, Motor Drives, and Smart-Grid Technologies. The IEEE IFEEC is the most important PE related international conference organized by our colleagues in Taiwan. The PELS Taipei Chapter will continue to fully support this international conference in the future.

21. <u>Chapter Name: Photonics Society Taipei Chapter (PHO36)</u>

Chapter PHO36 had submitted two L31 meeting reports in this year (i.e., meetings during 2017 Taiwan Vacuum Conference during Oct. 27, 2017and OPTIC 2017)

i. 2017 IEEE International Symposium on Next Generation Electronics (ISNE) during May 4-6, 2015 (technical sponsor; more than 20 IPS members attended)

ii. Jan. 10, 2017 VCSELs Technology and Application Seminar

iii. June 16, 2017, VECSELTechnology and Marketing Trend Analysis

iv. Taipei Nangang Exhibition Center; OPTO Taiwan 2017

v. Taipei Nangang Exhibition Center; Touch Taiwan 2017.

vi. 2017 Taiwan Vacuum Conference during Oct. 27, 2017 (technical sponsor and more than 20 IPS members attended)

vii. 2017 Optics and Photonics Taiwan during Dec. 7-9, 2017 (technical sponsor and more than 50 IPS members attended)

22. <u>Chapter Name: Product Safety Engineering Society Taipei Chapter (PSE43)</u>

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.

i. 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. <u>Chapter Name: Robotics and Automation Society Taipei Chapter (RA24)</u>

i. 08/15/2017

The Technical Lecture

Title: Connected Manufacture and Automation Meetup

In this meetup, IVI activities, business models, Japan status of industry 4.0 and collaboration between Taiwan and Japan were presented and discussed. The presentations by Taiwan leading manufacture and automation companies were delivered.

Speaker: Prof. Jwu-Sheng Hu

Attendance: IEEE Member Attendance 24, Guest Attendance 11

ii. 10/24/2017

The Technical Lecture

Keynote speech at Taiwan Automotive International Forum (TAIFE) 2017

Title: Machine Perception for Autonomous and Connected Vehicles

Speaker: Prof. Chieh-Chih Wang

Attendance: IEEE Member Attendance 35, Guest Attendance 63

iii. 12/15/2017

The Technical Lecture

Title: Self-Driving Cars

Speaker: Prof. Chieh-Chih Wang

Attendance: IEEE Member Attendance 14, Guest Attendance 61

iv. 12/15/2017

The Technical Lecture

Title: Team Collaboration and Project Management for Building Self-Driving Cars and AI Products

Speaker: Prof. Chieh-Chih Wang

Attendance: IEEE Member Attendance 34, Guest Attendance 25

24. <u>Chapter Name: Reliability Society Taipei Chapter (RL07)</u>

Our Chapter received the first place in the 2017 Reliability Society Chapter Award. We organized 2017 IEEE Conference on Dependable and Secure Computing (DSC), held at Shangri-La's Far Eastern Plaza Hotel, Taipei, August 2017. It was a great success with over 160 submissions from 20 countries and more than 130 attendees. To continue the success, we will host IEEE DSC to be held in Kaohsiung, Dec. 2018. The Reliability Society President Jeff Voas will give the opening keynote speech in the conference. Our chapter Chair Shiuhpyng Shieh will serve as the Steering Committee Chair of the conference and the VP of IEEE Reliability Society. Other activities are listed as follows:

i. 9/20.2017

The Technical Lecture

Topic：Design For Long Term

Speaker：Michael J Chang

Attendance: 100

ii. 9/13/2017

The Technical Lecture

Topic：A French Touch in Science and Technology

Speaker：Emmanuelle Platzgummer

Attendance:100

iii. 03/16/2017

The Technical Lecture

Topic：Graph Computing for Network Science and Machine Intelligence

Speaker：Dr. Ching-Yung Lin

Attendance:95

iv. 01/20/2017

The Technical Lecture

Topic：Big Data Analytics: A New Frontier to Explore

Speaker：Michael Rung-Tsong Lyu

Attendance：40

v. 01/11/2017

The Technical Lecture

Topic：The Coming of Fintech with the Game of Payments

Speaker：San-Yi Chen

Attendance：80

vi. 10/16/2017

The Technical Lecture

Topic：Overfit the Visual World: Computer Vision via Machine Learning

Speaker：Wei-Chen Chiu

Attendance：48

vii. 08/08/2017

The Technical Lecture

Topic：Attribute-Based Access Control: Insights and Challenges

Speaker：Ravi Sandhu

Attendance：100

viii. 8/9/2017

The Technical Lecture

Topic：Increase Your Security Effectiveness by Automating and Machine Learning

Speaker：Michael Montoya

Attendance：100

ix. 10/02/2017

The Technical Lecture

Topic：Real-Time Road Traffic Prediction: Experiment Platform Design and Models

Speaker：Shun-Ren Yang

Attendance：85

x. 9/27/2017

The Technical Lecture

Topic：Science and Innovation in Australia

Speaker：Marcus Wu

Attendance：45

25. <u>Chapter Name: Sensors Council Taipei Chapter (SEN39)</u>

i. 05/24/2017

The Technical talk

Title: A wearable PPG blood pressure and flow sensor.

Location: the 5th Asian Workshop on Smart Sensor Systems, Jeju Island, Korea

Speaker: Chair Prof. Chao

ii. 05/24/2017

The Technical talk

Title: A wearable PPG blood pressure and flow sensor.

Location: Yonsei University, Seoul, Korea

Speaker: Chair Prof. Chao

iii. 04/19/2017

The Technical talk

Title: A wearable PPG blood pressure and flow sensor.

Location: National Chung Cheng University, Chia-Yi, Taiwan.

Speaker: Chair Prof. Chao

iv. 05/09/2017

The Technical talk

Title: A cuffless, batteryless blood pressure sensor.

Location: National Applied Research Laboratory, Ministry of Science and Technology, Taiwan Government.

Speaker: Chair Prof. Chao

v. 06/29/2017

The Technical talk

Title: 0.5 nA LSB Current–Sensing Circuit.

Location: Novatek Corp., an in-house seminar, Hsinchu, Taiwan

Speaker: Chair Prof. Chao

vi. 06/30/2017

The Technical talk

Title: A novel readout for a high resolution magnetic sensor.

Location: ITRI Forum of advanced sensor technologies, Industrial Technology Research Institute, Hsinchu, Taiwan.

Speaker: Chair Prof. Chao

vii. 11/10/2017

The Technical talk

Title: A cuffless blood pressure sensor for continuous noninvasive arterial pressure.

Location: National Applied Research Laboratory, Ministry of Science and Technology, Taiwan Government, Taipei, Taiwan.

Speaker: Chair Prof. Chao

viii. 11/22/2017

The Technical talk

Title: A 6-axis force and torque sensor applied to a Cobot system.

Location: National Applied Research Laboratory, Ministry of Science and Technology, Taiwan Government, Taipei, Taiwan.

Speaker: Chair Prof. Chao

ix. 11/22/2017

The Technical talk

Title: A new PD/LED module developed for cuffless blood pressure and flow measurement.

Location: Epistar in-house seminar, Taichung, Taiwan.

Speaker: Chair Prof. Chao

Chapter Activities

i. 04/29/2017

The Technical talk

Title: Microprobes as smart biomedical devices

Location: National Chiao Tung University

Speaker: Prof Mahajan

ii. 05/10/2017

The Technical lecture

Title: Low-power Bio-PPG sensor for IoT

Speaker: Chair Prof. Chao

Lecture

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 m*icrocontroller 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 ± 10 mm-Hg to be within ± 5 mmHg for varied skin colors, ages, heights, weights, genders and races.

iii. 05/10/2017

Joint Seminar Austria – Taiwan

Seminar Chairman Prof. Chao

Attendance: 60 guests and students

Topic: Energy Efficient Distributed Sensor Systems for the Internet of Things

This seminar provides a forum for the experts and scholars from both sides of Austria and Taiwan to exchange and discuss their research results and prospects on the "Energy Efficient Distributed Sensor Systems for the Internet of Things." Sensors have played important roles in the most recent advances of IoT technologies. Many of these sensors along their electronics are often required to be small-sized, stand-alone, wireless, energy-efficient and/or even equipped with energy harvesters for self-poweredness. Multiple sensors are often employed as for a network to accomplish an IoT application system. The speakers from both sides are leaders in the IoT technologies in their countries. Austria experts are known in energy-efficient sensors, self-aware electronics, sensor network and security, while Taiwan experts are specialized in photovoltaic/mechanical energy harvesters, optical sensors and low-power IC circuits. Complementation of expertizes from both side pave the way for future cooperation in a joint project towards advances in the next-generation IoT sensor technologies.

The joint seminar is an opportunity to stimulate interaction between other research fields beyond the existing collaboration as well as to include researchers working in related and complementary fields. Being together for focused work during four days will allow the participants to get to know each other's research and to develop common ideas much more effectively than the limited interaction possibilities during conferences or meetings attended for other purposes. This way, the joint seminar is an absolute prerequisite for any future collaboration that is bound to be successful.

iv. 09/27/2017

Students get-together and talk to professors

The Future Technology Award

Chair Prof. Chao responded the Future Technology Award (Taiwan Oscar Invention Award) from Ministry of Science and Technology (MOST), 2017 Taiwan Government.

The Future Technology Award (Taiwan Oscar Invention Award) from Ministry of Science and Technology (MOST), 2017 Taiwan Government for the developed cuffless blood pressure sensor.

The Future Technology Award (Taiwan Oscar Invention Award) from Ministry of Science and Technology (MOST), 2017 Taiwan Government for the developed IoT Beacon.

26. <u>Chapter Name: Systems, Man, and Cybernetics Society Taipei Chapter (SMC28)</u>

i. SMC Taipei Chapter helped host The 25th National Conf. on Fuzzy Theory and its Application, Kenting, Taiwan, Nov. 12-15, 2017. Participants: 150

ii. SMC Taipei Chapter helped host The Int. Conf. on Fuzzy Theory and its Application, Kenting, Taiwan, Nov. 12-15, 2017. Participants: 250

iii. SMC Taipei Chapter helped host IEEE Int. Conf. on Systems, Man, and Cybernetics (IEEE SMC2017), Banff, Canada, Oct. 5-8, 2017. Participants: 1100. A group of 10 presenters from universities in Taiwan were sponsored by the special budget from the MOST to attend and organize the conference. In particular, Prof. Yo-Ping Huang, past chair of the SMC Taipei Chapter, was the Registration Chair.

iv. SMC Taipei Chapter helped host The National Symposium on Systems Science and Engineering (NSSSE 2017), National Taiwan Normal University, Taiwan, May 19-20, 2017. Participants: 100

v. SMC Taipei Chapter helped host 2017 IEEE Int. Conf. on System Science and Engineering (ICSSE 2017), Ho Chi Minh City, Vietnam, July 21-23, 2017. Participants: 150

27. <u>Chapter Name: Systems, Man, and Cybernetics Society Taichung Chapter (SMC28-TC)</u>

i. International Conference on Advanced Robotics and Intelligent Systems (ARIS2017)

Date: 2017.09.06~2017.09.08

Location: Taipei Nangang Exhibition Center, Taipei, Tawan

Attendance : 150

Activity : The 2017 International Conference on Advanced Robotics and Intelligent Systems (ARIS2017) was held in Taipei Nangang Exhibition Center on September 6-8, 2017, 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. Satoshi Tadokoro, Prof. C. L. Philip CHEN, Prof. Li-Chen, and Prof. Raja Chatila 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 (NSSSE2017)

Date: 2017.05.19~2017.05.20, Taipei, Tawan
Location: National Taiwan Normal University
Attendance : 123
Activity : 2017 National Symposium on System Science and Engineering (NSSSE) was held on May 19th – 20th in National Taiwan Normal University, where more than 200 researches and students from well-known universities around Taiwan participated this symposium. There are a total of 123 papers being published, and those papers cover topics including Applications and Design of Intelligent Systems, Robotic Systems, System Applications in Business and Industry, Modeling and Simulation, as well as Decision and Control Systems. On the first day of the Symposium, two well-known scholars were invited to give key-note speaches. The first speech, “Deep Learning Networks – Architectural Evolution and Theorwtical Foundation”, was provided by Dr. C.- C. Jay Kuo from the Department of Electrical Engineering, University of Southern California (USC). The second one, “Toward Theoretical Synthesis of Biocomputer”, was given by Prof. Chun-Liang Lin from the Department of Electrical Engineering, National Chung Hsing University. Two speaches were responded overwhelmingly by many professors and students.To encourage students’ contributions, best student paper awards were provided in the Synposium. Among 11 papers, the top three and two honorable mentions were awarded according to intense discussions from the reviewers. Moreover, CenMing Limited Liability Company, TeraSoft Corporation, and PinSyun Technologies Corporation were invited to exhibit in the Symposium, providing cooperations and communications between industries and universities. On May, 19th, the banquet was held in Howard Civil Service International House, allowing participants to enjoy a pleasurable dinner in addition to sharing and discussing their research works. With the help of Department of Electrical Engineering, National Taiwan Normal University, 2017 National Symposium on System Science and Engineering was concluded successfully.

iii. The 2017 National Conference on Advanced Robotics (NCAR2017)

Date: 2017.09.06-2017.09.08
Location: Taipei Nangang Exhibition Center, Taipei, Taiwan
Attendance : 52

Activity: The 2017 National Conference on Advanced Robotics (NCAR2017) was held in Taipei Nangang Exhibition Center, Taiwan, over September 6-8, 2017. This conference presented 36 papers in total. Those papers cover numerous valuable innovations, the state-of-the-art, and latest research results within the conference topics; among them are advanced robotics, intelligent systems, and medicine and healthcare technologies, and so on. Much in-depth discussion concerning with how adavanced robotics and intelligent systems should be further developed were found at the conference. The conference was composed of 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 particularly invited four plenary speakers, Prof. Satoshi Tadokoro, Prof. C. L. Philip Chen, Prof. Li-Chen Fu, and Prof. Raja Chatila 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 adavanced robotics and intelligent systems.

iv. 2017 International Automatic Control Conference (CACS2017)

Date: 2017.11.12-2017.11.15

Location: Howard Beach Resort Kenting, Pingtung, Taiwan

Attendance: 224

Activity: The 2017 International Automatic Control Conference was hosted by National Taiwan University of Science and Technology, Taipei, Taiwan from 13 Noverber to 15 Noverber, 2017. The conference was composed of six invited plenary speeches from Prof. Tianyou Chai, Prof. Edwin K. P. Chong, Prof. Witold Pedrycz, Prof. Bernard De Baets, and Prof. Shigeki Sugano, almost 70 technical oral presentations, best student paper award competitions, best MS and Ph. D dissertation competitions. In addition, nearly 70 technical papers were presented by scholars from universities and industrial institutions. This conference not only had conventional oral presentations sessions, but also encouraged some hands-on systems together with video shows. We believed that this conference is helpful in effectively spreading the research results to appropriate researchers and institutions. Many IEEE SMCS members and student members were very impressed with six plenary speakers' concise and wonderful presentations and their novel and outstanding research results. In addition, The panel discussion and plenary speeches let members and students learn more about the control system.

v. 2017 International Conference on Fuzzy Theory and Its Applications (iFuzzy2017)

Date: 2017.11.12-2017.11.15

Location: Howard Beach Resort Kenting, Pingtung, Taiwan

Attendance: 83

Activity: This 2017 International Conference on Fuzzy Theory and Its Applications was hosted by National Formosa University, Yunlin, Taiwan from 13 Noverber to 15

Noverber, 2017, by exactly following the planned schedule. The conference was composed of six invited plenary speeches from Prof. Tianyou Chai, Prof. Edwin K. P. Chong, Prof. Witold Pedrycz, Prof. Bernard De Baets, and Prof. Shigeki Sugano, almost 60 technical oral presentations, best student paper award competitions, best MS and Ph. D dissertation competitions.

In addition, nearly 60 technical papers were presented by scholars from universities and industrial institutions. This conference not only had conventional oral presentations sessions, but also encouraged some hands-on systems together with video shows. We believed that this conference is helpful in effectively spreading the research results to appropriate researchers and institutions. Many IEEE SMCS members and student members were very impressed with six plenary speakers' concise and wonderful presentations and their novel and outstanding research results. In addition, The panel discussion and plenary speeches let members and students learn more about the fuzzy system framework, some new results on fusing Inconsistent Information and Behavior Change, computational intelligent brain-machine interface for natural cognition，collaboration and synergy in fuzzy system modeling, and transitivity.

vi. SMC Taichung Chapter organized workshops to promote and recruit new members to join IEEE SMCS, Taichung, Taiwan, 19 May and 7 November 7, 2017.

Participants:36

28. <u>Chapter Name: Signal Processing Society Taipei Chapter (SP01)</u>

i. We have sponsored IEEE International Conference on Consumer Electronics-TW 2017 (June 12-14) and will continuously sponsor ICCE-TW 2018. The ICCE-TW 2017 had accepted around 200 technical papers.

ii. We have sponsored 2017 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.

iii. We have sponsored 2017 IET Multidisciplinary of Microelectronic-Information Symposium

iv. IEEE SP Distinguished Lecture Given by Prof. Kai-Kuang Ma from Nanyang Technological University –*Fundamental Image Processing for High-definition Images*

Time: 10:30-11:30, July 19 (Wednesday), 2017

Location: National Taiwan University of Science and Technology, International Building (IB-202)

Abstract:

Recent development of high-resolution displays (e.g., 4K displays) has brought a plethora of new requirements and expectations on high-resolution and high-quality images. Owing to such trend and the demand on critical image quality assessment, some existing image processing techniques might be required to investigate further. In this talk, I shall highlight some fundamental image processing techniques, such as image demosaicing, image interpolation, super-resolution, feature extraction and equalization, for example. Recently developed state-of-the-art techniques will be discussed.

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

v. ISSCC 2017 Review WorkshopSpeaker : Dr. Hideto Hidaka (Renesas)

Date: 2017/05/19

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

vi. Exploiting Data-driven Inference Towards Low-energy Implementations in Intelligent Sensors

Speaker: Prof. Naveen Verma (Princeton University)

Date: 2017/07/31

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

vii. AI summer course

Speaker: Prof. Marilyn Wolf (Georgia Tech)
Prof. Yiran Chen (Duke University)
Prof. Yu Wang (Tsinghua University)
Prof. Sungjoo Yoo (Seoul National University)
Prof. Vivienne Sze (Massachusetts Institute of Technology)
Prof. Hai (Helen) Li (Duke University)

Date :2017/08/07-11

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

viii. MEMS Oscillating Accelerometer

Speaker: Prof. Yong Ping Xu (National University of Singapore)

Date :2017/12/07

Place: National Taiwan University (NTU), Taipei, Taiwan

30. Chapter Name: Vehicular Technology Society Taipei Chapter (VT06)

IEEE VTS Taipei Chapter has sponsored or co-sponsored 6 events during the year of 2017, each of which is described in more detail as follows:

i. Technical speech given by Prof. Mianxiong Dong from Muroran Institute of Technology, Japan, with the title *"Human-Like Driving: Empirical Decision-Making System for Autonomous Vehicles"*

Time: 04/07/2017; 14:20 p.m.-15:20 p.m.
City: Taipei
Country: Taiwan
Meeting Keywords: Autonomous vehicle, Convolutional Neural Network
Guest Attendance: 40-50
IEEE Member Attendance: 10
Invite Students: Yes
Event Description: Prof. Dong was invited to give a technical speech, entitled as *"Human-Like Driving: Empirical Decision-Making System for Autonomous Vehicle"* on April 7th, 2017, in National Taiwan University. This event was co-sponsored by IEEE VTS Taipei chapter. Prof. Dong in his talk introduced his proposed method to address the major cause in autonomous vehicle issue, that is, the misunderstanding between self-driving systems and human drivers. To solve this problem, a human-like driving system was proposed to give autonomous vehicles the ability to make decisions like a human. The most significant advantage was that the proposed method can well adapt to real-life road conditions, in which a massive number of human drivers exist. He built his perception system only on the depth information, and avoided the unstable RGB data. Prof. Dong also described the current trend of autonomous vehicle and identified a number of future research challenges.

ii. Talk given by Dr. Qi Bi from China Telecom –*Observation to the Road of Success*

Time: 05/02/2017; 14:20 p.m.-15:20 p.m.
City: Taipei
Country: Taiwan
Meeting Keywords: observation, contemplation in research
Guest Attendance: 50-55
IEEE Member Attendance: 15
Invite Students: Yes
Event Description: Dr. Qi Bi, current President of Technology Innovation Center of China Telecom and IEEE fellow, was invited to give a talk, entitle as" Observation to the Road of Success, in National Taiwan University. This event was co-sponsored by IEEE VTS Taipei chapter. As a successful industry expert who manages forward looking R&D organizations with main responsibilities in wireless communications and holds 35 US patents and 63 European patents, Dr. Bi shared his lifelong observation, understanding and contemplation in the process of pursuit of research

accomplishments. He provided respective short-term, mid-term, and long-term purposes of research stages for undergraduate students to ponder what kind of person they could choose to be, an artist (a scientist, a master and an inventor) or a crafts man (an industrialist, an entrepreneur, and an innovator) at the very start of their research careers. The speech was successful and came to a satisfactory close after a heated discussion in Q&A session.

iii. Technical speech given by Dr. Tomohiko Taniguchi from FUJITSU LAB LTD – *Human Centric Society: Fujitsu and its R&D (IoT/Cloud, Mobile 5G, etc.)*

Time: 05/31/2017; 11:00 a.m.-12:00 p.m.
City: Taipei
Country: Taiwan
Guest Attendance: 25-30
IEEE Member Attendance: 5
Invite Students: Yes
Meeting Keywords: IoT/Cloud, Mobile 5G
Event Description: Thanks to the invitation by Prof. Hung-Yu, Wei (the chair of IEEE VTS Taipei Chapter) of National Taiwan University, Dr. Tomohiko Taniguchi visited Taiwan on 2017/5/31 to deliver a technical speech in National Taiwan University. More than 25 audiences participated this talk; most of whom from the Department of Computer Science & Information Engineering of National Taiwan University.
As an industry expert, Dr. Taniguchi has been active in the field of signal processing for more than 30 years and is recognized for his inventions in speech coding and DSP technologies (holds essential patents for international standards, such as ITU-T, MPEG, and 3GPP). In his talk, he introduced Fujitsu Lab Ltd. regarding its R&D and its research in IoT/Cloud as well as Mobile 5G fields. In addition, he also shared his working experience in Fujitsu Lab with the audience with his successful stories. This event was sponsored by IEEE VTS Taipei chapter.

iv. Technical speech given by Dr. Hua Lung Tsai from Industrial Technology Research Institute, Taiwan –*Modeling, Theory and Practice: Lessons Learned Sidelink and its proposed extensions to other topics such as eV2X and FeD2D*

Time: 06/13/2017; 09:10 a.m.-12:00 p.m.
City: Taipei
Country: Taiwan
Meeting Keywords: Sidelink, eV2X, FeD2D
Guest Attendance: 35
IEEE Member Attendance: 5
Invite Students: Yes
Event Description: Invited by Prof. Hung-Yu, Wei of National Taiwan University, Dr. Tsai visited National Taiwan University on 2017/6/13 to deliver a technical speech.

Approximately 35 audiences attended this talk; most of whom from Department of Electrical Engineering of National Taiwan University. Dr. Tsai has devoted to the promotion of 3GPP LTE-A & New Radio Access Technology. In the speech, he gave an overview on the 3GPP sidelink technology and introduced his recent research on it and the proposed extensions to other topics, eV2x and FeD2E etc. Sidelink was a promising technology applied to several applications, such as proximity service (D2D), V2V, V2P, IoT, and wearable equipment. He then addressed sidelink, its use cases and frame work, and further enhancements LTE Device to Device, UE to Network Relays for IoT and wearable. Gaps between current D2D and enhancement for FeD2D were also compared by him. Finally, the evolution of LTE-V2X services and NR in LTE and 5G networks have been conclusively mentioned by Dr. Tsai, followed by a detailed discussion of research challenges and potential solutions with the NTU audiences.

This event was sponsored by IEEE VTS Taipei chapter.

v. Technical speech given by Prof.Winston K.G. Seah from Victoria University of Wellington –*Making Sense out of IoT*

Time: 06/21/2017; 14:00 p.m.-15:00 p.m.

City: Taipei

Country: Taiwan

Meeting Keywords: IoT

Guest Attendance: 40-45

IEEE Member Attendance: 10

Invite Students: Yes

Event Description: Prof. Winston K.G. Seah, current Professor of Network Engineering in the School of Engineering and Computer Science, Victoria University of Wellington, New Zealand, was invited to deliver a technical speech, entitle as "Making Sense out of IoT" on June 21th, 2017, in National Taiwan University. More than 40 audiences attended this talk; most of whom from the Graduate Institute of Networking and Multimedia and Department of Computer Science & Information Engineering of National Taiwan University. Prof. Seah's talk aimed to put some context into the different definitions of IoT and the research challenges in regard of the transformation from its original form to "Internet of Things", which refers to this new Internet where devices generate data and communicate, interacting often without any human intervention. He shared his acknowledge and experience through years of research in 5G networks, the Internet of Things and other machine-type communications (MTC) technologies, encompassing both long-range communications (LTE-A, Narrowband IoT). Finally, Prof. Seah warped up his talk with witty sentence that hoped his talk could make some sense out of IoT "non-sense".

This event was partly sponsored by IEEE VTS Taipei.

vi. Technical speech given by Prof. Youngchul Sung from KAIST, Korea –*User Scheduling and Beamformer Design in Massive MIMO and mmWave Massive MIMO*

Time: 08/01/2017; 14:00 p.m.-15:00 p.m.

City: Taipei

Country: Taiwan

Meeting Keywords: User scheduling, MU-MIMO, 5G

Guest Attendance: 40-45

IEEE Member Attendance: 10

Invite Students: Yes

Event Description: Prof. Youngchul Sung was invited to give a technical speech, entitle as "User Scheduling and Beamformer Design in Massive MIMO and mmWave Massive MIMO" in National Taiwan University on Aug. 1st 2017. Around 40 audiences participated in this talk. Prof. Sung first gave an overview on the evolution of multiple-input multiple-output (MIMO) from 3G high-speed downlink/uplink packet access (HSDPA/HSUPA), 4G cellular networks to 5G. He also mentioned that the introduction of MIMO did provide additional degree-of-freedom for user scheduling by simultaneously supporting multiple users in the spatial domain at the same time and frequency. His current research was focusing on cellular downlink, considering multi-user (MU)-MIMO scheduling and introducing recent theoretical and practical advances in MU-MIMO scheduling especially for the 5G key enablers, massive MIMO and mmWave massive MIMO. In this talk, he introduced the latest results in the multi-user diversity gain of the popular beam-training-based user scheduling in mmWave massive MIMO. During the Q&A section, the interaction among Prof. Sung and attendees was heated and quiet inspiring. This event was co-organized 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**
  - 2017 6th International Symposium on Next Generation Electronics (ISNE), 2017.5.23~25
  - 2017 International Conference on System Science and Engineering (ICSSE), 2017.7.21~23
  - 2017 8th International Conference on Awareness Science and Technology (iCAST), 2017.11.8 ~10
  - 2017 Asia Fog Computing and Networking Summit (AFCNS), 2017.11.30-12.1.
  - 2017 Second International Conference on Computational Intelligence Theory, Systems and Applications (CCITSA), 2017.12.12~14.
  - 2017 18th International Conference on Parallel and Distributed Computing, Applications and Technologies(PDCAT), 2017.12.18~20
  - 2017 IEEE International Symposium on Product Safety and Compliance Engineering - Taiwan (ISPCE-TW), 2017.12.21~22

B.4 Students Activities

- Total number of Student branches in the Section: 18

1. **Student Branch Name: IEEE Chung Yuan Christian University Student Branch**
   Student Branch Chair: Hsu-You Kao
   Student Branch Counselor: Shih-Hsu Huang

2. **Student Branch Name: IEEE National Central University Student Branch**
   Student Branch Chair: I Ju, Yang
   Student Branch Counselor: Jen-Inn Chyi

3. **Student Branch Name: IEEE National Chiao Tung University Student Branch**
   Student Branch Chair: Han-Chung Chang
   Student Branch Counselor: Bo-Cheng Lai

4. **Student Branch Name: IEEE National Chiao Tung University CE Society (CES)**
   Student Branch Chair: Jia-Ching Chou
   Student Branch Counselor: Ti-hao Chiang

5. **Student Branch Name: IEEE National Chiao Tung University ED Society (EDS)**
   Student Branch Chair: Hsuan Pai
   Student Branch Counselor: Tuo-Hung Hou

6. **Student Branch Name: IEEE National Chung Hsing University Student Branch**
   Student Branch Chair: Feng-Chun Dai
   Student Branch Counselor: Ching-Chih Tsai

7. **Student Branch Name: IEEE National Chung Hsing University SMC Society (SMCS)**
   Student Branch Chair: Feng-Chun Dai
   Student Branch Counselor: Ching-Chih Tsai

8. **Student Branch Name: IEEE National Kaohsiung Marine University IA Society (IAS)**
   Student Branch Chair: Chin-Tien Chung
   Student Branch Counselor: Jing-Ting Yu

9. **Student Branch Name: IEEE National Sun Yat-sen University Student Branch**
   Student Branch Chair: Jian-Ying Lai
   Student Branch Counselor: Jen-Hao Teng

10. **Student Branch Name: IEEE National Taiwan University Student Branch**
    Student Branch Chair: Pin-Chun Hsu
    Student Branch Counselor: Shih-Yuan Chen

11. **Student Branch Name: IEEE National Taiwan University of Science and Technology Student Branch**
    Student Branch Chair: Yu-Chuan Chang
    Student Branch Counselor: Shyi-Ming Chen

12. **Student Branch Name: IEEE National Taiwan University of Science and Technology SMC Society (SMCS)**
    Student Branch Chair: Li-Wei Lee
    Student Branch Counselor: Shyi-Ming Chen

13. **Student Branch Name: IEEE National Tsing Hua University Student Branch**
    Student Branch Chair: Wei-Hsu Chao
    Student Branch Counselor: Chih-Cheng Hsieh

14. **Student Branch Name: IEEE National Tsing Hua University ED Society (EDS)**
    Student Branch Chair: Chia-Hui Cheng
    Student Branch Counselor: Chih-Fang Huang

15. **Student Branch Name: IEEE National Tsing Hua University IA Society (IAS)**
    Student Branch Chair: Meng-jiang Tsai
    Student Branch Counselor: Po-Tai Cheng

16. **Student Branch Name: IEEE National Tsing Hua University PEL Society (PELS)**
    Student Branch Chair: Meng-Jiang Tsai
    Student Branch Counselor: Po-Tai Cheng

17. **Student Branch Name: IEEE Yuan Ze University Student Branch**
    Student Branch Chair: Mostafa Al-Harbawi
    Student Branch Counselor: Jacky D. Peng

18. **Student Branch Name: IEEE Yuan Ze University SMC Society (SMCS)**
    Student Branch Chair: Chien-Min Chen
    Student Branch Counselor: Jeng-Kuang Huang

- Number of Student Branches formed in the current year: 1
  - National Kaohsiung Marine University Industry Applications Society Student Branch Chapter was established this year.
- Section level student activities (student congress, paper and other contests, awards etc)
  - Rendering Awards for outstanding Student Branch/ Chapter.

- Number of Active Student Branches (Student Branches who have reported required number of meetings during the year): 13

1. <u>Student Branch Name: IEEE Chung Yuan Christian University Student Branch</u>

Date	2017/7/17 (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

Date	2017/9/18 (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	6	Guests	5

Date	2017/11/20 (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	6	Guests	7

2. <u>Student Branch Name: IEEE National Central University Student Branch</u>

Date	Event	Topic	Attendees
2017/2/22	**Orientation Party**	Introduction of IEEE Student Branch in NCU Introduction of IEEE Xplore resource	All student members
2017/3/22	**Student Presentation 1**	Virtual Reality	Presenters: 何元植、周育霆、池宇非 Participants: all student members
2017/3/28	**Institution visit**	Dell Taiwan Design Center	All student members
2017/3/29	**Student Presentation 2**	Artificial Intelligence	Presenters: 李御銓、鄭凱文、傅冠綺 Participants: all student members

2017/4/19	**Student Presentation 3**	Introduction to RFID Technology	Presenters: 蘇輊翔、吳亭葳、徐漢芒 Participants: all student members
2017/4/25	**Laboratory visit**	Visit laboratories of NCU electronic engineering (MSIC Lab, Clean room(Fab), MINE lab, no reflection lab)	All student members
2017/5/3	**Student Presentation 4**	Space communication	Presenters: 蔡杰儒、江孟頎、郭珮宜 Participants: all student members
2017/5/17	**Student Presentation 5**	Introduction to SSD	Presenters: 許佑仁、鍾支澈 Participants: all student members
2017/5/31	**Student Presentation 6**	Automatic Drone System	Presenters: 陳奕誠、林威廷、戴宇星 Participants: all student members
2017/6/7	**Final Party**	Giving award to well-performed students	All student members
2017/9/27	**Orientation Party**	Introduction of IEEE Student Branch in NCU	All student members
2017/10/18	**Student Presentation 1**	Technology and Application of Blockchain	Presenters: 林彥伯、朱柏彥、吳亭葳 Participants: all student members
2017/10/25	**Lecture1**	Artificial Intelligence: Industry 4.0	Speaker: Mu-Chun,Su, Professor Participants: all student members
2017/11/15	**Student Presentation 2**	Artificial Intelligence: Machine Learning & Application and Challenges of Neural Network	Presenter: 謝明航 Participants: all student members
2017/11/29	**Lecture 2**	Recent Application and News about AI and CV	Speaker: Yong-Huei, Li, Professor Participants: all student members
2017/12/13	**Lecture 3**	Innovation	Speaker: Jen-Inn, Chyi, Professor Participants: all student members
2017/12/26	**Laboratory visit**	Visit laboratories of NCU electronic engineering (MSIC Lab, Clean room(Fab))	All student members
2018/1/4	**Final Party**	Giving award to well-performed students	All student members

3. <u>Student Branch Name: IEEE National Chiao Tung University Student Branch</u>

Event	Internship Forum of 5th Core System expert Training Program	
Time/Date	June 30 (Fri), 13.10pm~17pm, 2017	
Location	National Chiao Tung University Engineering Building C 115	
Content		
Time	Topic	Speaker
13:10~13:20	Sign up	
13:30~13:40	Speech of Organizer	Prof. Shanq-Jang Ruan
13:40~14:20	Speech of Company manager I	Department head of Infotrend HR
14:20~15:00	Speech of Company manager II	Department head of Qisda RD

15:00~15:20	Break	
15:20~16:00	Concept of Wisdom & Property	World Patent & Trademark Law Office
16:00~16:40	Speech of Alumni	Dell Inc.
16:40~17:00	Q&A	Acer Inc.

- We have held some lectures to introduce some interesting topics on Machine Learning, Convolution Neural Network, Memory and so on.
- We also invited some students to share their valuable personal experiences on intern, publishing, competition and research.

4. <u>Student Branch Name: IEEE National Chiao Tung University ED Society (EDS)</u>

In the year 2017, the student chapter has co-organized with ED-16 Taipei chapter the following events by inviting five EDS DLs and experts as the speakers.

Topic	High Performance Selector and 3D Integration of Vertical-RRAM
Speaker	Dr. Ming Liu
Time/Date	Mar. 28 (Tuesday), 10:50am~11:30pm, 2017
Location	Engineering Building D 528

Topic	Why the Power Consumption of TSMC A9 Processor is Better Than Samsung Processor
Speaker	Dr. E-Ray Hsieh
Time/Date	Mar. 29 (Wednesday), 12:00pm~1:20pm, 2017
Location	Engineering Building D 117

Topic	Investigation of Frequency Behavior and Modeling of Gate-Leakage in Advanced FDSOI CMOS Technology
Speaker	Mr. Mandar Bhoir
Time/Date	May. 3 (Wednesday), 10:30am~12:00pm, 2017
Location	Engineering Building D 424

Topic	Beyond Weibull and Poisson Statistical Models:Time-dependent clustering model for dielectric breakdown and RRAM Applications
Speaker	Ernest Y. Wu/IBM, IEEE Fellow
Time/Date	Oct. 19 (Thursday), 01:30pm~02:30pm, 2017
Location	Engineering Building D 528

Topic	Filamentary Analog RRAM for Neuromorphic Computing
Speaker	Prof. Bin Gao, Tsinghua Universityy
Time/Date	Oct. 19 (Thursday), 02:30pm~03:30pm, 2017
Location	Engineering Building D 528

5. <u>Student Branch Name: IEEE National Chung Hsing University Student Branch</u> and

<u>Student Branch Name: IEEE National Chung Hsing University SMC Society (SMCS)</u>

i. 18 IEEE SMC student members actively joined the 2017 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.

ii. 18 IEEE SMC student members actively joined the 2017 National Conference on Advanced Robotics. They learned a lot of latest knowledge about advanced robotics developed in Taiwan, and got valuable personal experience on how professionals presented their papers .

iii. 4 IEEE SMC student members actively joined the 2017 National Symposium on System Science and Engineering, and presented their papers in an oral form. They made academic exchange with the conference attendees and obtained valuable personal experience on how to communicate with professionals and practitioners.

iv. 1 IEEE SMC student members actively joined the 2017 International Automatic Control Conference, and presented his paper in an oral form. He received the honorable mention award after oral presentation for the best student paper award session.

v. 1 IEEE SMC student members actively joined the 2017 International Conference on Fuzzy Theory and Its Applications, and orally presented his paper in the best student paper award. His e received the first place award for the best student paper competition.

6. <u>Student Branch Name: IEEE National Kaohsiung Marine University IA Society (IAS)</u>

i. Mr. Chih-Tien Chung who is one of the NKMU IAS student members was an exchange student to Tokyo University of Marine Science and Technology, Japan since April 2017 and co-advised with Prof. Hiroyasu Kifune.

ii. The following lectures from academia and industry were given to the NKMU IAS student members.

Date	2017/3/15 (yyyy/mm/dd)			
Event	Beakthrough and Application of Green Energy Technology			
Location	National Kaohsiung Marine University			
Attendances	IEEE Members	4	Guests	8

Date	2017/4/26 (yyyy/mm/dd)			
Event	Fault Diagnosis Systems for Electrical Motors			
Location	National Kaohsiung Marine University			
Attendances	IEEE Members	3	Guests	17

Date	2017/5/17 (yyyy/mm/dd)

Event	Offshore Wind Power in Taiwan			
Location	National Kaohsiung Marine University			
Attendances	IEEE Members	3	Guests	16

Date	2017/7/7 (yyyy/mm/dd)			
Event	2017 Maritime Microgrid Industry–Academia Consortium Technical seminar 2017 船艦微電網產學聯盟技術研討會			
Location	National Kaohsiung Marine University			
Attendances	IEEE Members	5	Guests	49

7. <u>Student Branch Name: IEEE National Sun Yat-sen University Student Branch</u>

Topic	Miniature Devices for Smart Health Management
Speaker	Dr. J.-C. Chiao, University of Texas at Arlington, USA, SPIE Fellow
Time/Date	Nov. 21 (Tuesday), 14:00~16:00, 2017
Location	EC2011
Content	Mobile technologies have changed our life style significantly. Personalized tools such as wearable and implantable devices through wireless communication and Internet of Things have been utilized in healthcare to provide unique functions and reduce costs. Individuals can be empowered with tailored solutions without limitation in mobility. Direct stimulation on tissues or organs by electrical signals can restore or improve body functions. Continuous monitoring and adaptive administration of therapy to treat symptoms via wireless body networking can adaptively optimize the closed-loop health management. This presentation discusses the development of wireless micro devices and integrated systems for clinical applications. Examples given aim to inspire new application ideas to address the implementation and cost challenges in healthcare, and enable integration of electronics and medicines to improve human welfare and assist better living. Dr. Chiao will also share with students about his experience in entrepreneurship and the career potential in healthcare industries.
Biography	Dr. Chiao is Greene professor and Garrett professor of Electrical Engineering at University of Texas – Arlington. He received his PhD at Caltech and was with Bellcore, University of Hawaii-Manoa and Chorum Technologies before he joined UT-Arlington in 2002. Dr. Chiao has published more than 260 peer-reviewed papers and received 12 patents. He received the 2011 O'Donnell Award in Engineering presented by The Academy of Medicine, Engineering and Science of Texas. He received the Tech Titan Technology Innovator Award; Lockheed Martin Aeronautics Excellence in Engineering Teaching Award; Research in Medicine milestone award by Heroes of Healthcare; IEEE MTT Distinguished Microwave Lecturer; IEEE Region 5 Outstanding Engineering Educator and individual Achievement awards. Currently, he is an IEEE Sensors Council Distinguished Lecturer and serving as the Editor-in-Chief for Journal of Electromagnetics, RF and Microwaves in Medicine and Biology. His webpage is at http://www.uta.edu/faculty/jcchiao/

Topic	Exploiting unique attributes of junctionless transistors for low power applications & Tunnel Field Effect Transistors: A Solution for Ultra Low Power Electronics
Speaker	Dr. Siegfried Mantl, Head of the ion beam division of the Peter Gruenberg Institute 9 (PGI-9-IT), Professor of physics at Aachen University of Technology (RWTH Aachen)
Time/Date	Oct. 3 (Tuesday), 14:00~16:00, 2017

Location	EC2011

Topic	The Design and Analysis of Sub-Sampling Frequency Synthesizers
Speaker	Dr. Tai-Cheng Lee, Graduate Institute of Electronics Engineering, NTU
Time/Date	Oct. 31 (Tuesday), 14:00~16:00, 2017
Location	EC2011

Topic	Signal-Centric Predictive Medium Access Control for M2M Communications
Speaker	Dr. Rung-Hung Gau, Electrical and Computer Engineering (ECE), NCTU
Time/Date	Oct. 24 (Tuesday), 14:00~16:00, 2017
Location	EC2011

8. Student Branch Name: IEEE National Taiwan University of Science and Technology Student Branch and

Student Branch Name: IEEE National Taiwan University of Science and Technology SMC Society (SMCS)

Topic	Many-Objective Evolutionary Algorithms - Visualization and Decision-Making
Speaker	Professor Gary G. Yen, Director, Regents Professor, FIEEE, FIET, School of Electrical and Computer Engineering, Oklahoma State University, U. S. A.
Time/Date	June 15, 2017 (10: 00 - 12:00)
Location	T4-516
Content	Evolutionary computation is the study of biologically motivated computational paradigms which exert novel ideas and inspiration from natural evolution and adaptation. The applications of population-based heuristics in solving multiobjective optimization problems have been receiving a growing attention. To search for a family of Pareto optimal solutions based on nature-inspiring problem solving paradigms, Evolutionary Multiobjective Optimization Algorithms have been successfully exploited to solve optimization problems in which the fitness measures and even constraints are uncertain and changed over time. When encounter optimization problems with many objectives, nearly all designs perform poorly because of loss of selection pressure in fitness evaluation solely based upon Pareto optimality principle. In addition to various Many-Objective Evolutionary Algorithms proposed in the last few years, this talk will be devoted to address three issues to complete the real-world applications at hand- visualization, performance metrics and multi-criteria decision-making for the many-objective optimization. Visualization of population in a high-dimensional1 objective space throughout the evolution process presents an attractive feature that could be well exploited in designing many-objective evolutionary algorithms. A performance metric tailored specifically for many-objective optimization is also designed, preventing various artifacts of existing performance metrics violating Pareto optimality principle. A minimum Manhattan distance (MMD) approach to multiple criteria decision making in many-objective optimization problems is proposed. This procedure is equivalent to the knee selection described by a divide and conquer approach that involves iterations of pairwise comparisons.

9. Student Branch Name: IEEE National Tsing Hua University Student Branch

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.

10. <u>Student Branch Name: IEEE National Tsing Hua University ED Society (EDS)</u>

In this year, we held four 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: 2017/03/16

Venue: Room 217, Delta Building, National Tsing Hua University, Taiwan
Speaker: Prof. Feng Zhao (School of Engineering and Computer Science, Washington State University)
Talk Title: Progress in SiC Power Semiconductor Technology
Summary of Activities:
Silicon Carbide is a wide-bandgap material which is commonly used in power devices and MEMS recently. Compare with Si, SiC is more suitable for harsh environment such as high temperature, high pressure or corrosive chemicals. But the hardness and chemical inert properties of SiC is a challenge to fabricate a MEMS structure. For example, we use tilted RIE to etch substrate in order to fabricate a MEMS structure. There are some limitations when using this method to produce certain structure.
However, the limitation is broken by Professor Zhao by using PEC etching to control the etching profile. It's not only a new technique that we haven't seen before but also the first team proposing this method in the world. It has been extensively cited after published.
Another remarkable research we learn from the speech like the electrostatic actuation N-P-N resonator with frequency tunning is very convenience for the integrated systems. It' s very impressive that they overcome the difficulties of the frequency tunning technique which includes the accuracy of the mass control and alignment.
It's a very special experience to participate the speech because MEMS is an unfamiliar field for us. The speech benefits us a lot.

ii. Date: 2017/04/24

Venue: Room 919, Delta Building, National Tsing Hua University, Taiwan
Speaker: Prof. Saurabh Lodha (Department of Electrical Engineering, Indian Institute of Technology Bombay)
Talk Title: Gate stack and source-drain contact engineering in Ge and 2D MoS2 devices
Summary of Activities: Prof. Saurabh Lodha is dedicated to researches in CMOS, 2D materials and silicon photovoltaic cells. At the beginning, Prof. Lodha introduced the the development of FinFET devices, with the use of high-k material (i.e. HfO2,

HfAlO) as gate oxide. And he thought that high speed operation and low power loss would be the next main area of research in device. Besides, Prof. Lodha also did researches in material that can replace silicon, including 2D material and group IV material, germanium (Ge). Ge has small bandgap and high leaking current. Besides, it is difficult to achieve heavily doped n-type Ge. It's natural oxide GeO2 is soluble in water, which makes it not proper to be gate dielectric material. In recent years, it is reported that the oxide GeON can be a good dielectric material to be used in Ge device, which can help the development of Ge devices. The professor also talked about how to obtain a good ohmic contact in Ge devices. Since Ge has small bandgap, metals with low work function is recommended as the electrode materials. However, Prof. Lodha proposed that ZnO, which is a high-bandgap semiconductor, can be used as an inter-layer between Ge and the electrode metal, which can improve the contact quality. The last topic Prof. Lodha addressed was about 2D material, like Mos2 and WSe2. He used 2D materials to fabricate 2D TMD devices, which has a channel length less than 10nm. N-type MoS2 can be doped by silicon, and p-type MoS2 is fabricated by plasma process. Low-barrier schottky contact can be obtained by Au or Pd. Besides these advantages, 2D devices also suffer from unstable threshold voltage. The topics of this speech is quite unfamiliar for us, therefore we learned a lot from it.

iii. Date: 2017/08/09

Venue: Room 217, Delta Building, National Tsing Hua University, Taiwan
Speaker: Prof. Ichiro Omura (Department of Electrical Engineering, Kyushu Institute of Technology)
Talk Title: Fundamentals of Power Devices
Summary of Activities: At the beginning of the workshop, Professor Ichiro Omura introduced the history and the development of power device and power electronics circuit. After the introduction, Professor Ichiro Omura gave the short explanation of some semiconductor physics basics for participants who didn't know semiconductor physics very much. When Professor Ichiro Omura was teaching, I felt that he taught very clearly and carefully about band diagram, carriers in silicon, current continuity equation and impact ionization which is the most important phenomenon in the physics of power device. It's really helpful and useful for a novice. Not only the physics of semiconductor was brought by Professor Ichiro Omura, but also the foundation of power semiconductor device which is the core of design of power semiconductor device, like we care about the drift region doping, device size, how to keep high breakdown voltage and low on-resistance and so on. Professor Ichiro Omura also introduced some different power semiconductor device, traditional VDMOS, super junction MOSFET and IGBT. He spent some time on IGBT to introduce operation mechanism of IGBT, punch-through and non-punch-through IGBT and the technology of IGBT.

iv. Date: 2017/08/10

Venue: Room 217, Delta Building, National Tsing Hua University, Taiwan

Speaker: Prof. Leo Lorenz (IEEE Fellow, IEEE EDS Distinguished Lecturer, President, ECPE)

Talk Title: Power Electronic Device Development Trends – challenges in Application

Summary of Activities: Dr. Leo Lorenz gave us an excellent seminar in "Taiwan Semiconductor Workshop (TPS) 2017" which included not only wide-bandgap semiconductor devices but also the entire history and evolution of the semiconductor industry. Since my research mainly focus on the wide-bandgap semiconductor devices fabricated by gallium nitride (GaN) and related compounds, I already have some concept about power devices. However, Dr. Leo Lorenz talked about this issue from lots of aspects including energy efficiency, power density, reliability, cost, magnetics and 3-D integration that were hard to learn from text books. After the speech, he also gave me a lot of suggestions about my research and the future works. It' really a good experience to discuss about my work with such a great instructor in the field of semiconductor power devices.

11. <u>Student Branch Name: IEEE National Tsing Hua University IA Society (IAS)</u>

Topic	台達電馬達驅動器發展趨勢
Speaker	蕭偉成 資深課長 台達電桃園三廠
Time/Date	13:30-14:30, FRI., September 15, 2017
Location	Rm 104, EECS

Topic	電競筆電 Power 設計概述
Speaker	王柏翔 資深工程師 華碩電腦股份有限公司
Time/Date	14:20-16:00, FRI., September 22, 2018
Location	Rm 104, EECS

Topic	電源供應器市場與技術趨勢
Speaker	羅有綱 博士 光寶科技股份有限公司
Time/Date	14:20-16:00, FRI., September 29, 2017
Location	Rm 104, EECS

Topic	Micro inverter 應用於太陽能電廠系統的優勢與利基
Speaker	相理 副總 中貿國際能源股份有限公司
Time/Date	13:30-15:00, FRI., October 06, 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., October 13, 2017
Location	Rm 104, EECS

Topic	號稱五十年來最大電業市場改革的電業法，到底改了什麼？從法律人的觀點
Speaker	高銘志 副教授 國立清華大學科技法律研究所

Time/Date	13:30-15:00, FRI., October 20, 2017
Location	Rm 104, EECS

Topic	Analysis and protection of power systems against data attacks on state estimation
Speaker	蘇健翔 助理教授 國立中山大學電機系
Time/Date	14:20-16:00, FRI., October 27, 2017
Location	Rm 104, EECS

Topic	亞力電機-綠能業務
Speaker	方志行 博士亞力電機
Time/Date	13:30-15:00, FRI., November 03, 2017
Location	Rm 104, EECS

Topic	台灣離岸風力發電和海洋能的發展
Speaker	李坤彥 教授台灣大學海洋工科系
Time/Date	14:20-16:00, FRI., November 10, 2017
Location	Rm 104, EECS

Topic	再生能源併網技術發展概況
Speaker	游宏益 博士 配電處 配電處饋自工程課
Time/Date	13:30-15:00, FRI., November 17, 2017
Location	Rm 104, EECS

Topic	Motor and Driver Innovation Technology for Electric Vehicle Application
Speaker	蘇維德 博士 Delta EVSBG TIBU RD Head
Time/Date	13:30-15:00, FRI., December 08, 2017
Location	Rm 104, EECS

Topic	基於 IEC61850 之智慧電網控制
Speaker	鄧人豪 教授 國立中山大學電機系
Time/Date	13:30-15:00, FRI., December 15, 2017
Location	Rm 104, EECS

Topic	資料驅動節能技術與應用服務之未來發展與產業潛力
Speaker	蔡家緯 助理教授 南台科技大學 資訊工程系
Time/Date	13:30-15:00, FRI., December 29, 2017
Location	Rm 104, EECS

B.5 Affinity Group Activities

- Young Professional (YP)

  - **2017 IEEE Taipei Section Young Professionals Talk**

    IEEE Young Professionals of Taipei Section conducted a seminar on 24th January, 2017 at Room 106, Institute of Information Science, Academia Sinica, Taiwan, from 10:30 a.m. to 12 noon, followed by a lunch party with the speaker and members. The speaker was Prof. Po-Chun Huang. He is an assistant professor from Yuan Ze University since Year 2014. His research focus is on embedded systems, but he has

very good sense of drawing and painting. The talk title was "How to Compose Premium-quality Figures for Academic Publications." The purpose of this activity is to let graduate students and research assistants in Taiwan know the importance of figures and how to produce high quality figures in their reports and papers.

- **2017 IEEE Taipei Section Young Professionals Talk**

  IEEE Young Professionals of Taipei Section conducted a seminar on 15th August, 2017 at Room 106, Institute of Information Science, Academia Sinica, Taiwan, from 3:00 p.m. to 5:00 p.m, followed by a dinner party with the speaker and members. The speaker was Prof. Youjip Won. He is a professor from Hanyang University. His research focus is on Operating System, Storage System and Filesystem for new storage medium. He has lead the national consortium of five universities and three companies for developing an SSD controller for hyper scale high performance SSD. In his talk "Android IO stack optimization", The purpose of this activity is to have an in-depth introduction on Android IO stack, because storage system is always an important component in computing systems. In particular, Android is one of the most popular OS system on mobile platforms.

- **2017 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.

- Women In Engineering (WIE)

  Career Planning Workshop was organized. (on 11/29/2017) Most of the attendees were students. In the workshop the speaker shared her experiences in education, academic, and industry areas with the attendees. Then she also introduced IEEE WIE to the attendees and presented some past events and activities. And then she introduced an internship platform that can function as the bridge between the industry and the university. A video was played to show the achievement and demonstrate the workflow of the platform.

B.6 Awards & Recognition Activities

- Award constituted by the section
  - **Outstanding Chapter Award**
    Communications Society Taipei Chapter (COMM19)

  - **Outstanding Student Branch/Chapter Award**
    IEEE NCU Student Branch

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

- 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 CYCU Student Branch:
3. IEEE NCHU Student Branch: http://www.ieee.org.tw/chapters/index.php?web_class=45
4. SMC Society (SMCS) Student Branch Chapter at NCHU:
   http://www.ieee.org.tw/chapters/index.php?web_class=53
5. IEEE NCTU Student Branch: http://www.ieee.org.tw/chapters/index.php?web_class=36
6. CE Society (CES) Student Branch Chapter at NCTU:
   http://www.ieee.org.tw/chapters/index.php?web_class=46
7. ED Society (EDS) Student Branch Chapter at NCTU:
8. IEEE NCU Student Branch: http://ncuieee.blogspot.tw/
9. National Kaohsiung Marine University Industry Applications Society:
10. IEEE NSYSU Student Branch: http://vlsi.ee.nsysu.edu.tw/html/Student_Branch.htm
11. IEEE NTHU Student Branch: http://www.ieee.org.tw/chapters/index.php?web_class=44
12. ED Society (EDS) Student Branch Chapter at NTHU:
13. IA Society (IAS) Student Branch Chapter at NTHU:
14. PEL Society (PELS) Student Branch Chapter at NTHU:
    http://www.ieee.org.tw/chapters/index.php?web_class=51
15. IEEE NTU Student Branch: https://www.facebook.com/ieeentu.taipei/
16. IEEE NTUST Student Branch: http://studentbranch.csie.ntust.edu.tw/
17. SMC Society (SMCS) Student Branch Chapter at NTUST:
    http://studentbranch.csie.ntust.edu.tw/smc/
18. IEEE YZU Student Branch: http://ieeeyzusb.pixnet.net/blog
19. SMC Society (SMCS) Student Branch Chapter at YZU:
    http://www.ieee.org.tw/chapters/index.php?web_class=50
20. Antennas and Propagation Society (AP03):
    https://apstaipeichapter.wixsite.com/aps-taipei-chapter
21. Broadcast Technology Society (BT02):
    http://www.ieee.org.tw/chapters/index.php?web_class=5
22. Computer Society (C16): http://www.ieee.org.tw/chapters/index.php?web_class=6
23. Circuits and Systems Society (CAS04):
    http://www.ieee.org.tw/chapters/index.php?web_class=7

24. Consumer Electronics Society (CE08):
http://www.ieee.org.tw/chapters/index.php?web_class=8
25. Council on Electronic Design Automation Chapter (CEDA-44):
http://www.ieee.org.tw/chapters/index.php?web_class=34
26. Computational Intelligence Society (CIS11):
http://www.ieee.org.tw/chapters/index.php?web_class=9
27. Communications Society (COMM19):
http://www.ieee.org.tw/chapters/index.php?web_class=10
28. Components Packaging, and Manufacturing Technology Society (CPMT21):
http://www.ieee.org.tw/chapters/index.php?web_class=12
29. IEEE Council on RFID Taipei Chapter (CRFID741):
http://www.ieee.org.tw/chapters/crfid741
30. Control Systems Society (CS23):
http://www.ieee.org.tw/chapters/index.php?web_class=13
31. Education Society (E25): http://www.ieee.org.tw/chapters/index.php?web_class=14
32. Electron Devices Society (ED15):
http://www.ieee.org.tw/chapters/index.php?web_class=15
33. Engineering in Medicine and Biology Society (EMB18):
http://www.ieee.org.tw/chapters/index.php?web_class=16
34. Electromagnetic Compatibility Society (EMC27):
http://www.ieee.org.tw/chapters/index.php?web_class=17
35. Geoscience and Remote Sensing Society (GRS29):
http://www.ieee.org.tw/chapters/index.php?web_class=18
36. Industry Applications Society (IA34):
http://www.ieee.org.tw/chapters/index.php?web_class=48
37. Industrial Electronics Society (IE13):
http://www.ieee.org.tw/chapters/index.php?web_class=19
38. Instrumentation and Measurement Society (IM09):
http://www.ieee.org.tw/chapters/index.php?web_class=47
39. Information Theory Society (IT12):
http://www.ieee.org.tw/chapters/index.php?web_class=21
40. Magnetics Society (MAG33): http://www.ieee.org.tw/chapters/index.php?web_class=23
41. Microwave Theory and Techniques Society (MTT17):
http://www.ieee.org.tw/chapters/index.php?web_class=24
42. Oceanic Engineering Society (OE22):
http://www.ieee.org.tw/chapters/index.php?web_class=25
43. Power and Energy Society (PE31):
http://www.ieee.org.tw/chapters/index.php?web_class=26
44. Power Electronics Society (PEL35):
http://www.ieee.org.tw/chapters/index.php?web_class=20
45. Photonics Society (PHO36):
http://www.ieee.org.tw/chapters/index.php?web_class=22

46. Product Safety Engineering Society (PSE43): http://www.ieee.org.tw/chapters/index.php?web_class=27
47. Reliability Society (R07): http://www.ieee.org.tw/chapters/index.php?web_class=28
48. Robotics and Automation Society (RA24): http://www.ieee.org.tw/chapters/index.php?web_class=29
49. Sensors Council (SEN39): http://www.ieee.org.tw/chapters/index.php?web_class=54
50. Systems, Man, and Cybernetics (SMC28): http://www.ieee.org.tw/chapters/index.php?web_class=30
51. Systems, Man, and Cybernetics Society-Taichung Chapter (SMC28): http://www.ieee.org.tw/chapters/index.php?web_class=41
52. Signal Processing Society (SP01): http://www.ieee.org.tw/chapters/index.php?web_class=31
53. Solid-State Circuits Society (SSC37): http://www.ieee.org.tw/chapters/index.php?web_class=32
54. Vehicular Technology Society (VT06): http://www.ieee.org.tw/chapters/index.php?web_class=33
55. Women In Engineering (WIE): http://www.ieee.org.tw/chapters/index.php?web_class=34
56. Young Professionals (YP): http://www.ieee.org.tw/chapters/index.php?web_class=299

- 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.

B.8 Industry Relations

- Activities for/with industrial members

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

Each year, the IEEE AP-S Taipei Chapter (AP03) will involve in inviting the industry to join the local conference "Electromagnetics Workshop--A Bridge to the Future", and making sure that the industrial members and APS members are actively communicating with and getting to know each other in a yearly basis.

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

Activities with leading EDA-related companies in 2017:

No	Event	Date	Venue
1	VLSI Design/CAD Symposium: Keynotes from TSMC, Synopsys, ARM	August 1-4, 2017	Howard Beach Resort, Kenting
2	EDA Summer Camp: Company Touring: TSMC, Synopsys, Cadence	August 22-24, 2017	National Taiwan University

3	Workshop on Electronic Design Automation: Keynote/Invited talks from Himax, RealTek, Cadence, Synopsys	December 2-3, 2017	Fushin Hotel, Tainan

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

In 2017, Chapter COM19 had 3 activities involving industrial members. These activities are listed as follows:

i. 2017 National Symposium on Telecommunication from January 21 to 22, 2017

This symposium was sponsored by the following 9 industry partners:
ASUSTEK COMPUTER INC.
TeraSoft, Inc.
MediaTek Inc
Electronic Systems Research Division, National Chung-Shan Institute Science & Technology
Haley Technology Co., LTD.
Keysight Technologies
Industrial Technology Research Institute
Universal Scientific Industrial (Shanghai) Co., Ltd.
Chunghwa Telecom Laboratories
In addition, there were 4 invited industrial talks in this symposium:

(1) "To Beyond 4G Mobile Communication and 5G" by Dr. Pand-An Ting, Industrial Technology Research Institute
(2) "NB-IoT for Cellular M2M" by Dr.Chiung-Jang Chen, Chunghwa Telecom Laboratories
(3) "5G Massive MIMO design and test solution+D44" by Dr. Philip Chang, Keysight Technologies
(4) "5G 及車用雷達毫米波陣列天線模組設計(Design of mmWave Antenna Array for 5G and Automotive Radars)" by Dr. Milton Lien, National Instruments

ii. 2017 Spring Workshop on Information Theory and Communications from January 22 to 23, 2017

This symposium was also sponsored by the following 9 industry partners:
ASUSTEK COMPUTER INC.
TeraSoft, Inc.
MediaTek Inc
National Chung-Shan Institute Science & Technology
Haley Technology Co., LTD.
Keysight Technologies
Industrial Technology Research Institute

Universal Scientific Industrial (Shanghai) Co., Ltd.
Chunghwa Telecom Laboratories

iii. 2017 Summer School on Information Theory, Communication Theory and Technologies from August 1 to 4, 2017

This summer school was sponsored by the following 3 industry partners:
Information Communication Research Division, National Chung-Shan Institute Science & Technology
Melin White-Stone Chemicals Co., LTD.
National Instruments
In addition, there were 3 luncheon special sessions for industry partners to present their works, including those by National Chung-Shan Institute Science & Technology and National Instruments, respectively.
Moreover, we also had 3 industrial members join our industrial panel discussion. They are listed below:
Dr. I-Chin Huang, Information Communication Research Division, National Chung-Shan Institute Science & Technology
Dr. Sheng-Lin Chou, Information and Communications Research Laboratories, Industrial Technology Research Institute
Dr. Hui-Man Chang, MediaTek

- **Chapter Name: Council of RFID Taipei Chapter (CRFID741)**

Since October 2016, the chapter chair of CRFID (prof. Chow-Yen-Desmond Sim) has been a consultant of the SAG (Securitag Assemble Group), which is one of the largest RFID tag manufacturer in Central Taiwan. Each year, SAG will provide several internships for student members of CRFID and Feng Chia University. SAG will also support students in Feng Chia University to join as student members of CRFID.

- **Chapter Name: Instrumentation and Measurement Society Taipei Chapter (IM09)**

IEEE IMS Workshop – From Measurement to Decision Making
Speaker:

- **Dr. Salvatore La Malfa** (Application Software Manager , STMicroelectronics, Italy) /Measurements and Metrology in the consumer industry
- **Mr. Yu-Chieh Wu** (Deputy General Manager, Yinsh Precision Industrial Corporation, Taiwan R.O.C.) /盈錫轉型升級及導入智慧製造經驗分享
- **Prof. Salvatore Baglio** (VP Education of IEEE IMS / University of) /To Measure is to Know
- **Mr. Tension Wu** (Chief Technology Officer, Aerospace Industrial Development Corporation, Taiwan R.O.C.) /從量測到決策 – 航太智慧化製造、智慧化管理

IEEE IMS Workshop was held on June 21, 2017. The IEEE IMS Taipei Section Chapter vice chair gave a keynote opening speech and provided technical assistance in coordinating the workshop. Four outstanding experts in the field were invited to the workshop, including Dr.

Salvatore La Malfa, Application Software Manager from STMicroelectronics, Italy, Mr. Yu-Chieh Wu, Deputy General Manager from Yinsh Precision Industrial Corporation, Taiwan, Prof. Salvatore Baglio from University of Catania, Italy / VP Education of IEEE IMS, and Mr. Tension Wu, Chief Technology Officer from Aerospace Industrial Development Corporation, Taiwan.

Meeting Keywords: Instrumentation and measurement, industry

Guest Attendance: 50-60

IEEE Member Attendance: 20

Asia-Taipei

- **Chapter Name: Photonics Society Taipei Chapter (PHO36)**

(1) Touch Taiwan Exhibition

(2) Inviting Prof. of Osaka University to give a talk in Epistar

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

In IEEE DSC 2017, we organized an “Experience and Practice” track for industrial people. This new track attracted many industrial people to present their works, and give the demos.

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

The 2017 IEEE International Conference on Consumer Electronics– Taiwan was held from June 12-14 at National Taipei University of Technology, Taipei city, 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 250 participants from 13 various countries. In particular, the Young Professionals event was held in conjunction with the reception as follows:

Speaker: Prof. Jing-Ming Guo, Department of Electrical Engineering, National Taiwna Univeraity of Science and Technology, Taipei city, Taiwan

Title: Can High-Level Deep Learning Features Present the Best Performance on Image Retrieval without Low-Level Features?

- **YP**

2017 IEEE International Conference on Consumer Electronics- Taiwan

The 2017 IEEE International Conference on Consumer Electronics– Taiwan was held from June 12-14 at National Taipei University of Technology, Taipei city, 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 250 participants from 13 various countries. In particular, the Young Professionals event was held in conjunction with the reception as follows:

Speaker: Prof. Jing-Ming Guo, Department of Electrical Engineering, National Taiwna Univeraity of Science and Technology, Taipei city, Taiwan

Title: Can High-Level Deep Learning Features Present the Best Performance on Image Retrieval without Low-Level Features?

Abstract: With the advances of the artificial intelligence, content-based image retrieval can be formed as multi-level structure with low- and high-level features involved. In this talk, the functions and extended advantages of the digital halftoning will be introduced. Subsequently, a low complexity compression scheme with the aid of digital halftoning is later presented. As most of the images are recorded in compressed domain, the compressed domain features are thus intuitively adopted to form the low-level features for the image retrieval. Conversely, features generated by deep learning can better characterize human perception through various operations such as convolution and pooling, and thus achieve effective retrieval performance. An interesting question is that whether the high-level feature can present better performance than that of the fusion structure from low- and high-level features simultaneously. At the end of this talk, several configurations on the feature selections will be demonstrated with practical examples.

B.9 Humanitarian Technology Activities

- N/A

B.10 Community Activities

- IEEE Social activities (Family day, IEEE day, Engineers Week)
  - **Chapter Name: Magnetics Society Taipei Chapter (MAG33)**
    - IEEE Taiwan chapter dinner
    - Time: 6/26/2017
    - Place: National Chung Hsing University, Taichung

PART C - OTHERS

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 2017 President, Ms Karen Bartleson and Staff of IEEE Asia-Pacific Limited, including Leo Hwa Chiang – Director, Asia Business Development, Ira Tan – Regional Sales Manager, Patrick Leung – International Area Manager, visited Taipei in July 2017. Section hosted a meeting with them at Taipei Shangri-La's Far Eastern Plaza Hotel on July 17th, 2017. The attendance was 9 including Section Executives.

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

➢ Sister Society: TAMT (Taiwan Association of Magnetic Technology)

- We held 2017 Taiwan Association Magnetic Technology Annual Meeting for magnetism and summer school for on June 26th-28th, 2017. 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. And arranged for dinner with the IEEE members of the Taiwan region and exchange talks. We invited several IEEE fellow as our invited speakers in the meeting.
  The invited speakers are as fallow:
  (1) Prof. Takao Suzuki (College of Optical Sciences, University of Arizona in Tucson, AZ)
  (2) Prof. Xiaofeng Jin(Department of Physics, Fudan University, China)
  (3) Prof. Eiji Saitoh(Tohoku University, Sendai, Japan**)**
  (4) Prof. Koki Takanashi (Tohoku University, Sendai, Japan**)**

- We held two IEEE Distinguished Lectures, last year (2017). In these two lectures, we invited Professor Xiaofeng Jin and Professor Eiji Saitoh 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 two activities.
  (1) The first one is 2018 Taiwan Association Magnetic Technology Annual Meeting. The activity will be held in Taichung, Taiwan from July 09 to 11, 2018. We will also invite some IEEE fellows or DLs to come.

(2) The second one is IEEE Distinguished Lecture 2018. We will invite 2018 IEEE Distinguished Lecturer to give the talks.

C.3 Collaboration with other IEEE Sections

- N/A

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

- N/A

C.5 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 attractive 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.

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

- 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.

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**

We will plan out Membership Promotion Award for encouraging Chapter which has devoted most effort in increasing their membership.

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.

- **YP**

We will be continuously conducting activities for the young professionals to highlight the benefits of joining the IEEE and its societies. The YP affinity group of IEEE Taipei Session will support students and recent graduates and women to become members by participating at 2018 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 YP Group for 2018 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 2018 IEEE International Conference on Consumer Electronics-Taiwan.

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

  - We have completed all the activities that he has been planned, which includes inviting two distinguished lecturers from overseas (Dr. Rao from USA and Dr. Paolo from Italy).
  - We have also successfully co-sponsor the following IEEE Conference: IEEE 2017 Wireless Power Transfer Conference (WPTC 2017), in which 51 IEEE members have joint this event, and the local conference (2017 Electromagnetics Workshop- A bridge to the future, in which 45 IEEE members were involved.
  - For the year 2018, we have planned two invited talks (including 1 distinguished lecturer talk), and support at least two local conferences and technical meetings.

As the number of active members in AP03 is currently standing at 96, we hope to improve the number to over 100 by the end of Dec 2018.

- **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
- IEEE COMP Taipei Chapter Distinguished Young Scholar Award will be held to encourage young scholars members.

➢ **Chapter Name: Circuits and Systems Society Taipei Chapter (CAS04)**

- Distinguished Lecturer: Plan to invite a researcher to give a technical talk for group members.
- Continue to Sponsored several technical and educational activities.

  1. 2018 SEMBA Conference (Symposium on Engineering, Medicine, and Biology Applications).

  2. 2018 VLSI-DAT Conference (International Symposium on VLSI Design, Automation and Test).

  3. 2018 TJCAS Conference (Taiwan and Japan Conference on Circuits and Systems).

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

- CIS Taipei Chapter hosts three invited talks delivered by Prof. Vincenzo Piuri and Prof. Jun Wang.
- CIS Taipei Chapter co-organizes an international conference ARIS 2017.
- CIS Taipei Chapter co-organizes a national conference NCSR 2017.
- CIS Taipei Chapter helps host two international conferences, iFUZZY 2017 and CACS 2017.
- CIS Taipei Chapter helps host two national conferences, NSSSE 2017 and NCTTA 2017.
- CIS Taipei Chapter plans to invite the president of CIS to visit Taiwan in 2018.
- CIS will continue to help host the above conferences in 2018.

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

- Workshops on Information Theory and Communications (a workshop with invited academic and industry speakers) will be held biannually, one in spring and the other in fall.
- National Symposium on Telecommunications (a local symposium accepting paper submissions) 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.

- Graduate Student Seminar on Information Theory and Communications will be held every year to benefit Ph.D. student members.
- Information Theory Society Taipei Chapter and Communications Society Taipei/Tainan Chapter Young Research Best Paper Award will be held every year.

➢ **Chapter Name: Council of RFID Taipei Chapter (CRFID741)**

The CRFID Taipei Chapter was successfully established on the 26th October 2017, it will conduct the following events in 2018:

- CRFID 1st meeting with invited Distinguished Lecturer, Feng Chia University, Taichung, Taiwan, Jan 26, 2018.
- Industrial Talk and Meeting on RFID Tag Design, Taichung, Taiwan, Jun 15, 2018
- Industrial Tour to SAG, Taichung, Taiwan, July-Aug, 2018

  Academia Talk on Antenna Designs, Taipei, Taiwan, Dec. 15, 2018

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

CS Taipei Chapter helps host the following conferences:

- National Symposium on System Science and Engineering (NSSSE 2017), National Taiwan Normal University, Taipei, Taiwan, May 19-20, 2017.
- 2017 International Automatic Control Conference (CACS 2017), Pingtung, Taiwan, Nov. 12-15, 2017
- 2017 International Conference on Fuzzy Theory and Its Applications (iFUZZY 2017), Pingtung, Taiwan, Nov. 12-15, 2017

➢ **Chapter Name: Components, Packaging and Manufacturing Technology Society Taipei Chapter (CPMT21)**

- 2018 International Microsystems, Packaging, Assembly and Circuits Technology Conference (IMPACT) will be held at Taipei Nangang Exhibition Hall during Oct. 24 to 26, 2018.

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

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 2017. Several members have been promoted to the senior member through the assistance of the chapter chair.

- In 2017, more than 15 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 technical co-sponsorship to the international conference, IEEE EDSSC, held in Hsinchu from October 18-20, 2017, 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 technologies 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 a successful Distinguished Lecturer Program. In the talks, we hosted a DLP IEEE.tv live streams/TV broadcast which is the First IEEE Webinar Series in the history of GRSS. Our Chapter also hosted the Chapter 2017 Best Thesis Award, and seven Technical Activities in 2017.

➢ **Chapter Name: Instrumentation and Measurement Society Taipei Chapter (IM09)**

To carry out these goals, the chapter has set up the following plans for year 2018.

- To hold at least 10 seminars, talks, or short courses.
- To provide technical sponsorship to at least 2 international activities.
- To strengthen cross-chapter activities by joint visits or activities.
- To promote and attract as many local and international attention as possible to attend 2018 International Instrumentation and Measurement Technology Conference (I^2MTC).

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

Forthcoming events in 2018 include:

- The 2018 Spring Information Theory and Communications Workshop will be held at Tamsui, New Taipei City, fromom Jan. 26 to Jan. 27.
- The 2018 Summer School on Information Theory and Communications will be held at National Taiwan University, Taipei, in August.

- The 2017 Fall Information Theory and Communications Workshop will be held at Tai-Chung in August.

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

- 2018 IEEE Distinguished Lecturer Progress. This year there are totally four distinguished lecturers:
  (1) Prof. YoshiChika Otani
  (2) Prof. Mitsuteru Inoue
  (3) Prof. Alison B. Flatau
  (4) Prof. Can-Ming Hu

  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 Electronics Society Taipei Chapter (PEL35)**

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

- several 2-3 days short courses given by international distinguished scholars
- 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 2018 (OPTIC 2018), 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 2018” festival: Optoelectronic & aerospace pavilion 2018 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 2018 at National Central and Chiao Tung University. The activity may benefit to student members.

- TVC annual Symposium 2018 will be held on Oct. 27 at National Cheng Chung University. The activity may benefit to student members.
- We will enrich the content of IPS website.

➢ **Chapter Name: Robotics and Automation Society Taipei Chapter (RA24)**

- Robotics and Automation Society at IEEE Taipei Section has completed several seminar activities planned in the year 2017, which includes organizing TAIFE 2017.

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

IEEE Taipei Section (RL07) in 2017 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.

- We will sponsor student member to International competition.
- We will sponsor student member to 2018 IEEE ISICAS conference in Sep 3-4.
- We will sponsor student member to 2018 IEEE sensor conference in Oct 28-31.
- Plan to invite a researcher to give a technical talk for group members.

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

- SMC Taipei Chapter will continue to help sponsor IEEE Int. Conf. on System Science and Engineering (ICSSE 2018), National Taipei University, Taipei, June 28-30, 2018.
- SMC Taipei Chapter will continue to help ponsor National Symp. on System Science and Engineering (NSSSE 2018), Taipei, Taiwan, June 28-30, 2018.
- SMC Taipei Chapter will contribute to the organization of the FIRA Robot Competitions to be held in Kaohsiung, Aug. 2018.

➢ **Chapter Name: Systems, Man, and Cybernetics Society Taichung Chapter (SMC28-TC)**

- IEEE SMC Taichung Chapter helped organize a special session for 2017 IEEE Int. Conf. on Systems, Man, and Cybernetics (IEEE SMC2017), Banff, Canada, Oct. 5-8, 2017. Prof. Tsai, Taichung Chapter Chair (SMC 28), served as a special session chair in SMC 2017, an d also attended the BOG meeting held in Banff, Canada, Oct. 5, 2017.
- IEEE SMC Taichung Chapter hosted the 2017 international conference on Advanced Robotics and Intelligent Systems, Taipei Nangang Exhibition Center, over September 6-

8, 2017. Prof. C. C. Tsai, Taichung Chapter Chair (SMC 28), served as the General Chair.

- IEEE SMC Taichung Chapter hosted the 2017 national conference on Advanced Robotics (Chinese), Taipei Nangang Exhibition Center, September 6-8, 2017. Prof. C. C. Tsai, Taichung Chapter Chair (SMC 28,) served as the General Chair.
- IEEE SMC Taichung Chapter helped host the 2017 National Conference on System Science and Engineering (ICSSE 2017), HCMC University of Technology and Education, Ho Chi Minh City, Vietnam, July 21-23, 2017. Prof. C. C. Tsai, Taichung Chapter Chair (SMC 28), served as the special session chair.

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

- We will be continuously conducting activities for the young professionals to highlight the benefits of joining the IEEE and its societies. The IEEE Taipei Session will support researchers to become members by participating at 2018 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 SP researcher for 2018 will be to retain her existing members and increase membership by recruiting new members.

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

- Cosponsor 2017 VLSI/CAD Symposium and Annual SSCS Taiwan member meeting.
- Cosponsor 2017 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 2017 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: 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 2018.
- We will host the annual IEEE Vehicular Technology Society Asia Pacific Wireless Communications Symposium (VTS APWCS) in Hsinchu, Taiwan, on August 22 to 24, 2018. This symposium is jointly organized by VTS APWCS Taiwan, Japan, Korea, and Singapore Chapters every year.

➢ **Student Branch Name: IEEE National Central University Student Branch**

We will continue to organize events for our student members: lectures, laboratory visit, sharing sessions, company visit, etc. And let more students know more about IEEE and join IEEE.

- **Student Branch Name: IEEE National Chiao Tung University Student Branch**

  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: IEEE National Kaohsiung Marine University IA Society (IAS)**

  The NKMU IAS Student Branch will keep inviting more lecturers from domestic and foreign academia and industry to give talks in NKMU 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: IEEE National Sun Yat-sen University Student Branch**

  NSYSU student branch will invite Speakers with academic achievement and advanced technology in the industry among six groups in EE department . Bsides, we also Committed to providing students members industrical internship options and offer scholarship for students and members .

- **Student Branch Name: IEEE National Taiwan University Student Branch**

  - 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 keep using facebook fanpage to share the newest message of some contest and try to let more students know about us and how to get the resources from IEEE
  - Here is our face book fanpage(https://www.facebook.com/ieeentu.taipei/)

- **Student Branch Name: IEEE National Tsing Hua University Student Branch**

  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: IEEE National Tsing Hua University IA Society (IAS)**

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

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

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 increase the number of AP-S membership by visiting a few universities in Taiwan that have active AP research team/group.
  - I will continue to maintain the AP-S Taipei Chapter website that has been developed by my pre-successor.
  - Me and my newly elected AP-S officers will separately attending some of the major AP related conferences, such as APS-URSI 2018, APCAP 2018, and ISAP 2018, as it is a good way to meet up with most of the AP-S members from Taipei Chapter see) and their post-graduate student.
  - We will be showing our intention to host the ISAP 2021 during the ISC meeting in USAP 2018 (in Bushan).

- **Chapter Name: Broadcast Technology Society Taipei Chapter (BT02)**
  - Cooperate with the "IEEE International Elite School" through joint activities. Funded by the Taipei Tech, ministry of science and technology and ministry of education, the center promotes digital convergence curriculum and course materials development. Participants are mostly faculty members in the academic and industrial communities.

- **Chapter Name: Computer Society (C16)**
  - New member recruitment
  - Collaboration with local societies or affiliations, such as CISA, Academia Sinica, NTU, etc.

- **Chapter Name: Circuits and Systems Society Taipei Chapter (CAS04)**
  - We would like to invite a DLP speaker to give lectures at the NTHU in 2018. 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, 3 workshops/short course and 2 member meetings. The targeted talent incubation activity will include Taiwan EDA summer camp 2018. In 2018, we will also try to collaborate with Chapters in Region 10 to promote EDA together.

➢ **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. As such, in 2018, we will continue to help host the conferences technically sponsored by CIS in 2017.
- CIS Taipei Chapter is planning to invite the president of CIS to visit Taiwan in 2018.
- 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)**

- 2018 National Symposium on Telecommunication (NST) will be held from January 25 to 26, 2018 around the Tamsui area in Taipei, Taiwan.
- 2018 Spring Workshop on Information Theory and Communications will be held from January 26 to 27, 2018 (co-located with NST) around the Tamsui area in Taipei, Taiwan.

- 2018 Fall Workshop on Information Theory and Communications will be hosted by National Chung-Hsing University in Taichung, Taiwan from August 16-17, 2018.
- 2018 ITCOM Graduate Student Seminar will be held in August (co-located with the Fall ITCOM Workshop) in Taichung, Taiwan.
- 2018 Summer school on Information Theory, Communication Theory and Technologies will be held around August in Taipei, Taiwan, in collaboration with the Information Theory Society Summer School.
- 2018 Information Theory Society Taipei Chapter and Communications Society Taipei/Tainan Chapter Young Research Best Paper Award will be called in February and the winners will be announced in June.
- Currently planned Distinguished Lectures include those by Tony Quek in April, and by Marco Di Renzo in June/July 2018.
- Currently planned Professional Development Panels at NST in January (by Profs. Zhi Ding, Victor Leung, and Moe Win).
- Currently planned Professional Development Panel at WOCC 2018 in Hualien Taiwan. Panelists pending.

➢ **Chapter Name: Components, Packaging, and Manufacturing Technology Society Taipei Chapter (CPMT21)**

- To boost up the membership of CPMT Taipei Chapter.
- To keep on collaborating with TPCA and ITRI to organize the conferences in the field of IC packaging, assembly and PCB.

➢ **Chapter Name: Council of RFID Taipei Chapter (CRFID741)**

Our main goal in year 2018 is to promote and recruit more faculty and students to join the CRFID741. Several events will be hosted, such as RFID industrial tour, meetings and lectures based on RFID related topics (such as transponder and tag design). We will also seek further opportunity to host or join local conferences or events that may promote our visibility to the public, as well as the industry in Taiwan.

➢ **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 2018, several major tasks have been planned as below.

- Help of the local society to seek for IEEE EDS Co-sponsorship in conferences.
- The chapter chair and other members will organize the IEEE Silicon Nanoelectronics Workshop in which Prof. Steve Chung will serve as the General Chair.
- In the past 7 years, an international symposium, eMDC, via the help of the chapter has acquired the EDS technical co-sponsorship. Special assistance will be provided in 2018.
- 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 2018.

➢ **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)**

Taipei Chapter of GRS29 will plan to host 2018 IEEE GRSS Taipei Chapter Best Thesis Award in conjunction with IEEE GRSS Regional Distinguished Lecturer Programs across the Asia region. This plan will increase the number of IEEE GRSS memberships, develop the professional and educational activities, and enhance the engagement and commitment of the local scientific and commercial communities in the Asian areas (Taiwan, Japan and Malaysia). GRS29 will also continue host the IEEE GRS-S Taipei Chapter Best Thesis Award each 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: Instrumentation and Measurement Society Taipei Chapter (IM09)**

Since 2009, the I&M Society Taipei Section Chapter has continuously followed the steps and reached the goals that we set up. In 2017, we successfully achieved one of the significant goals to obtain the right to host the significant event – IMS Education Workshop in Taiwan. In the past two years, the local working group has dedicated to organize and prepare for this important event. Marching to our eighth year of establishment, we are not satisfied with what we have made, but need to be much stronger and have made the following goals and plans,

- To continue adding value to existing members and explore the growth of new members.
- To continuously provide local academia and research circles the access to the world's largest research community, and vice versa help to disseminate the research results to the world.
- To enhance the influence of the chapter in relevant research community.
- To participate in relevant international and domestic activities such as conferences and exhibitions to absorb the latest research development, to build up chapter publicity, and to recruit more members joining the chapter.
- To serve the research communities related to instrument technology by introducing the latest frontier research progress through organizing seminars, talks, and courses.

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

- Promote international visibility by hosting international summer or winter schools.
- 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-added-design. The technical session includes oral presentation and invited paper presentation.

- **Chapter Name: Power Electronics Society Taipei Chapter (PEL35)**
  - Planned Activity 1: Organizing short courses with latest research topics
    The short courses will provide the latest research topics given by invited worldwide recognized researchers. There will be 6 hours per day, 2-3 days per each course.
  - Planned Activity 2: Organizing international distinguished lectures
    By inviting distinguished lectures from different countries, the members can be benefited in different aspects.
  - Planned Activity 3: Organizing Young Professional (YP) seminars
    This YP seminar provide a great chance for young researchers to share their research with other YP or Professors. Suggestions can be provided from the audiences to improve the YP's research.

- **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: Robotics and Automation Society Taipei Chapter (RA24)**

It is found that some of our RA student members have moved to US, Europe and other counties to pursue PhD or master degrees due to the recent boom of robotics industry such as drone, self-driving cars and automated driving. Our student member number decreases accordingly. We would plan to promote our society by holding more invited lectures, keynote speeches, and seminars and encourage industry partners to join RA24.

➢ **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 Taipei Chapter (SMC28-TC)**

- Goal:
  - Continue to promote IEEE SMC visibility.
  - Recruit more faculty and students to join IEEE SMC Society.
- Future Plans:
  - Continue to expand faculty and students membership in IEEE SMC Society.
  - Host more activities to make faculty and students understand the advantages of becoming members of 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: Signal Processing Society Taipei Chapter (SP01)**

- Continue to recruit members and student members from academia and industries through technical and educational activities (conferences, seminars, and short courses).
- Cooperate with CE chapter to prepare an IEEE International conference.

➢ **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 Chung Yuan Christian University Student Branch**

- We will encourage more students to join IEEE.
- Nontechnical meeting in March 2018.
- Technical discussion meeting in June 2018.

➢ **Student Branch Name: IEEE National Central University Student Branch**

The table below shows our future plans.

Date	Event	Content
2018/2/7	**Orientation Party**	Introduction of IEEE Student Branch in NCU
2018/3/21	**Student Presentation 1**	Discussing
2018/4/11	**Student Presentation 2**	Discussing
2018/4/25	**Student Presentation 3**	Discussing
2017/5/8	**Institution visit**	Discussing
2017/5/23	**Student Presentation 4**	Discussing
2017/6/6	**Final Party**	Giving award to well-performed students

- Encourage more students to join IEEE.
- Encourage members to comprehend more knowledge in electronic, computer science, etc. through discussion and participate in all kinds of student activities.

➢ **Student Branch Name: IEEE National Chiao Tung University Student Branch**

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 National Chung Hsing University SMC Society (SMCS)**

- More student members are encouraged to attend 2018 International conference on systems science and engineering held in July 2018.
- More student members are encouraged to attend 2018 International conference on Advanced Robotics and Intelligent Systems held at Taipei Nangang Exhibition Center, Taipei, Taiwan, in August 2018.

➢ **Student Branch Name: IEEE National Kaohsiung Marine University IA Society (IAS)**

We will encourage more students to join IEEE in 2018. To achieve this, we will enhance in promoting IEEE and explaining for the benefits of joining IEEE. We also encourage and arrange more student members to be as exchange students with different universities worldwide and to visit the student branches in the university this year.

- **Student Branch Name: IEEE National Sun Yat-sen University Student Branch**

  NSYSU student branch will regularly organize speeches about graduate student research to attractive new members. On the other way, holding workshop about integration software LabView of National Instruments can promote student willingness in join branch to learn paid course for free.

- **Student Branch Name: IEEE National Taiwan University Student Branch**

  - We keep using facebook fanpage to share the newest message of some contest and try to let more students know about us and how to get the resources from IEEE
  - Here is our face book fanpage(https://www.facebook.com/ieeentu.taipei/)

- **Student Branch Name: IEEE National Taiwan University of Science and Technology Student Branch**

  Three talks of the IEEE SMC Student Branch Chapter at NTUST will be held in 2018

- **Student Branch Name: IEEE National Tsing Hua University Student Branch**

  More nontechnical and professional lectures and meetings will be held in 2018.

- **Student Branch Name: IEEE Yuan Ze University Student Branch**

  - Invite more students to join us.
  - Organize general assembly twice a year.
  - Co-organize seminars and conferences to let members know the implementation of science on industry.

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

- **Taipei Section**

  Develop an incentive program for corporations to join IEEE as “Corporate Member” for IEEE Sections Congress.

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

  - Hold IEEE initiated training courses for industry members to increase membership from the industry.
  - Local IEEE helps match the interests of industry and academia, and initiate industry research projects.

- **Chapter Name: Council of RFID Taipei Chapter (CRFID741)**

The IEEE should have think of developing group industrial memberships. Any industry that joint this membership will be allowed to have all or a certain number of their employees to become the IEEE members.

- **Chapter Name: Signal Processing Society Taipei Chapter (SP01)**
  Organize and host Distinguished Lectures workshops in Taipei. Organize workshops to promote and recruit new members to join IEEE SP.

- **YP**
  - Any community fan page is established to share some latest news in semiconductor devices.
  - Promoting of new members through workshops/seminars.

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

- N/A