IEEE Taipei Section

Annual Report 2013

Prepared by

Cheng-Yuan Chang

Secretary (2013/2014)

Tsu-Tian Lee

Chair (2013/2014)

Suggested Section Report Format

PART A - SECTION SUMMARY

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

- Section Executive Committee Member List

  Section Officer (2013-2014)

  Chair

  Prof. Tsu-Tian Lee (Chung Yuan Christian University)

  Email: ttlee@cycu.edu.tw

  Vice Chair

  Prof. Ying-Yi Hong (Chung Yuan Christian University)

  Email: yyhong@dec.ee.cycu.edu.tw

  Prof. Shun-Feng Su (National Taiwan University of Science and Technology)

  Email: sfsu@mail.ntust.edu.tw

  Secretary

  Prof. Cheng-Yuan Chang (Chung Yuan Christian University)

  Email: ccy@cycu.edu.tw

  Treasurer

  Prof. Shyue-Kung Lu (National Taiwan University of Science and Technology)

  Email: sklu@ee.ntust.edu.tw

  Membership Development (Industry)

  Prof. Yi-Shuo Huang (Industrial Technology Research Institute)

  Email: yishuang@itri.org.tw

  Membership Development (Academia)

  Prof. Fan-Ren Chang (National Taiwan University)

  Email: frchang@cc.ee.ntu.edu.tw

  Student Activities

  Prof. Shih-Hsu Huang (Chung Yuan Christian University)

  Email: shhuang@cycu.edu.tw

  Educational Activities

  Prof. Ming-Kwei Lee (Chung Yuan Christian University)

  Email: mklee@cycu.edu.tw

Industrial Activities

Prof. Jin-Shi Yang (Taiwan Power Research Institute)

Email: u356461@taipower.com.tw

Award and Recognition

Prof. Rong-Jong Wai (Yuan Ze University)

Email: rjwai@saturn.yzu.edu.tw

Electronic Communications

Prof. Yu-Kuen Lai (Chung Yuan Christian University)

Email: ylai@cycu.edu.tw

- Section Highlights

  - ➢ All members were increasing especially Graduate Student Member in 2013. All kinds of members are dedicated to be recruited.
  - ➢ Sponsor more national and international conferences.
  - ➢ Create Taipei, National Tshing Hua University IAS Chapter.
  - ➢ To encourage the intention of member applications, IEEE Taipei Section subsidized students to take part in conferences overseas, and there are 27 students who had been benefited from 31 applications in 2013.

- Major Events (International, National)

  - ➢ Sponsor

Category	Meeting	Date
Administrative	Section Executive Committee Meeting	2013.03.12 2013.03.28 2013.10.29
	Taipei Section 2013 Regular Meeting	2013.01.24 2013.07.15 2013.12.05

  - ➢ **Co-sponsor**

Category	Meeting	Date
Technical (Advertisement)	The 17th IEEE International Symposium on Consumer Electronics	2013.06.03~06
	International Symposium on Biometrics and Security Technologies (ISBAST'13)	2013.07.02~05
	The 6th International Conference on Advanced in Information Technology (ICAIT)	2013.07.07~09

	The 19th IEEE International Conference on Embedded and Real-Time Computing Systems and Applications	2013.08.19~22
	14'th International Conference on Parallel and Distributed Computing, Applications and Technologies (PDCAT'13)	2013.12.16~18
	2014 International Conference on Optoelectronics and Microelectronics	2014.01.14~16
	The 2014 International Conference on Intelligent Green Building and Smart Grid (IGBSG)	2014.04.23~25
	2014 Laser Display Conference	2014.06.19~20

- Major Chapter Activities
  - ➤ Encourage members to participate IEEE activities.
  - ➤ Sponsor national and International conf. to promote the visibility of IEEE, IEEE Taipei Section and chapters.

- Major Student and Affinity Group Activities
  - ➤ IEEE Taipei section WIE group established in this year.
  - ➤ Prof. Hsiao-Chin Chen was elected as the first Chair of IEEE Taipei Section WIE Group.

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

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

- 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 2013 was NT$6,730,398 including NT$682,513 of 2013 rebate in July 2013. The total expenses was NT$5,445,209. The final balance at the End of 2013 is NT$8,028,167. More detail is included in the 2013 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	2011 Members	2012 Members	2013 Members
Affiliate	93	90	110
Associate	179	164	77
Fellow	83	**100**	98
Graduate Student	731	**795**	627
Life Fellow	8	**13**	17
Life Member	12	11	9
Life Senior	4	4	3
Member	2179	2179	2161
Senior Member	257	**277**	296
Student	354	298	292
Total	**3807**	**3841**	**3580**

- Summary and evidence of work done to improve the value of membership, which leads to retention and growth of members
  - ➤ IEEE Taipei Section affairs are transferred to next section chairman in March. We start to recruit new members and plan the activity this and next year, including Rendering Awards (Best Paper Award, Outstanding Chapter Award and Outstanding Student Branch Award, etc.)

B.2 Chapter Activities

- Total number of Chapters in the Section
  1. **Chapter Name: Antennas and Propagation Society Taipei Chapter (AP03)**
     Chapter Chair: Ruey-Bing Hwang
     Title and Affiliation: Professor, Department of Electrical and Computer Engineering, National Chiao Tung University
     Email: raybeam@mail.nctu.edu.tw

  2. **Chapter Name: Broadcast Technology Society Taipei Chapter (BT02)**
     Chapter Chair: Ding-Bing Lin

Title and Affiliation: Professor, Department of Electronic Engineering, National Taipei University of Technology
Email: dblin@ntut.edu.tw

3.   **Chapter Name: Computer Society Taipei Chapter (C16)**
     Chapter Chair: Der-Tsai Lee
     Title and Affiliation: Distinguished Research Fellow, Institute of Information Science, Academia Sinica
     Email: dtlee@iis.sinica.edu.tw

4.   **Chapter Name: Circuits and Systems Society Taipei Chapter (CAS04)**
     Chapter Chair: Kuo-Hsing Cheng
     Title and Affiliation: Professor, Department of Electrical Engineering, National Central University
     Email: cheng@ee.ncu.edu.tw

5.   **Chapter Name: Consumer Electronics Society Taipei Chapter (CE08)**
     Chapter Chair: Ti-Hao Chiang
     Title and Affiliation: Professor, Electronics Engineering, National Chiao Tung University
     Email: tchiang@mail.nctu.edu.tw

6.   **Council on Electronic Design Automation Chapter Taipei Chapter (CEDA44)**
     Chapter Chair: Ting-Chi Wang
     Title and Affiliation: Professor, Department of Computer Science, National Tsing Hua University
     Email: tcwang@cs.nthu.edu.tw

7.   **Chapter Name: Computational Intelligence Society Taipei Chapter (CIS11)**
     Chapter Chair: Faa-Jeng Lin
     Title and Affiliation: Professor, Department of Electrical Engineering, National Central University
     Email: linfjee.ncu.edu.tw

8.   **Chapter Name: Communications Society Taipei Chapter (COM19)**
     Chapter Chair: Guu-Chang Yang
     Title and Affiliation: Professor, Department of Electrical Engineering, National Chung Hsing University
     Email: gcyang@dragon.nchu.edu.tw

9.   **Chapter Name: Components Packaging, and Manufacturing Technology Society Taipei Chapter (CPMT21)**
     Chapter Chair: Shen-Li Fu

Title and Affiliation: President of I-Shou University

Email: slfu@isu.edu.tw

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

    Chapter Chair: Chun-Liang Lin

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

    Email: chunlin@dragon.nchu.edu.tw

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

    Chapter Chair: Juing-Huei Su

    Title and Affiliation: Dean. Office of Student Affairs, Lunghwa University of Science and Technology

    Email: suhu@mail.lhu.edu.tw

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

    Chapter Chair: Steve Chung

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

    Email: schung@cc.nctu.edu.tw

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

    Chapter Chair: Jyh-Horng Chen

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

    Email: jhchen@ntu.edu.tw

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

    Chapter Chair: Tzong-Lin Wu

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

    Email: wtl@cc.ee.ntu.edu.tw

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

    Chapter Chair: Yang-Lang Chang

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

    Email: ylchang@mail.ntut.edu.tw

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

    Chapter Chair: Po-tai Cheng

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

Email: ptcheng@ee.nthu.edu.tw

17. **Chapter Name: Industrial Electronics Society & Power Electronics Society Taipei Chapter (IE13 /PEL35)**
    Chapter Chair: Tian-Hua Liu
    Title and Affiliation: Dean, College of Electrical Engineering and Computer Science, National Taiwan University of Science and Technology
    Email: Liu@mail.ntust.edu.tw

18. **Chapter Name: Instrumentation & Measurement Society (IM09)**
    Chapter Chair: Jer-Liang Andrew Yeh
    Title and Affiliation: Professor, Department of Power Mechanical Engineering National Tsing Hua University
    Email: jayeh@itrc.narl.org.tw; jayeh@pme.nthu.edu.tw

19. **Chapter Name: Information Theory Society Taipei Chapter (IT12)**
    Chapter Chair: Hsuan-Jung Su
    Title and Affiliation: Professor, Department of Electrical Engineering, National Taiwan University
    Email: hjsu@cc.ee.ntu.edu.tw

20. **Chapter Name: Lasers & Electro-Optics Society Taipei Chapter (LEO36)**
    Chapter Chair: Tsong-Sheng Lay
    Title and Affiliation: Professor, Department of Photonics, National Sun Yet-Sen University
    Email: tslay@mail.nsysu.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: Chin-Chun Meng
    Title and Affiliation: Professor, Department of Electrical and Computer Engineering , National Chiao Tung University
    Email: ccmeng@mail.nctu.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, NTU and Director, National Center for Ocean Research (Preparatory Office), NARL

Email: fcchiu@ntu.edu.tw

24. **Chapter Name: Power Engineering Society Taipei Chapter (PE31)**
    Chapter Chair: Chih-Wen Liu
    Title and Affiliation: Professor, Department of Electrical Engineering, National Taiwan University
    Email: cwliu@cc.ee.ntu.edu.tw

25. **Chapter Name: Product Safety Engineering Society Taipei Chapter (PSE43)**
    Chapter Chair: Maxi Tsai
    Title and Affiliation: Engineering Manager, Underwriters Laboratories Taiwan Co., Ltd.
    Email: Maxi.Tsai@tw.ul.com

26. **Chapter Name: Robotics & Automation Society Taipei Chapter (RA24)**
    Chapter Chair: Jwu-Sheng Hu
    Title and Affiliation: Professor, Department of Electrical and Computer Engineering, National Chiao Tung University
    Email: jshu@cn.nctu.edu.tw

27. **Chapter Name: Reliability Society Taipei Chapter (RL07)**
    Chapter Chair: Shiuh-pyng Shieh
    Title and Affiliation: Professor and Director of National Chiao Tung University
    Email: ssp@cs.nctu.edu.tw

28. **Chapter Name: Sensors Council Taipei Chapter (SEN39)**
    Chapter Chair: Hsiao-Wen Zan
    Title and Affiliation: Professor, Department of Photonics Institute of EO Engineering Institute of Display, National Chiao Tung University
    Email: hsiaowen@mail.nctu.edu.tw

29. **Chapter Name: Systems, Man & Cybernetics Taipei Chapter (SMC28)**
    Chapter Chair: Yo-Ping Huang
    Title and Affiliation: Professor, Department of Electrical Engineering, National Taipei University of Technology
    Email: yphuang@ntut.edu.tw

30. **Chapter Name: Systems, Man & 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

31. **Chapter Name: Signal Processing Society Taipei Chapter (SP01)**
    Chapter Chair: Ti-hao Chiang
    Title and Affiliation: Professor, Electronics Engineering, National Chiao Tung University
    Email: tchiang@mail.nctu.edu.tw

32. **Chapter Name: Solid-State Circuits Society Taipei Chapter (SSC37)**
    Chapter Chair: Tai-Cheng Lee
    Title and Affiliation: Professor, Department of Electrical Engineering, National Taiwan University
    Email: tlee@cc.ee.ntu.edu.tw

33. **Chapter Name: Vehicular Technology Society Taipei Chapter (VT06)**
    Chapter Chair: Phone Lin
    Title and Affiliation: Professor, Computer Science & Information Engineering, National Taiwan University
    Email: plin@csie.ntu.edu.tw

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

    1. **Chapter Name: Broadcast Technology Society Taipei Chapter (BT02)**
       Two meeting reports have been submitted to IEEE. They are listed below.
       i. Mobile Internet TV and Digital Convergence
          Date: 102/9/27
          Location:, National Cheng Kung University, Tainan, Taiwan
          Attendance: Member: 10, Guests 30
          In this learning activitie, we introduce Mobile Internet TV and digital convergence key technologies which Include
          i-i. Video Streaming of Digital Convergence: Fundamentals and Practices
          Speaker: Yuan-Tse Yu, Assistant Professor
          National Kaohsiung Normal University, Kaohsiung, Taiwan
          i-ii. Introduction of Mobile Internet TV
          Speaker: Chieh-Ling Huang, Assistant Professor
          Chang Jung Christian University, Tainan, Taiwan
          i-iii. Streaming and Digital Video Coding Standards
          Speaker: Chieh-Ling Huang, Assistant Professor
          Chang Jung Christian University, Tainan, Taiwan

       ii. Digital Convergence Applications and Services Platform
           Date: 102/10/22

Location: St. John's University, New Taipei City, Taiwan

Attendance: Member: 12, Guests 40

The goal of the teaching material of "Applications of Mobile Positioning and Multi-multimedia Networks" and "Smart Life Application and Integration" is to introduce the implementation of related applications on digital convergence. It will guide students to complete innovative projects during the course and enhance the competence of students in the job market who take this class. The course will introduce the implementation of mobile positioning technology and smart life application integration step by step in practical aspects through a simple way. It equips teachers and students taking this course with basic know-how to implement digital convergence.

ii-i. Establish of the Platform for Smart Life Application

Speaker: Xing-Zhong Chen, Associate Professor

Asia University, Taichung, Taiwan

ii-ii. Mobile Measurement for Biomedical Signal

Speaker: Jin-Der Wang, Assocate Professor

St. John's University, New Taipei City, Taiwan

ii-iii. Vehicle and multi-network multimedia applications

Speaker: Li-Der Chou, Professor

National Central University, Taoyuan, Taiwan

ii-iv. Electronic maps and location-based applications

Speaker: Rung-Shiang Cheng, Associate Professor

Kun Shan University, Tainan, Taiwan

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

In year 2013, we have accomplished the following activities

i.   **2013/04/25 IEEE CASS Taipei Chapter Invited Talk 1 in National Central University, Zhongli, Taiwan**

Title: Healthcare for CMOS: Helping Circuits to Age Well

Speaker: Prof. Sachin S. Sapatnekar, (University of Minnesota, USA)

Number of attendees: 44

ii.   **2013/03/20, 4/24~26 Natioanl Collegiate IC Design Contest,**

co-sponsored by IEEE CASS Taipei Chapter

Number of attendees: 1039

iii.   **2013/8/7 IEEE CASS Taipei Chapter annual meeting at Kaohsiung, Taiwan**

Chair: Prof. Kuo-Hsing Cheng

Number of attendees: 60

iv.   **2013/8/14-15 IEEE CASS Taipei Chapter 2013 Summer School on the Design and Optimization for Future Green Circuits & Systems in National Tsing-Hua University, Hsinchu, Taiwan**

Topic 1: Single- inductor Multiple- output Converter Design in Nano- Meter CMOS Process

— Speaker: Prof. Ke-Horng Chen (National Chiao-Tung University)

Topic 2: Analog Circuit Sizing and Optimization with Yield and Layout Consideration -- Case Study on LDO Designs

— Speaker: Prof. Chien-Nan Liu (National Central University)

Topic 3: Circuit Simulation and Analysis under Uncertainty

— Speaker: Prof. Lei He (University of California at Los Angeles)

Topic 4: Physical Design Automation for Analog Circuits with Layout-Dependent Constraints

— Speaker: Prof. Evangeline Young (Chinese University of Hong Kong)

Number of attendees: 63

v. **2013/10/16 IEEE Networking CASS Chapters in Asia-Pacific Countries (R10)**

Host the visit of Prof. Yoshifumi Nishio (Tokushima University) from CASS Shikoku Chapter, Japan

Talk Title: Recent Progress on Artificial Neural Networks

Number of attendees: 90

vi. **2013/11/18 IEEE CASS Taipei Chapter Invited Talk 2 in National Central University, Zhongli, Taiwan**

Topic 1: Test Data Analytics – Exploring Hidden Patterns in Production Test Data for Silicon Characterization and Test Prediction

— Speaker: Prof. K.-T. Tim Cheng (Univ. of California at Santa Barbara)

Topic 2: Power-Aware Testing: The Next Stage

— Speaker: Xiaoqing Wen (Kyushu Institute of Technology, Japan)

Number of attendees: 70

vii. **2013/11/21 IEEE CASS Taipei Chapter Invited Talk 3 in National Central University, Zhongli, Taiwan**

Title: Anti-Tamper Techniques for Integrated Circuits

Speaker: Prof. Michael Hsiao, (Virginia Tech., USA)

Number of attendees: 35

3. **Chapter Name: Consumer Electronics Society Taipei Chapter (CE08)**

   i. Current chairman report summary

The consumer electronics society has a few key events in the year 2013

   • The consumer electronics society Taipei Chapter (CES-T) has organized the 2013 ISCE held from June 3-6 in Taiwan. The conference has received more than 150 papers by the CE society.

   • The CES-T has organized the IEEE Distinguished Lecturer Program: Joe Decuir on the June 11th, 2013.

   • The CES-T has organized the IEEE Lecture: C.-C. Jay Kuo, University of

Southern California on the October 29th, 2013.

- The CES-T hosted consumer electronics society President Mr. Stefan Mozar to do an ICCE-TW status review on December 13 at National Taiwan Normal University.

ii. 2013 Detail Activities Report

ii-i. The CES has organized the 2013 ISCE held from June 3-6 in Taiwan. The conference has received more than 150 papers by the CE society.

The 17th IEEE International Symposium on Consumer Electronics, sponsored by CE society, is the premier forum for the presentation of the technological advances and research results in the fields of consumer electronics. ISCE 2013, the seventeenth in the series that has been held annually since 1997, brings together the researchers, system developers and service providers and offers a grand chance to share the latest developments of fields pertaining to consumer electronics. This year the theme of the conference is Intelligent Biomedical/Green/Vehicle/3C Consumer Electronics for a Better Life.

Topics include, but are not limited to:

- Basic Technologies for Consumer Electronics
  Multimedia Signal Processing
  Audio Visual Capture, Storage and Recording
  User Interface and Human Computer Interaction
  Display System Design and Implementation
  Energy Efficient & Energy Aware System Design

- Key Entertainment and Information Systems
  Home Entertainment Systems (including Audio, Video and Gaming)
  Automotive Entertainment and Information Systems
  Interactive Digital Media and Virtual Reality Environment
  Digital Imaging and Camera Technology

- Consumer Electronics for Health-care & Wellness
  Telemedicine
  Medical Instrumentation and Diagnostic Systems
  Health Care and Support Systems for Old People
  Teaching Aids and Smart Classrooms

- Enabling Technologies and Others
  Radio Frequency Interfaces and Applications, High Speed Connectors
  Signal Integrity
  Wireless and Mobile Communication
  Web Technologies and Home Networking

Security and Rights Management including Steganography, Watermarking

- Digital Rights Management, IP and Licensing, etc.

  Open Source in CE Applications

  Cloud Computing and Smart Grid for CE

  Product Safety of Consumer Electronics

- Special Sessions

  Intelligent Image Processing for Consumer Applications

  Medical Image Processing and Analysis for Consumer Electronics

  Emerging Technologies for Security, Safety, and Privacy

  Navigation of Mobile Robots

  Three Dimensional Multimedia Systems and Applications

  Interactive Digital Media and Virtual Reality Environment

  Intelligent Computing with Applications for Consumer Electronics

  Recent RFID/Zigbee Localization and Detection Methods, and Its

  Applications

  Recent Advances in Image and Video Analysis

  RFID in Consumer Electronics

  Advanced Circuit and System on Green and Biomedical Applications

  Intelligent Multimedia Processing and Applications

  Recent Advances in Multimedia Technologies for Consumer Electronics

  Smart Phone Applications

ii-ii. IEEE Distinguished Lecturer by Joe Decuir

IEEE Consumer Electronics Society Distinguished Lecture by Joe Decuir

Title: "Getting to Low Energy in Consumer Devices: Bluetooth 4.0 Low Energy

Standard and Its Applications"

Speaker: Joe Decuir, Vice Chair, Bluetooth Architectural Review Board

Venue: ED210, NCTU

Time/Date: 15:30, June 11, 2013

Profile of the speaker:

Joe Decuir has contributed to the development of public engineering standards for

connectivity since 1987, including TIA, ITU, ETSI, IEEE 802, USB-IF, WiMedia

Alliance and the Bluetooth SIG. Joe has EECS degrees from UC Berkeley. His

career includes Atari, Amiga, Everex, Microsoft and MCCI. He is currently a

Standards Architect at CSR, where he is an officer of the Bluetooth Architecture

Review Board.

His IEEE career includes 9 years as the Seattle Chapter chair of the IEEE

Communications Society, 6 years as a Seattle Section officer and 3 years as a

Region 6 Northwest Area officer. He is now a Distinguished Lecturer in the IEEE

Consumer Electronics Society. He has 12 patents.

His goals for this presentation: What is Bluetooth Low Energy? How does it work? What is it good for? Where can I learn more?

ii-iii. IEEE Lecturer by Jay Kuo from USC

IEEE Consumer Electronics Society Lecture Program by C.-C. Jay Kuo

Title: "User Experience on Stereoscopic Image Pair Viewing: Subject Evaluation and Objective Assessment"

Speaker: C.-C. Jay Kuo, University of Southern California

Venue: International Conference Center, NCTU

Time/Date: 10:30, Oct. 29, 2013

Extensive studies on human visual experience on image and video have been conducted in recent years, yet the study on human viewing experience on stereoscopic image pairs is still sparse in literature. In this talk, I will first describe our recent effort in building a new subjective stereo image quality evaluation database called MCL3D at the University of Southern California (USC). It consists a rich set of distortion types, including distortion in the depth map, in the texture map and in the rendering engine. Then, I will describe the performance evaluation of several objective stereo image quality metrics for this new database as well as ideas to design a more robust objective quality index using machine learning and decision fusion. Finally, concluding remarks and future research directions are given.

ii-iv. CE President visit

The visit is hosted by the Taipei chapter with Prof. Wen-Chung Kao (National Taiwan Normal University) and the chapter chairman Dr. Tihao Chiang (Ambarella Taiwan Ltd). The visit covers the preparation work for the coming ICCE-TW, 2014. Professor Kao, the conference co-chairman, has reported the current progress including the following items.

a. Hiring of the public relations company for the conference.

b. Invitation for the TPC members

c. Conference Venue in Taipei

d. Keynote speaker list

e. Funding sources

4. Chapter Name: Communications Society Taipei Chapter (COM19)

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

- 01/24/2013~01/25/2013

  2013 Spring Workshop on Information Theory & Communications, Tainan, Taiwan

  Activity: Seven invited speakers delivered seven speeches

  Attendance: Members 80, Guests 126

  Homepage: http://w3.eecs.stust.edu.tw/itcomm2013/

- 03/09/2013

  2013 Spring School on Information and Communications

  Activity: Fifteen Ph.D. students presented their current status of research

  Attendance: Members 19, Guests 60

  Homepage: http://comm-center.ntu.edu.tw/2013springschool/

- 08/05/2013~08/09/2013

  2013 Summer School on Information/Communication Theory and Technologies

  Activity: Nine lectures on communications theory by nine invited speakers

  Attendance: Members 50, Guests 114

  Homepage:

  http://140.113.13.93/IEEE/wireless/com/2013SummerSchool/index.html

- 08/15/2013~08/16/2013

  2013 Fall Workshop on Information Theory & Communications, Tainan, Taiwan

  Activity: Seven invited speakers delivered seven speeches

  Attendance: Members 69, Guests 188

  Homepage: http://www.comm.ccu.edu.tw/2013fall/index.php

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

   i. **2013 National Symposium on System Science and Engineering (NSSSE 2013)** held by Oriental Institute of Technology,Ban-Chiao,New Taipei City, 8~9 June, 2013

      - " Model Predicative Control for Hybrid Stepper Motors ". Chun-Liang Lin, MANDE Daouda, Chia-Sung Lee, Chi-Ching Yang

      - " Synthesizing Periodic Triggering Signals with Genetic Oscillators Using Fourier Series " by Chun-Liang Lin and Po-Kuei Chen.

      - " Dynamic Model of CSMA/CA in Power-Line Communication " Wei-Ting Cheng and Chun-Liang Lin.

   ii. " **ICT-based Emerging Services: Trends, Research Directions, and Business Opportunities** " by Dr. T. Russell Hsing (Professor of National Chiao Tung University), September 12, 2013

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

   i. **Contest oriented learning in mobile robots (Jan. 9, 2013)**

      Attendance: 33

      Sharing experiences in contest oriented about intelligent mobile robots.

   ii. **Workshop for Taiwan micromouse and intelligent robot contest (May 18, 2013)**

      Attendance: 83

      Introduce implementation skills for micromouse and robotrace contests.

      The organization committee (chapter chairman is also involved) for 2013 Taiwan micromouse and intelligent robot contest held the workshop for students and teachers from vocational senior high schools and Universities of Technology in

Taiwan. Veterans who won prizes from this contest before were invited to share their experiences with the audience.

7.   Chapter Name: Electron Devices Society Taipei Chapter (ED15)

   i.   4/22/2013- 4/24/2013

International Symposium on VLSI-TSA

Attendance: Members 150, Guests 350

Activities: 3 keynote talks, 59 contributed paper presentations, one-day short course

   ii.   4/22/2013

Improving and Optimizing Reliability in Future Technologies with High-k dielectrics

Attendance: Members 30, Guests 80

Activities: invited talk

   iii.   4/26/2013

III-V/Ge CMOS device technologies

Attendance: Members 30, Guests 30

Activities: invited talk

   iv.   9/6/2013

e-Manufacturing & Design Collaboration Symposium

Attendance: Members 20, Guests 130

Activities: Technical co-sponsorship

   v.   10/28/2013

TaOx-based resistive switching memory

Attendance: Members 20, Guests 70

Activities: invited talk

   vi.   11/28/2013

International Electron and Devices Materials Symposium

Attendance: Members 80, Guests 220

Activities: Technical co-sponsorship

   vii.   12/6/2013

Future Electronics Based On 2D Materials and Their Electronic Applications: A Theoretical Perspective

Attendance: Members 20, Guests 30

Activities: invited talk

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

   i. **Education courses of fMRI for Humanities and Social Science, 2013**

      Education course of MRI for Humanities and Social science has been held through integrated several education courses from Jan 19th, 2013 to Jan 20th, 2013 organized by Neurobiology and Cognitive Science Center, Department of Electrical Engineering and Department of phycology from National Taiwan University. There were 145 and 130 participants joined in the two days course, separately. The course included the research areas from fMRI technique, neurology system, paradigm design of a cognitive study, safety and ethics. The courses was aim to promote MRI technique to the Humanities researcher, and bridge up the gap between MRI engineering and Social Scientist in order to educate the interdisciplinary student of Science and Social Science.

   ii. **MEG Educational Training and Symposium, 2013**

      MEG Educational Training and Symposium, 2013 has been held from Jan 21st, 2013 to Jan 23rd, 2013 organized by National Science Council and National Taiwan University, Taiwan. There were 167, 150 and 119 participants joined in the two days training course and the symposium. The course included basic theory of MEG signal, the signal processing of MEG signal and the experimental design was held in first two day. The international symposium introduced the different application of MEG was held in last day. The courses and symposium was aim to promote MEG technique to the Humanities researcher, engineer, psychologist and educated the interdisciplinary student of Science and Social Science.

   iii. **Biomedical Electronics and Bioinformatics Camp, 2013.**

      Biomedical Electronics and Bioinformatics Camp has been held annually since 2006. The 7th Biomedical Electronics and Bioinformatics Summer Camp held on July 3 th to July 5th, 2013 at National Taiwan University Barry Lam Hall. This year main theme is "Cancer and Biomedical information", introduced through series of courses to lead the students to understand and develop their interest in biomedical informatics. This summer camp provides them a chance to enter related fields and to develop professionals in biotechnology and medical electronics information professions for industry and academic.

      Cancer is a major medical problem that is unsolved for a long time, cancer therapy and prevention has been more concerned by people than ever. This event invited clinicians and experts from this field and provide series of academic lecture, introducing them to the latest technology in cancer diagnosis and treatment, discovery and development of research and application of related field. Laboratory tours and arrange activities so that students understand each biomedical informatics study and background to inspire students interest in Biomedical Electronics and Bioinformatics field.

The three-day course is ended by a creative competition, students from different backgrounds mixed into groups, students use group discussion time to understand what they learned from the lectures and make full use of the knowledge to their final report. Communicate with each other through team cooperation, and in the end their final results will be presented to the jury. Then, the jury judge through the reports innovation, enforceability, process planning, integrity and contribution valuation considerations and other factors to elect the top three winning teams contest awarded with a certificate and prize.

There are 50 students participants in this camp, composed of undergraduates, graduates, and community members; this shows that Biomedical Electronics and Bioinformatics summer camp contains rich and diverse curriculum to attract students of different backgrounds. The student survey shows that all the students are satisfied with this camp, and 93% of participants expressed willingness to participate again. Next year the Biomedical Electronics and Bioinformatics summer Camp will keep the good tradition of opening biotechnology.

iv. **The 2013 MEG Educational Training III**

This training has been held on Oct. 18st in China Medical University, Taiwan, and it was organized by National Science Council and National Taiwan University. There were 87 participants from Humanities researcher, engineer, psychologist and educated the interdisciplinary student of Science and Social Science. joined in event. This event aims at introducing MEG to researchers interested in using magnetoencephalography (MEG) to study brain function and its correlates to social sciences. The invited talks cover topics including MEG physiological basis, technical basis, data processing, and applications.

v. **fMRI symposium 2013**

Functional MRI symposium 2013 has been held from Dec 14 to Dec 17, 2012 organized by Department of Electrical Engineering, Department of Psychology, and Neurobiology and Cognitive Science Center from National Taiwan University, and Institute of Neuroscience from National Yang-Ming University. There were 107 and 80 participants joined in the two days symposium. The international symposium introduced the different application of fMRI was held in last day. The symposium was aim to promote fMRI technique to the Humanities researcher, engineer, psychologist and educated the interdisciplinary student of Science and Social Science.

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

In 2013, EMC Taipei Chapter held and sponsored five activities as follows:

i. 2013 Taiwan EMC Technology and Practice Symposium on Jun. 27;

ii. 2013 EM Education Initiative: Summer Program on Aug. 26-30;

iii. Technical Forum - Simulation, Design and Applications of Wide-band Antennas and RF Modules on Sept. 2;

iv. Electric Vehicle EMC Technology Conference on Sept. 10;

v. 2013 Q4 Workshop on Integrated Circuits and Packaging EMC Technologies on Dec. 26.

10. **<u>Chapter Name: Industrial Electronics Society & Power Electronics Society Taipei Chapter (IE13 /PEL35)</u>**

i. **Invited talk: The Japanese Smart Grid and its Related Power Electronics (Mar. 11, 2013)**

Speaker: Professor Hirofumi Akagi

Attendance: 65

There are 65 participants in total at Prof. Hirofumi Akagi's talk「The Japanese Smart Grid and its Related Power Electronics」, held in National Taiwan University of Science and Technology on March 11, 2013. Many of them are from industry and academic institutions. The talk invited Prof. Hirofumi Akagi from the Tokyo Institute of Technology, Japan, is a distinguished experts of power electronic technology, to give speech with insight inspiration to the audience. Several in-depth discussions as to why smart grid should be further developed were also found at the talk. As a whole, the talk has achieved the objectives of communication and experience sharing between academics and industry. The attendant smart grid development.

ii. **Forum on Advanced Industrial Electronics Technologies (May 27-30, 2013)**

Speaker : Prof. Ramon Blasco-Gimenez (60% wind power, is it possible?)

Prof. Hao Ma (Investigation on Contactless Charging Platform for Portable Electronics Equipments)

Prof. Byung M. Han (1. Three-Phase On-board Battery Charger with High-Frequency Link Converter for PHEV Application. 2. Intelligent Semiconductor Transformer)

Prof. Okyay Kaynak (From Industrial Electronics to Industrial Informatics)

Attendance : 102

There are 102 participants in total at the Forum on Advanced Industrial Electronics Technologies, held in National Taiwan University of Science and Technology on May. 27~30, 2013. Many of them are from industry and academic institutions. The forum invited Prof. Ramon Blasco-Gimenez, Prof. Hao Ma, Prof. Byung M. Han, and Prof. Okyay Kaynak, all of them are distinguished experts of industrial electronics technology, to give speech with insight inspiration to the audience. Several in-depth discussions as to why wind power technology, contactless charger for IT products, battery charger for plug-in hybrid vehicles, and industrial informatics technology should be further developed were also found at the forum. As a whole, the forum has achieved

the objectives of communication and experience sharing between academics and industry. The attendant students also got the chance to have a global view about the worldwide trends of industrial electronics development.

iii. **Invited talk: Contactless Grid Integration of Electric Vehicles (June 28, 2013)**

Speaker: Professor Udaya K. Madawala

Attendance: 46

There are 46 participants in total at Prof. Madawala's talk「Contactless Grid Integration of Electric Vehicles」, held in National Taiwan University of Science and Technology on June. 28, 2013. Many of them are from industry and academic institutions. The talk invited Prof. Udaya K. Madawala from The University of Auckland, New Zealand, is a distinguished experts of electric vehicle technology, to give speech with insight inspiration to the audience. Several in-depth discussions as to why wireless charger for electric vehicles should be further developed were also found at the talk. As a whole, the talk has achieved the objectives of communication and experience sharing between academics and industry. The attendant students also got the chance to have a global view about the worldwide trends of electric vehicle development.

iv. **Short course : "Control of Wind Turbines " (July 24-26, 2013)**

Speaker: Prof. Ramon Blasco-Gimenez

Attendance: 24

There are 24 students in total at the short course 「Control of Wind Turbines」, given in National Taiwan University of Science and Technology from July 24 to July 26, 2013. Some of them are from industry. The short course is given by Prof. Ramon Blasco-Gimenez, a distinguished expert of wind power technology, to give lecture with insight inspiration to the audience. Several in-depth discussions as to why renewable energy and wind power technologies should be further developed were also found at the short course. As a whole, the short course has achieved the objectives of communication and experience sharing between academics and wind power industry. The attendant students also got the chance to have a global view about the worldwide trends of wind power industry development.

v. **Invited talk: Anti-tamper Techniques for Integrated Circuits (Nov. 22, 2013)**

Speaker: Professor Michael Hsiao

vi. **International Forum on Green Energy Electronics (Dec. 12-13, 19-20, 26-27, 2013)**

Speaker: Prof. Philip T. Krein (1. The Real-Time Switch in Power Electronics and Geometric Control Possibilities, 2. High-Reliability Cost-Effective Methods for LED Lighting Drivers)

Prof. Gabriel A. Rincón-Mora (Designing Tiny Energy-Harvesting
Piezoelectric Chargers)

Prof. C. K. Michael Tse (Driving LEDs Efficiently: The Bi-Level
Approach)

Prof. Sewan Choi, SM IEEE (Multi-phase DC-DC Converters for High
Step-up and High Power Applications

Prof. Noriyuki Kimura (Simulation and Modeling of Power Electronics
Circuit- What Kind of Problem May Occur in
Power Electronic System Simulation)

Attendance: 157

There are 157 participants in total at the International Forum on Green Energy
Electronics, held in National Taiwan University of Science and Technology and
National Tsing-Hua University on Dec. 12~27, 2013. Many of them are from
industry and academic institutions. The forum invited Prof. Philip T. Krein (IEEE
fellow, IEEE PELS former president) from University of Illinois at Urbana-
Champaign, Prof. Gabriel A. Rincón-Mora (IEEE fellow, IET fellow) from
Georgia Tech, Prof. C. K. Michael Tse (IEEE fellow, Chang Jiang Scholars Chair
Professor, China) from Hong Kong Polytechnic University, Prof. Sewan Choi
from Seoul Tech, and Prof. Noriyuki Kimura from Osaka Tech, all of them are
distinguished experts of green energy electronics technology, to give speech with
insight inspiration to the audience. Several in-depth discussions as to why LED
driving techniques, Piezoelectric Charger IC, high power DC-DC conversion, and
power electronics simulation should be further developed were also found at the
forum. As a whole, the forum has achieved the objectives of communication and
experience sharing between academics and industry. The attendant students also
got the chance to have a global view about the worldwide trends of green energy
electronics development.

11. **Chapter Name: Instrumentation & Measurement Society (IM09)**

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. **International Instrumentation and Measurement Technology Conference
(I2MTC, May 6 – 9, Minneapolis, Minnesota, USA)**

The I2MTC conference is the biggest annual event of the I&M Society. In 2013,
the chapter featured this conference by circulating the conference call for paper
announcement to local universities and research institutes. In the meantime the
chapter also started to collect the statistics of I2MTC conference participation of
Taiwanese in the previous year.

In the chapter-society meeting on May 6, the chapter secretariat, Dr. Chi-Hung
Hwang reported the current chapter activities, development roadmap and the
preliminary proposal to the society officers. The present officers, including the
president, Mr. Jorge Daher, the executive vice president, Mr. Reza Zoughi, the vice

president of membership, Mr. Georg Brasseur, and many other significant officers of I&M Society gave praise and promised support to the chapter's future activities.

ii. **3D Optical Measuring Systems and Laser Technologies for Scientific and Industrial Applications (May 23, 2013)**

   Speaker: Prof. Yuri V. Chugui *(Siberian Branch of the Russian Academy of Sciense, Russia)*

   Attendance: 25

iii. **Innovative Blood Pressure Monitoring (June 26, 2013)**

   Speaker: Prof. Voicu Z. Groza *(IEEE Instrumentation & Measurement Society,Fellow)*

   Attendance: 30

iv. **Are WSN Assisted Homes Safer for the Elderly? An Embedded Computing Perspective (August 30, 2013)**

   Speaker: Dr. Subhas Chandra Mukhopadhyay *(IEEE Sensors Council)*

   Attendance: 30

v. **What stops threads?: Dislocation structure, stress distributions, and strength in thin films (October 8, 2013)**

Speaker: Prof. Shefford P. Baker *(Cornell Unviersity, USA)*

Attendance: 32

vi. **3D Printing – Additive Manufacturing great opportunity and challenges Supplementary to Subtractive Manufacturing Process (October 16, 2013)**

Speaker: Prof. Gideon N. Levy *(Polytechnic Institute of Leiria, Portugal)*

Attendance: 36

vii. **Wireless Active Guardrail System for Traffic Safety and Environmental Measurements (November 5, 2013)**

Speaker: Prof. Pasquale Daponte *(IEEE Instrumentation & Measurement Society)*

Attendance: 60

viii. **5th i-ONE International Instrument Technology Innovation Competition (November , 2013)**

The 5th i-ONE International Instrument Technology Innovation Competition was jointly held by the IEEE Instrumentation and Measurement Society Taipei Section Chapter and the Instrument Technology Research Center of Taiwan. This

competition awarded the best innovator of ground breaking ideas on instrumentation and measurement technology with the maximum prize of NTD 100,000 (around USD 3335). It was firstly held in year 2009 which registered by nearly 100 participants and grabbed the attention and sponsorship from several world-class companies, such as National Instruments, Agilent Technologies, Isuzu Optics, etc.

This innovation competition, perceived by many local students as the channel to boost their academic portfolio, continued to the second year with slight transformation. Concentrated as a competition purely for students, this competition aimed to lighten the importance of innovation from the threshold and advocate instrumentation and measurement from an earlier stage.

The committee set upon the 5th i-ONE International Instrument Technology Innovation Competition included 20 invited members of former deputy ministers of the biggest funding agency of Taiwan, National Science Council, department heads and professors from universities, and representatives from industries. Three chapter officers jointly served as the committee members.

After eight months of preparation, registration, and preliminary competition, 13 proposals from two groups (youth and amateur) were selected to the final competition. Representatives of the selected proposals were required to present their ideas with slides and demonstrate the prototypes, if there's any, to the reviewers and peer contestants. Below listed the 13 groups selected to the final competition.

The winners were announced and presented at the award ceremony on Nov. 6. As previously mentioned, the committee and the chapter had invited AdCom Member of IEEE and also President of International Measurement Confederation (IMEKO), Prof. Pasquale Daponte to attend the award ceremony and relevant spin-off activities.

Prof. Daponte presented awards to the winners and gave an inspiring speech to all the audience. He encouraged the young participants to have faith and confidence in what they are pursuing and they shall become the important characters in the field if they consist their faith. As the only foreign invited guest of the award ceremony, Prof. Daponte grabbed the attention of the contestants who so far had only very limited and vague ideas of how globalization works in research circles. Based on random and informal interviews with the contestants in the luncheon after the ceremony, many expressed their gratitude to this event for the spectacular opportunity of showing their ideas, a chance for them to think more depth (theories) and width (applications) of an interesting idea sprung from nowhere. Many of them couldn't hold their excitement of meeting the reviewers, committee members and society and chapter officers, and of gaining the understanding to the society

that they'll consider joining in the future.

ix.   **Innovative Fast Diagnostics Methods for Material Sciences and Health and Wellness of Peoples / Innovation Transfer and European Program Horizon 2020 (December 2, 2013)**

Speaker: Dr. Oliviere Lavastre *(CNRS-University of Rennes, France)*

Attendance: 50

x.   **Optics Workshop (December 5, 2013)**

Outline:

- Precision Interferometric Measurements in Non-ideal Environments
  Prof. James C. Wyant (University of Arizona, USA)
- Experiences in the Design of Freeform Optics
  Prof. Jose Sasian (University of Arizona, USA)
- Optimization of Nonimaging Systems
  Prof. R. John Koshel (University of Arizona, USA)

Attendance: 80

xi. **NAMIS Workshop (December 13, 2013)**

Outline:

- A Consideration of High-speed and Non-contact Human Physiology Sensing for Dynamic Human-computer Interaction Scenarios

  Prof. Yasuaki Monnai (University of Tokyo, Japan)

- Phased Array System for Microwave Single/Power Transmission via 2-D Waveguide Sheet

  Prof. Akihito Noda (University of Tokyo, Japan)

- CMOS-MEMS Accelerometers for Sub-1g Detection

  Prof. Daisuke Yamane (Tokyo Institute of Technology, Japan)

- Introduction to the Integration of Moter Proteins and Micro/Nano Fabrications

  Prof.Ryuji Yokokawa (Kyoto University, Japan)

- Measurement Technology for Medical Tests and its Applications

  Prof. Kei Nakatsuma (Kumamoto University, Japan)

Attendance: 50

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

    The major activities of the Information Theory Society, Taipei Chapter in 2013 are as follows.

    i.   The 2013 Taiwan Hong Kong Joint Workshop on Information Theory and Communications was held at the Chinese University of Hong Kong, Hong Kong on 2013/1/19-20. (http://www.inc.cuhk.edu.hk/hktw2013/) Prof. Emre Telatar (IEEE Fellow, the 2012-13 IEEE Information Theory Society Distinguished Lecturer), gave a talk as an invited speaker at the Joint Workshop. 11 other professors from Taiwan, Hong Kong, Singapore, and China were also invited to give talks, including Professor Robert Shuo-Yen Li (IEEE Fellow). A poster session was also held in this event.

    ii. The 2013 Spring Workshop on Information Theory and Communications was held at the Southern Taiwan University of Science and Technology, Tainan, Taiwan on 2013/1/24-25. (http://w3.eecs.stust.edu.tw/itcomm2013/) The 2012-13 IEEE Information Theory Society Distinguished Lecturer, Prof. Emre Telatar (IEEE Fellow), gave a talk as an invited speaker at the Spring Workshop. There were six other invited local speakers, including Prof. C.-S. Chang (IEEE Fellow), and Prof. L.-C. Wang (IEEE Fellow). There were over 200 participants in this event.

    iii. The 2013 Taiwan Spring School on Information Theory and Communications was held at the National Taiwan University on March 9th, 2013. This was a student event that included oral presentations and poster exhibitions by Ph.D. students, all given in English. There were 60 participants, including graduate students and their advisors, in this event. 15 Ph.D. students presented their research works. Eventually all the participants voted to select two best presentation awards.

    iv. A seminar, "Writing more than once in a Write-Once-Memory" was given at the Yuan Ze University on May 14th by Professor Han Vinck (IEEE Fellow), University of Duisburg- Essen (UDE), Germany. (abstract attached)

v.   The election of the new Chair for IEEE Information Theory Society, Taipei Chapter (IT12) was completed. Professor Hsuan-Jung Su of National Taiwan University will be the Chapter Chair from August, 2013 to July, 2015. http://cc.ee.ntu.edu.tw/~hjsu/

vi.   The 2013 Fall Workshop on Information Theory and Communications was held at the Hibiscus Resort, Tainan, Taiwan on 2013/8/15-16. (http://www.comm.ccu.edu.tw/2013fall/) There were three invited speeches on Aug. 15 by Prof. Soung-Chiang Liew, IEEE Fellow, Division Head at the Department of Information Engineering of the Chinese University of Hong Kong (CUHK), Prof. Ping-Cheng Yeh, NTU, Dr. A. Taufiq Asyhari, NCTU, and four invited speeches on Aug. 16 by Prof. Po-Ning Chen, NCTU, Prof. Chee Wei Tan, City University of Hong Kong, Prof. Kuei-Chiang Lai, NCKU, and Prof. Tsung-Hui Chang, NTUST. In addition, there were 150 posters presented during the poster sessions on both days. There were over 250 participants in this event.

vii.   A seminar, "MIMO Transmission: Capacities and Space-Time Codes" was given at the National Taiwan University on Nov. 4 by Prof. Ezio Biglieri (IEEE Fellow), UCLA and UPF. After that, Prof. Biglieri also offered a six-day (2013/11/5, 8, 12, 13, 15, 19) short course on the same topic. Over 40 students attended the short course.

viii.   A seminar, "Multi-Unicast Capacity of Packet-Level Network Coding on Small Wireless Networks" was given at the National Taiwan University on Nov. 25 by Prof. Chih-Chun Wang, Purdue University. (abstract attached)

ix.   A seminar, "Cached-Induced Opportunistic Cooperative MIMO: A new Paradigm for Content Access Wireless Networks" was given at the National Taiwan University on Dec. 17 by Prof. Vincent Lau (IEEE Fellow), Hong Kong University of Science and Technology. (abstract attached)

x.   The 2013 Taiwan Joint ITSOC-COMSOC Young Researcher Best Paper Award was announced on Dec. 27, 2013. Two papers were awarded: "Interference alignment and the generalized degrees of freedom of the X channel," IEEE Trans. on Information Theory, Vol. 58, No. 8, pp. 5130-5150, Aug. 2012, by Prof. Chiachi Huang (YZU) and co-authors V. R. Cadambe, S. A. Jafar, and "Achievable angles between two compressed sparse vectors under norm/distance constraints imposed by the restricted isometry property: A plane geometry approach," IEEE Trans. on Information Theory, Vol. 59. No. 4, pp. 2059-2081, April 2013, by Prof. Jwo-Yuh Wu (NCTU) and co-author L.-H. Chang. Candidates for this award were journal papers on Information Theory and/or Communications published between 2010 and 2013 by authors under 40 with at least one author being a member of the ITSOC or COMSOC Taipei or Tainan Chapter.

13. **Chapter Name: Magnetics Society Taipei Chapter (MAG33)**
    i. Distinguished Lecturers 2013:

       Prof. Rudolf Schaefer
       - Topic: Magneto-Optic Analysis of Magnetic Microstructures
       - Time: 4/22-4/26

       Professor Koki Takanashi
       - Topic: Advanced spintronic materials for generation and control of spin current
       - Time: 7/21

       Professor Adekunle Adeyeye
       - Topic: Artificial Ferromagnetic Nanostructures: An Experimental Platform for Magnonics
       - Time: 9/16-9/18

    ii. Other Speakers:

        Prof. John Salmon
        - Topic: Couple Inductors in Multi-level Inverter Drives
        - Time: 5/27

        Professor Hiroshi Fujimoto
        - Topic: Advanced Motion Control Technologies and Future Trends of Electric Vehicles
        - Time: 5/29

        Professor David Dorrell
        - Topic: Technology Development of IE4 Motor
        - Time: 10/1

        Professor Jiang Zheng
        - Topic: Minimum Mechanical Network Synthsis: Theory and Applications to Vibration Control
        - Time: 12/30-12/31

    iii. Other Activities:

         2013 IEEE Magnetic Taiwan Chapter Meeting
         - Time: 7/22

         2013 IEEE Magnetics Society Taiwan 14th Annual Activity
         - Time: 12/20

14. **Chapter Name: Reliability Society Taipei Chapter (RL07)**
    i. 01/24/2013

       The Technical Lecture

       Attendance: Members 6, Guests 75

       Title: 4G Mobile Broadband Evolution towards LTE Advanced

Speaker: Dr. Tharek Abd. Rahman

ii.   02/27/2013

The Technical Lecture

Attendance: Members 9, Guests 96

Title: Smarter User Interfaces for Smart Mobile Devices and Medical Applications

Speaker: Prof. Mike Y. Chen

iii. 04/10/2013

The Technical Lecture

Attendance: Members 6, Guests 82

Title: Scalable Video Streaming Over Wireless Networks

Speaker: Prof. Kai-Lung Hua

iv.   05/01/2013

The Technical Lecture

Attendance: Members 7, Guests 92

Title: Label Space Coding for Multi-label Classification

Speaker: Prof. Hsuan-Tien Lin

v.   05/15/2013

The Technical Lecture

Attendance: Members 6, Guests 85

Title: Introduction to GPGPU Programming Languages and Compiler Optimizations

Speaker: Prof. Jenq-Kuen Lee

vi.   05/22/2013

The Technical Lecture

Attendance: Members 8, Guests 98

Title: Designing User Interfaces for Peripheral Interaction with Multimedia

Speaker: Prof. Bing-Yu Chen

vii. 06/25/2013

The Technical Lecture

Attendance: Members 10, Guests 94

Title: AdRob: Examining the Landscape and Impact of Android Application Plagiarism

Speaker: Prof. Hao Chen

viii. 09/25/2013

The Technical Lecture

Attendance: Members 9, Guests 102

Title: Model-Checking Iterated Games

Speaker: Prof. Farn Wang

ix.   10/16/2012

The Technical Lecture

Attendance: Members 6, Guests 90

Title: Heterogeneous System Architecture, Its Intermediate Layer, and Linking Support

Speaker: Dr. ChengWei Chen

x.   10/28/2013

The Technical Lecture

Attendance: Members 7, Guests 85

Title: Statistical video semantic indexing

Speaker: Dr. Professor Koichi SHINODA

xi.   11/27/2013

The Technical Lecture

Attendance: Members 8, Guests 103

Title: Andes -- The Biggest Processor IP Company (You've Never Heard Of)

Speaker: Dr. Charlie Su

xii.   12/11/2013

The Technical Lecture

Attendance: Members 5, Guests 85

Title: (1) Contents, Data and Tools: Why Openness Benefits Research

(2) The one and many maps: participatory and temporal diversities in OpenStreetMap

Speaker: Dr. Tyng-Ruey Chuang

xiii.   12/25/2013

The Technical Lecture

Attendance: Members 7, Guests 93

Title: Click Fraud - Challenges and Remedies

Speaker: Dr. Jia-Yu Pan

xiv.   12/26/2012

The Technical Lecture

Attendance: Members 15, Guests 120

Title: Adversarial Machine Learning

Speaker: Prof. Doug Tygar

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

    i.   Sensor workshop, date: 25th Oct. 2013

Attendees: Prof. Hsin-Fei Meng (NCTU), Prof. Chia-Jung Lu (NTNU), Prof. Paul C. P. Chao (NCTU), Prof. Hsiao-Wen Zan (NCTU), Dr. Zhi-Sheng Chien, Mr. Hung-Chuang Liu, Mr. Rong-Chiang Chung, Mr. Heng-Tsan Su, Mr. Po-Hung Yeh, Mr. Tse-Yi Tu

Workshop schedule:

- Introduction on hydro-gel based sensor
- Introduction on mini GC (Gas chromatography)
- Introduction on design of sensing circuitry
- Discussion
- Activity photos

    ii.   Sensor workshop, date: 27th Nov. 2013

Attendees: Prof. Chi-Wei Cho (NCTU), Prof. Hsin-Fei Meng (NCTU), Prof. Paul C. P. Chao (NCTU), Prof. Hsiao-Wen Zan (NCTU), Mr. Ping-Chie Chieng, Mr. Hung-Chuang Liu, Mr. Rong-Chiang Chung, Mr. Heng-Tsan Su, Mr. Po-Hung Yeh, Mr. Tse-Yi Tu

Workshop schedule:
- Introduction on fiber sensor technology
- Introduction on solid-state gas sensor
- Introduction on sensing circuitry
- Discussion
- Activity photos

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

    i. Current chairman report summary

        The Signal Processing society has a few key events in the year 2013

        • The Signal Processing Society Taipei Chapter co-sponsored the 2013 IEEE "Signal and Information Processing" summer school on August 12-15 at the National Chiao Tung University in Hsincu.

        • The Taipei chapter hosted Signal Processing Society sponsored four MPEG resource sharing programs in May, August and December, 2013. The goal is to share the most recent development of the MPEG committee standardization efforts by the attending professors from National Chiao Tung University and National Cheng Kung University. The main topics are 3D video coding and High Efficiency video coding, which are the next two major video coding standards.

    ii. 2013 Detail Activities Report

        ii-i. Signal and Information Processing summer school

        The signal processing society sponsored the IEEE "Signal and Information Processing" summer school at National Chiao Tung University in Hsincu. The program is held in National Chiao Tung University from August 12th to August 15th, 2013.

	9：00～12：00	13：30～16：30
8/12 Mon	**Digital Signal Processing** • LTI systems • Convolution • Frequency domain analysis • Filter structure • Multirate signal processing • Filter design techniques	**Adaptive Signal Processing** • Random process • Wiener filters • Method of steepest descent • Least Mean Square algorithm • Recursive least-squares algorithm • Applications
8/13 Tue	**Source Coding** • Entropy and rate-distortion theory • Lossless coding • Scalar and vector quantization • Subband and wavelet coding • Transform coding	**Speech Processing** • Speech production and perception • Speech analysis and representation • Speech enhancement • Speech coding • Speech synthesis • Speech recognition
8/14 Wed	**Audio Processing** • Audio signal fundamentals • Phychoacoustics • Audio coding and standards • Audio watermarking	**Image and Video Processing** • Digital image fundamentals • Image enhancement and filtering • Image segmentation • Motion analysis • Image and video compression
8/15 Thu	**SIP for Emerging Multimedia** • Multimedia streaming • Advanced video coding and standards • 3-D and multi-view video • Multimedia cloud computing	**SIP for Emerging Communications** • Multicell MIMO Systems • Cooperative and Relay Communications • Cognitive Radio • Wireless Physical-Layer Security • Wireless Sensor Networks

ii-ii. MPEG Resource Sharing Program

The Taipei chapter hosted four Signal Processing Society sponsored MPEG resource sharing program meetings in May, August and December, 2013. The goal is to share the most recent development of the MPEG committee standardization efforts by the attending professors from National Chiao Tung University and National Cheng Kung University. The main subjects are 3D video coding and High Efficiency video coding,

which are the next two major video coding standards.

The main speakers are Professor Hsueh-Ming Hang (National Chiao Tung University), Professor Wen-Hsiao Peng (National Chiao Tung University) and G.-G. Lee (National Cheng Kung University). Professor Peng focuses on the High Efficiency video coding (H.265), which is scheduled to replace H.264 as the next video coding standard. Professor Hang and Professor Lee focuses on the 3D video coding, which is to become the future standard for 3D TV and other related applications. The resource sharing program meets four times a year with up-to-date information for both academia and industry.

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

    i. **A Harmonic-Rejecting LNA for Broadband RF Receivers**

        Speaker: Prof. Behzad Razavi

        Date: 2012/09/19(Wed)15:50~17:00

        Place: National Chiao-Tung University

    ii. **Design of High-Speed Equalizers in Modern Data Link Systems**

        Speaker: Prof. Jri Lee

        Date: 2012/09/25(Tues.)14:30~16:10

        Place: National Chiao-Tung University

    iii. **Short course on Analysis and Design of Mixed-Signal Interface Circuits**

        Speaker: Prof. Boris Murmann

        Date: 2012/11/19(Mon.)9:00~16:30

        Place: National Chiao-Tung University

    iv. **Monolithic Wideband and mm-Wave Transceivers and Antenna Arrays**

        Speaker: Prof. Hossein Hashemi (USC)

        Time: 2012/12/24 and 25 9:30-15:30

        Place：National Taiwan University /National Chiao-Tung University

    v. **The Fourth Age of Wireless and the Coming Internet of Everything**

        Speaker: Prof. Tom Lee (Stanford University)

        Date: 2013/04/23

        Place: National Taiwan University

    vi. **Silicon nanophotonics – some circuit design considerations**

        Speaker: Dr. Ron Ho (Oracle Lab)

        Date: 2013/05/02

        Place: National Taiwan University

    vii. **The Next Wave of Mixed-Signal Interface Electronics**

        Speaker: Prof. Boris Murmann, University of Stanford

Date: 2013/12/02

Place: National Chiao-Tung University

18. **<u>Chapter Name: Vehicular Technology Society Taipei Chapter (VT06)</u>**

In addition to supporting students to attend international conferences sponsored by IEEE VTS such as IEEE VTC (Spring and Fall) and IEEE APWCS, Taipei chapter also participated the following events:

i. 11/14/2013

Event: Speech

Title: mm-Wave and Sub-mm-Wave System-on-Chip

Speaker: Prof. Frank M.-C. Chang, University of California, Los Angeles, USA

Location: National Chiao Tung University, Hsinchu, Taiwan

Category: Technical

(Event information is attached in the end of the report, labeled by ATT1.)

ii. 05/14/2013

Event: Speech

Title: Capacity-Approaching Low-Density Parity-Check Codes: Recent Developments and Applications

Speaker: Prof. Shu Lin, University of California, Davis, USA

Category: Technical

Location: National Chiao Tung University, Hsinchu, Taiwan

(Event information is attached in the end of the report, labeled by ATT2.)

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**
  ▪ The 17th IEEE International Symposium on Consumer Electronics, June 3-6, 2013.
  ▪ The 6th International Conference on Advanced in Information Technology (ICAIT), July 7-9, 2013.
  ▪ The 19th IEEE International Conference on Embedded and Real-Time Computing Systems and Applications, August 19-22, 2013.
  ▪ The 14'th International Conference on Parallel and Distributed Computing, Applications and Technologies (PDCAT'13), December 16-18, 2013.

➤ **Technical Activities**
  ▪ International Symposium on Biometrics and Security Technologies (ISBAST'13), July 2-5, 2013.

B.4 Students Activities

- Total number of Student branches in the Section

1. **<u>Student Branch Name: IEEE NCTU Student Branch (National Chiao Tung University)</u>**

   Prepared by Bo-Cheng Lai (Student Branch Counselor)

   Student Branch Chair: Bing-Ru Wu

   Student Branch Counselor: Bo-Cheng Lai

2. **<u>Student Branch Name: CE Society Student Branch Chapter at NCTU</u>**

   Prepared by Ti-hao Chiang (Student Branch Counselor)

   Student Branch Chair: TBD

   Student Branch Counselor: Ti-hao Chiang

3. **<u>Student Branch Name: EDS Society Student Branch Chapter at NCTU</u>**

   Prepared by Tuo-Hung Hou (Student Branch Counselor)

   Student Branch Chair: E Ray Hsieh

   Student Branch Counselor: Tuo-Hung Hou

4. **<u>Student Branch Name: IEEE NTU Student Branch (National Taiwan University)</u>**

   Prepared by Zhi-Jing Huang (Student Branch Chair)

   Student Branch Chair: Zhi-Jing Huang

   Student Branch Counselor: Yung-Jen Hsu

5. **<u>Student Branch Name: IEEE NCU Student Branch (National Central University)</u>**

   Prepared by Jen-Hao Chen (Student Branch Chair)

   Student Branch Chair: Jen-Hao Chen

   Student Branch Counselor: Jen-Inn Chyi

6. **<u>Student Branch Name: IEEE YZU Student Branch (Yuan-Ze University)</u>**

   Prepared by Tso-Jung Chang (Student Branch Chair)

   Student Branch Chair: Tso-Jung Chang

   Student Branch Counselor: Heng-Tung Hsu

7. **<u>Student Branch Name: SMC Society Student Branch Chapter at YZU</u>**

   Prepared by Ming-Hung Lin (Student Branch Chair)

   Student Branch Chair: Ming-Hung Lin

   Student Branch Counselor: Chih-Min Lin

8. **<u>Student Branch Name: IEEE NTUST Student Branch (National Taiwan University Of Science & Technology)</u>**

   Prepared by Yu-Chuan Chang (Student Branch Chair)

   Student Branch Chair: Yu-Chuan Chang

   Student Branch Counselor: Shyi-Ming Chen

9. **Student Branch Name: SMC Society Student Branch Chapter at NTUST**

   Prepared by Li-Wei Lee (Student Branch Chair)

   Student Branch Chair: Li-Wei Lee

   Student Branch Counselor: Shyi-Ming Chen

10. **Student Branch Name: IEEE NTOU Student Branch (National Taiwan Ocean University)**

    Prepared by Mu-Der Jeng (Student Branch Counselor)

    Student Branch Chair: TBD

    Student Branch Counselor: Mu-Der Jeng

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

    Prepared by Shih-Fan Shan (Student Branch Chair)

    Student Branch Chair: Shih-Fan Shan

    Student Branch Counselor: Chih-Cheng Hsieh

12. **Student Branch Name: PELS Society Student Branch Chapter at NTHU**

    Prepared by Ching-Ming Lai (Student Branch Chair)

    Student Branch Chair: Ching-Ming Lai

    Student Branch Counselor: Po-Tai Cheng

13. **Student Branch Name: EDS Society Student Branch Chapter at NTHU**

    Prepared by Li-Chiang Chao (Student Branch Chair)

    Student Branch Chair: Li-Chiang Chao

    Student Branch Counselor: Chi-Gang Huang

14. **Student Branch Name: IAS Society Student Branch Chapter at NTHU**

    Prepared by Chia-Tse Lee (Student Branch Chair)

    Student Branch Chair: Chia-Tse Lee

    Student Branch Counselor: Po-Tai Cheng

15. **Student Branch Name: IEEE NCHU Student Branch (National Chung Hsing University)**

    Prepared by Ya-Ling Chang (Student Branch Chair)

    Student Branch Chair: Ya-Ling Chang

    Student Branch Counselor: Ching-Chih Tsai

16. **Student Branch Name: SMC Society Student Branch Chapter at NCHU**

    Prepared by Ya-Ling Chang (Student Branch Chair)

    Student Branch Chair: Ya-Ling Chang

    Student Branch Counselor: Ching-Chih Tsai

17. Student Branch Name: IEEE NCUE Student Branch(National Changhua University of Education)

Prepared by De-Jun Deng (Student Branch Counselor)

Student Branch Chair: Hui-xin Qin

Student Branch Counselor: De-Jun Deng

- Number of Student branches formed in the current year
  - ➢ One: IAS Society Student Branch Chapter at NTHU

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

  1. Student Branch Name: IEEE NCTU Student Branch (National Chiao Tung University)

  Last year, we held a series of study symposiums and open speeches in NCTU. These symposiums are held weekly, and covers topics including new computing unit architecture, heterogeneous computing, compiler design issues and embedded system on FPGA. We invite members from various study fields and introduce the innovative ideas on the market or research accomplishments. We believe that by introducing the fundamental systems and try to hack on it helps attracting more partners to work with us.

**Activities of IEEE student branch at NCTU in 2013 Fall/Winter**		
Date	**Week**	**Activities**
7/04	Summer vacation 1	**Study symposium 1** **Topic**: A Multiple SIMD, Multiple Data Architecture **Speaker**: Bing-Ru Wu (Institute of Electronic Engineering)
7/18	Summer vacation 2	**Study symposium 2** **Topic**: BSP- aspect of implementation **Speaker**: Andy Lee (Institute of Electronic Engineering)
7/25	Summer vacation 3	**Study symposium 3** **Topic**: CUDA Optimization **Speaker**: Yun-Ting Wang (Institute of Electronic Engineering)
8/1	Summer vacation 4	**Study symposium 4** **Topic**: OpenRISC introduction **Speaker**: Bo-Yao Yu (Institute of Electronic Engineering)
8/15	Summer vacation 6	**Study symposium 5** **Topic**: Machine Learning - Bayesian sequential partitioning on GPGPU **Speaker**: Chia-Ying Lee (Institute of Electronic Engineering)
8/22	Summer vacation 7	**Study symposium 6** **Topic**: Or1ksim **Speaker**: Jiun Liang - Lin (Institute of Electronic Engineering)
9/5	Summer vacation 8	**Study symposium 7** **Topic**: SystemC **Speaker**: Sheng-Yen,Chen (Institute of Electronic Engineering)
9/16-20	1	Term begins
10/02	3	**Study symposium 1** **Topic**: The Smart Memory Cell **Speaker**: Bing-Ru Wu (Institute of Electronic Engineering)
10/16	5	**Study symposium 2** **Topic**: Multi-GPU systems **Speaker**: Yun-Ting Wang (Institute of Electronic Engineering)
10/23	6	**Study symposium 3** **Topic**: BSP- aspect of implementation **Speaker**: Andy Lee (Institute of Electronic Engineering)
10/30	7	**Study symposium 4** **Topic**: Data Sharing aware thread **Speaker**: Lu Chin-Fu (Institute of Electronic Engineering)

		Scheduling on GPGPU Systems
11/13	9	**Study symposium 5** **Topic**: Scheduling Techniques for Addressing Shared Resources in Multicore Processors **Speaker**: Bo-Yao Yu (Institute of Electronic Engineering)
11/20	10	**Study symposium 6** **Topic**: GPU Cluster for High-Performance Computing **Speaker**: Chia-Ying Lee (Institute of Electronic Engineering)
11/27	11	**Study symposium 7** **Topic**: Introduction to Heterogeneous System Architecture **Speaker**: Bing-Ru Wu (Institute of Electronic Engineering)
12/4	12	**Study symposium 8** **Topic**: OpenCL and Optimization **Speaker**: Jiun-Liang Lin (Institute of Electronic Engineering)
12/11	13	**Study symposium 9** **Topic**: Introduction of Intel Phi **Speaker**: Sheng-Yen,Chen (Institute of Electronic Engineering)
12/18	14	**Study symposium 10** **Topic**: Common Technology Using in Signal Analysis **Speaker**: Yu Lun Tseng (Institute of Electronic Engineering)
12/25	15	**Study symposium 11** **Topic**: Reconfigurable NoC design for SoC Applications **Speaker**: Chih Heng Kao (Institute of Electronic Engineering)
1/2	16	**Study symposium 12** **Topic**: CTA/Warp Scheduler **Speaker**: Ta-Kan Yen (Institute of Electronic Engineering)
2014.1/13-17	18	Final Exam Week (no activity)

2. **Student Branch Name: EDS Society Student Branch Chapter at NCTU**

- **Improving and Optimizing Reliability in Future Technologies with High-k dielectrics (Apr. 22, 2013)**
  Attendance: Members 30, Guests 80
  Activities: invited talk

- **III-V/Ge CMOS device technologies (Apr. 26, 2013)**

  Attendance: Members 30, Guests 30

  Activities: invited talk

- **TaOx-based resistive switching memory (Oct. 28, 2013)**

  Attendance: Members 20, Guests 70

  Activities: invited talk

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

Event	Date	Contain	Student	Professor
Orientation party	3/13	Introduction of IEEE Student Branch in NCU	All student members	Professors of EE
Studeny Presentation 1	3/27	The Threat of Semiconductor Variability	HENG-JIE WANG, MING-XUAN LIU	CHEN, TAI ZHEN
Laboratory visit	4/2	Labortory: MINE Lab, DSR Lab, MODE Lab	All student members	Professors of EE
Studeny Presentation 2	4/16	HUMANOID ROBOTS	GUAN HUA CHEN, JIE LUO, JEN HAO CHEN	WANG, WENJUN
Studeny Presentation 3	4/23	Disposable electronics & Display of the decade	DENG-JIE YANG, BING HUI CHANG, YAN PING	LIU, JIANNAN
Studeny Presentation 4	5/8	High efficiency solar cell	MING FU CAI, YI XIN LIN, JIA YING LIN	FU, GUXIANG
Studeny Presentation 5	5/15	Conquer the Terahertz Frontier	TING YU LIN , YI XIN LIN, ROU LI WANG	CHEN, TAIZHEN
Studeny Presentation 6	5/29	Chip&brain	GUAN HUA CHEN, JIE LUO	XIN, YUMING
Institution visit	6/5	Institution: AU Optronics Corporation	All student members	Professors of EE
Final party	6/12	Giving award to the best student presentation	All student members	Professors of EE
Orientation party	10/3	Introduction of IEEE Student Branch in NCU	All student members	Professors of EE
Studeny Presentation 7	10/24	Microwave Power Transmission	JEN HAO CHEN, WEI LI	TU, WENHUA
Studeny Presentation 8	10/31	BioSleeve & MYO	JIE LUO, YAN PING LIN	LI, BAILEI
Studeny Presentation 9	11/7	Do you realize the Internet?	ZHEN KAI WANG, YU ZHENG SU	CHEN, TAI ZHEN
Studeny Presentation 10	12/5	sensing your mood	TING YU LIN, ROU LI WANG	CAI, PEIYUN
Final party	12/26	Giving award to the best student presentation	All student members	Professors of EE

4. **Student Branch Name: IEEE YZU Student Branch (Yuan-Ze University)**

- **English Corner: Various Subjects [held on every alternating Tuesdays from 16:00 – 18:00] (Sept.2013 to Dec. 2013)**

  Speaker: YZU IEEE Student Branch.

  Attendance: 20

- **Invited Speaker: Could the Internet hang up on us? A longitudinal global study of Internet packet and data arrival predictability (Dec.9, 2013)**
  Speaker: Dr. Ulrich Speidel University of Auckland, Auckland, New Zealand
  Attendance: 40

- **Invited Speaker: MIMO Coding and Precoding (Dec.11, 2013)**

  Speaker: Dr. Guan Yong Liang,

  Head, Division of Communications Engineering,

  Deputy Director,

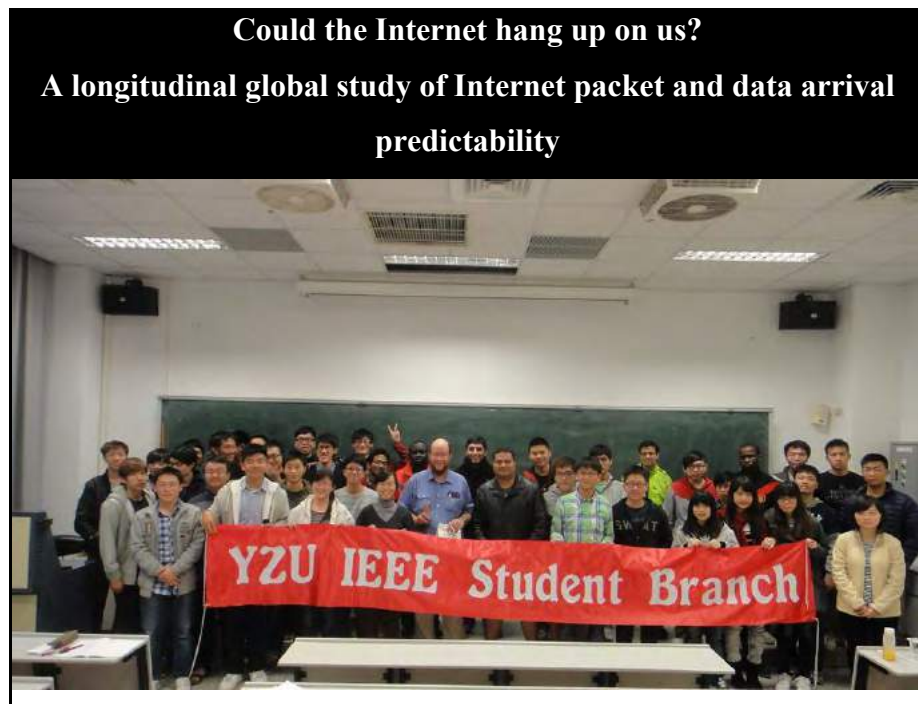 INFINITUS - Infocomm Centre of Excellence,

  School of Electrical and Electronics Engineering

  Nanyang Technological University,

  Nanyang Ave., Singapore.

  Attendance: 42

- **Group Discussion: Green Technologies (Dec.03, 2013)**
  Speaker: YZU IEEE Student Branch
  Attendance: 18

- **Recruiting: Welcoming and Introductory Speech about "YZU IEEE Student Branch Activities" (Sep.04, 2013)**
  Speaker: YZU IEEE Student Branch.
  Attendance: 150+

Could the Internet hang up on us?
A longitudinal global study of Internet packet and data arrival predictability

MIMO Coding and Precoding

Green Technologies

English Corner

5. **Student Branch Name: IEEE NTUST Student Branch (National Taiwan University Of Science & Technology)**

   Six Computational Intelligence Readings of the IEEE SMC Student Branch Chapter at NTUST supported by the IEEE Student Branch at NTUST were held in 2013.

6. **Student Branch Name: EDS Society Student Branch Chapter at NTHU**

   i. **Date: 2013/2/26**

      Venue: Room 104, EECS Building, National Tsing Hua University, Taiwan

      Speaker: Dr. Yung C. Liang (Associate Professor with the Department of Electrical and computer Engineering, National University of Singapore)

      Talk Title: AlGaN/GaN power HEMT devices for future power conversion applications

      Summary of Activities:

      On February 26th, 2013, Dr. Yung C. Liang from National University of Singapore gave us a speech entitled "AlGaN/GaN power HEMT devices for future power

conversion applications". The AlGaN/GaN high electron mobility transistor (HEMT) has drawn great interest in high power and high frequency applications owing to its outstanding material advantages. In this speech, a topical review on the device features will be made, namely on its polarization effects, the surface field plate influence and the trap charges induced current collapse phenomenon during pulse operations. These effects are very important in understanding the AlGaN/GaN power HEMT devices for future energy conversion applications.

Dr. Yung C. Liang first briefly introduced the wide bandgap power semiconductor, and then mentioned the market and growth of power device in these days. He also talked about the relationship between power semiconductor and power electronics and their applications. Next, the power GaN technology like epitaxy growth technology, passivation and integration technology, and high-power MOS-HEMT device technology had been mentioned. At last, he said that we had to completely understand the device characteristic including polarization effect, field reduction by field plate, current collapse phenomenon and so on, so that we can research and development excellent-performance GaN power HEMT devices.

Over 50 participants attended this talk, including students and professors. After the talk, participants know more about the market and the advances in the technology of GaN power HEMT devices.

ii. **Date: 2013/4/10**

Venue: Room 107, EECS Building, National Tsing Hua University, Taiwan
Speaker: Dr. Akio Nakagawa, Nakagawa Consulting Office
Talk Title: Evolution of Silicon Power Devices and Future Possibility
Summary of Activities:

On April 10th, 2013, it is a great pleasure to invite Dr. Akio Nakagaw giving us a speech entitled "Evolution of Silicon Power Devices and Future Possibility". As the power devices were invented, there are many fields they apply. IGBT, which gave an evolution of high power devices, is the most important power devices recently. Dr. Akio Nakagaw has a great contribution to the development of IGBT and thyristor. Therefore, this lecture discussed on the basics of silicon power devices and their future possibility.

Dr. Akio Nakagaw first briefly introduces the evolution of non-latch-up IGBT, about its structure, the change in I-V characteristics and some difficulties it had overcome and some have to solve in the future. Then he talked about the silicon limit of IGBT. He first mentioned how the width of mesa effect the forward voltage characteristic, how the silicon I-V curve limit the IGBT and he also gave us many device's experiment data like "low loss IGBT with Partially Narrow Mesa Structure(PNM-IGBT)", to make us learn more about it. Finally, he introduced the theoretical switching speed limit, power loss analysis and comparison between SiC and Si. In his conclusion, he pointed out that silicon IGBT can still be improved in near future.

Over 50 participants attended this talk, including students and professors. We know more about the silicon power devices and its future possibility after the talk.

iii. **Date: 2013/4/10**

Venue: Room 107, EECS Building, National Tsing Hua University, Taiwan

Speaker: Dr. James Cooper, Purdue University

Talk Tile: Progress, Opportunities, and Challenges for Commercialization of SiC Power Devices

Summary of Activities:

On April 10th, 2013, Dr. James Cooper from Purdue University gave us a speech entitled "Progress, Opportunities, and Challenges for Commercialization of SiC Power Devices". Since 1990 he has explored device technology in SiC. His group demonstrated the first monolithic integrated circuits in SiC, the first DMOS power transistors, and the first self-aligned short-channel DMOSFETs. The group has also developed NVRAMs, CCDs, Schottky diodes, BJTs, IGBTs, SITs, and IMPATT diodes in SiC.

At first, Dr. James Cooper introduced the SiC Power DMOSFET and p-IGBT, their structure is the same only the doping are different. He focused on the structure and operation of the DMOSFET, including the resistance of drift region. Then he mentioned N-channel IGBT for high voltage grid applications, which replace N+ substrate by P+ substrate, and the basic of conductivity modulation. Dr. James Cooper also compared between the PiN diode and N-channel IGBT about their carrier density and potential drop in the drift region. Finally, he talked about the transient simulation of switching and theoretical device comparison. So we can understand where does SiC stand today and where can SiC go tomorrow.

Over 50 participants attended this talk, including students and professors. After the talk, participants learned the physics, design and performance of SiC power devices.

iv. **Date: 2013/11/19**

Venue: Room 511, MS Building, National Tsing Hua University, Taiwan

Speaker: Dr. Yung C. Liang (Associate Professor with the Department of Electrical and computer Engineering, National University of Singapore)

Talk Tile: The current collapse phenomena in GaN power HEMT devices

Summary of Activities:

On November 19th, 2013, it is a great pleasure to invite Dr. Yung C. Liang from National University of Singapore again to give us a speech entitled "The current collapse phenomena in GaN power HEMT devices". Power devices have a great growing in market nowadays, especially for the GaN-base power devices. GaN has drawn great interest in high power and high frequency applications owing to its

outstanding material advantages. In this speech, a topical review on current collapse will be made. This effect is very important to understand the AlGaN/GaN power HEMT devices.

At first, Dr. Yung C. Liang briefly introduces the market in power device market, and the applications for these power devices. He also mention about some limitations of the devices because of material properties, and the important parameter for power devices. Then he talked some conventional power devices for silicon, like Insulated Gate Bipolar Transistor and Superjunction Power MOSFET. Next, Dr. Liang introduced the AlGaN/GaN Power HEMT and some of this device's basic conception. At last, he talked about some difficulties like normally-on, current collapse, and temperature influence and some solutions for these problems in AlGaN/GaN Power HEMT. With these solutions, we can research and development excellent-performance GaN power HEMT devices.

Over 50 participants attended this talk, including students and professors. We know more about the silicon power devices and its future possibility after the talk.

B.5 Affinity Group Activities

- WIE
  - ➢ A general meeting for female members was organized as a side meeting of the 24rd VLSI Design / CAD Symposium on 8/6 in Crowne Plaza Hotel KAOHSIUNG E-DA WORLD. During the meeting, female members were catching up with one another. And these members showed their support by assigning on the petition form for forming Taiwan WIE.
  - ➢ Forming Taiwan WIE: On 9/24, the WIE Group petition form was completed and sent to the IEEE REGIONAL ACTIVITIES for its approval. On 10/5, the approval from Women in Engineering Committee Chair Nita Patel was received. On 12/4, the approval from Director Toshio Fukuda was received.

B.6 Awards & Recognition Activities

- Award constituted by the section
  N/A
- Award(s) received from R10
  N/A
- Award(s) received from IEEE HQ
  N/A

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

- Newsletter (name and number of issues in the year)

  IEEE Taipei Section publishes e-newsletter bimonthly through the section website. Issues published in the year 2013 are listed as follows:

Release Date	E-News URL
02/28/2013	http://www.ieee.org.tw/newsletter/vol23/epaper_vol23_bar_uni.html

- Home Page of the section (give the URL and frequency which it is updated)
  1. IEEE Taipei Section: http://www.ieee.org.tw/
  2. IEEE NTU Student Branch: http://www.ieee.org.tw/chapters/index.php?web_class=35
  3. IEEE NTUST Student Branch: http://studentbranch.csie.ntust.edu.tw/
  4. IEEE SMC Society Student Branch Chapter at NTUST:
     http://studentbranch.csie.ntust.edu.tw/smc/
  5. IEEE NCU Student Branch: http://ieee.ncu.edu.tw/
  6. IEEE NTHU Student Branch: http://www.ieee.org.tw/chapters/index.php?web_class=44
  7. IEEE YZU Student Branch: http://www.ieee.org.tw/chapters/index.php?web_class=38
  8. IEEE NCTU Student Branch: http://www.ieee.org.tw/chapters/index.php?web_class=36
  9. IEEE NCHU Student Branch: http://www.ieee.org.tw/chapters/index.php?web_class=45
  10. IEEE NTOU Student Branch: http://www.ieee.org.tw/chapters/index.php?web_class=40
  11. SMC Society Student Branch Chapter at YZU:
      http://www.ieee.org.tw/chapters/index.php?web_class=50
  12. PELS Society Student Branch Chapter at NTHU:
      http://www.ieee.org.tw/chapters/index.php?web_class=51
  13. IEEE NCUE Student Branch: http://www.ieee.org.tw/chapters/index.php?web_class=41
  14. Antennas and Propagation Society (AP03):
      http://www.ieee.org.tw/chapters/index.php?web_class=3
  15. Broadcast Technology Society (BT02):
      http://www.ieee.org.tw/chapters/index.php?web_class=5
  16. Computer Society (C16): http://www.ieee.org.tw/chapters/index.php?web_class=6
  17. Circuits and Systems Society (CAS04):
      http://www.ieee.org.tw/chapters/index.php?web_class=7
  18. Consumer Electronics Society (CE08):
      http://www.ieee.org.tw/chapters/index.php?web_class=8
  19. Communications Society (COM19):
      http://www.ieee.org.tw/chapters/index.php?web_class=10
  20. Components Packaging, and Manufacturing Technology Society (CPMT21):
      http://www.ieee.org.tw/chapters/index.php?web_class=12
  21. Control Systems Society (CS23):
      http://www.ieee.org.tw/chapters/index.php?web_class=13
  22. Electron Devices Society (ED15):
      http://www.ieee.org.tw/chapters/index.php?web_class=15

23. Electromagnetic Compatibility Society (EMC27):
    http://www.ieee.org.tw/chapters/index.php?web_class=17

24. Industrial Electronics Society (IE13):
    http://www.ieee.org.tw/chapters/index.php?web_class=19

25. Systems, Man, & Cybernetics Society-Taichung Chapter(SMC28):
    http://www.ieee.org.tw/chapters/index.php?web_class=41

26. Information Theory Society (IT12):
    http://www.ieee.org.tw/chapters/index.php?web_class=21

27. Lasers & Electro-Optics Society (LEO36):
    http://www.ieee.org.tw/chapters/index.php?web_class=22

28. Microwave Theory and Techniques Society (MTT17):
    http://www.ieee.org.tw/chapters/index.php?web_class=24

29. Oceanic Engineering Society (OE22):
    http://www.ieee.org.tw/chapters/index.php?web_class=25

30. Power Electronics Society (PEL35):
    http://www.ieee.org.tw/chapters/index.php?web_class=20

31. Power Engineering Society (PE31):
    http://www.ieee.org.tw/chapters/index.php?web_class=26

32. Robotics & Automation Society (RA24):
    http://www.ieee.org.tw/chapters/index.php?web_class=29

33. Signal Processing Society (SP01):
    http://www.ieee.org.tw/chapters/index.php?web_class=31

34. Solid-State Circuits Society (SSC37):
    http://www.ieee.org.tw/chapters/index.php?web_class=32

35. Vehicular Technology Society (VT06):
    http://www.ieee.org.tw/chapters/index.php?web_class=33

36. Systems, Man & Cybernetics (SMC28):
    http://www.ieee.org.tw/chapters/index.php?web_class=30

37. Computational Intelligence Society (CIS11):
    http://www.ieee.org.tw/chapters/index.php?web_class=9

38. Geoscience & Remote Sensing Society (GRS29):
    http://www.ieee.org.tw/chapters/index.php?web_class=18

39. Education Society (E25): http://www.ieee.org.tw/chapters/index.php?web_class=14

40. Magnetics Society (MAG33): http://www.ieee.org.tw/chapters/index.php?web_class=23

41. Engineering in Medicine and Biology (EMB18):
    http://www.ieee.org.tw/chapters/index.php?web_class=16

42. Product Safety Engineering (PSE43):
    http://www.ieee.org.tw/chapters/index.php?web_class=27

43. Reliability Society (RL07): http://www.ieee.org.tw/chapters/index.php?web_class=28

44. Instrumentation & Measurement Society (IM09):
    http://www.ieee.org.tw/chapters/index.php?web_class=47

45. Industry Applications Society (IA34):
    http://www.ieee.org.tw/chapters/index.php?web_class=48

46. Sensors Council (SEN39): http://www.ieee.org.tw/chapters/index.php?web_class=54

- Other means of contacts with section members

  Also, in order to further improve connections among its members, Taipei Section has formed its Facebook page in 2011. The page is located at

  https://www.facebook.com/IEEE.Taipei.Section.fans .

B.8 Industry Relations

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

B.9 Humanitarian Technology Activities

B.10 Community Activities

- IEEE Social activities (Family day, IEEE day, Engineers Week)"

PART C - OTHERS

C.1 Relationship with National Societies

IEEE Taipei Section has Technical Sponsor the following conference:

- The 17th IEEE International Symposium on Consumer Electronics, June 3-6, 2013.
- The 6th International Conference on Advanced in Information Technology (ICAIT), July 7-9, 2013.
- The 19th IEEE International Conference on Embedded and Real-Time Computing Systems and Applications, August 19-22, 2013.
- The 14'th International Conference on Parallel and Distributed Computing, Applications and Technologies (PDCAT'13), December 16-18, 2013.

C.2 Special Events

- Taipei Section issued the E-NEWS: Issue first issue electronic newspaper since May 26 of 2009, adopt bimonthly to take 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.

C.3 Problems to be Anticipated

- Because of economic crisis, most industry members has no budget that supported
  from company to join industry activity. It introduces risk in membership development
  and billable activity.

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

- Support will promote joint activities for the promotion of education and other summer camps,
  to academic conferences, research units join the promotion, promotion of staff to apply for
  membership benefits, to set up a booth to provide large-scale academic conference
  membership and membership services and consulting for the General Assembly of the Council
  Membership recruitment shows a positive increase in the number of academic and industry
  members.

PART D - GOALS AND PLANS

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

➢ Taipei Section

- Rendering Awards (Best Paper Award)

  We will plan out best Paper Awards for stimulating chapter student
  members' effort on research. Each year, we will release the chapter list.
  Each chapter can recommend 1-2 PhD thesis to IEEE Taipei Section. We
  will group a selection committee to choose the superior (3-5 PhD) . The
  winners and their supervisors can get award medal. They also can publish
  their work on IEEE Taipei Section Newsletter. It may encourage student
  focus on their research work.

➢ **WIE**

  With the kind invitation of Wan-Thai Hsu, General Chair of 2014 IEEE
  International Frequency Control Symposium (IFCS), we will put together a
  WIE lunch meeting during the conference. IFCS 2014 will be held in TICC,
  Taipei, Taiwan from May 19-22 2014. The event is set up to be a luncheon
  speech at 12:20pm, 5/21/2014, 4F VIP room, Taipei International
  Conference Center. WIE attendee will have a lunch meeting with two
  speakers - one from Taiwan and one from US to share their experience in
  engineering. Moreover, a general meeting for WIE members will be

organized as a side meeting of the 25rd VLSI Design / CAD Symposium in this summer.

- **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: Circuits and Systems Society Taipei Chapter (CAS04)**

  Based on our previous successful experience and operation, as well as the feedback from the event attendees and local members, in 2014, the IEEE Circuits and Systems Society (CASS) Taipei Chapter plans to continue its effort in the following areas:
  - Membership promotion
  - Inviting speakers to give short courses, tutorials, and lectures
  - Co-sponsoring international and domestic workshops and conferences
  - Networking with CASS Chapters in Region 10
  - More involved in university student activities
  - Continuing website improvement

- **Chapter Name: Control Systems Society Taipei Chapter (CS23)**
  - The 11th IEEE International Conference on Control & Automation (IEEE ICCA 2014)
  - 2014 National Symposium on System Science and Engineering (NSSSE 2014).
  - Will be held in more than one workshop.
  - Invite at least two internationally renowned scholars to deliver more than four lectures in different universities.
  - Regularly hold the CSS team meeting.

- **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 2013.
  - In 2013, about 20 new student members were recruited with the assistance from our professor members.
  - A new student branch chapter, NTU EDS Student Chapter, was established in 2013.
  - Need to work more on the promotion of IEEE senior members.

- **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.

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

   EMC Taipei Chapter will continue to progress in

   ▪ holding one EMC technical workshop per season,

   ▪ holding one national EMC conference per year,

   ▪ preparing the APEMC'15 international symposium in Taipei.

➢ **Chapter Name: Industrial Electronics Society & Power Electronics Society Taipei Chapter (IE13 /PEL35)**

   ▪ **Planned Activity 1:Founding and sponsoring an international conference-IGBSG 2014**

   The 1st International Conference on Intelligent Green Building and Smart Grid (IGBSG 2014) will be held at the National Taiwan University of Science and Technology(NTUST) in Taipei, Taiwan on 23-25 April 2014. The objective of IGBSG 2014 is to provide a forum for presenting and discussing the latest developments in building/home communication technologies, e-applications, and green building technologies for a wide range of uses in intelligent buildings and smart grids. In addition to submitted papers, speakers will be invited from academia, industry, and government agencies to present novel technologies and products that address these topics. On-site demos will be held from companies and research organizations involved with IGBSG-related activities.

   Papers are called for both oral and poster presentations of topics on power electronics, communications, e-applications, green building and smart-grid technologies of interest to researchers, service providers, consumer electronics manufacturers, or network-solution implementers who develop products, provide quality customer service, support end users, and provide energy-management solutions for the intelligent buildings and smart-grid market. Submitted papers should be two to four pages in length and should follow the standard IEEE conference paper format. Papers presented in conference will be included in IEEE Xplore Digital Library (under application).

   Conference areas of interest include (but not limited to):

● Green building and smart-grid technologies ○ Green energy and smart grid for buildings ○ Status of green buildings and smart-grids ○ Intelligent and green lighting technologies ○ Electric vehicles and components ○ Renewable energy research and applications	● Power electronics technologies ○ Power electronics for energy saving ○ Machine design and motor drives ○ Power-electronic devices and systems ○ Switching power supplies ○ Power integrated circuits
● Building and Home Communication Technologies ○ Ubiquitous building/home network access ○ Radio propagation and channel modeling ○ MIMO communications and smart antennas ○ Cognitive radios and software defined radios ○ Signal processing for digital communication	● Communication Networks and Applications ○ Building management/maintenance networks ○ Intelligent building/home optical and wireless technologies ○ Multiple access ○ Ad hoc networks and sensor networks ○ Green communication networks and applications
● Emerging technologies for healthcare and biomedical applications ○ Bio-electronic devices and systems	● e-Applications and related technology ○ Distributed home multimedia and entertainment ○ Building and home security and safety systems

○ Telemedicine and remote monitoring ○ Homecare, healthcare, and e-health ○ Biomedical systems and applications	○ Intelligent and flexible in-home displays and interfaces

- **Planned Activity 3: 2014 Taiwan-Japan Symposium on Power Conversion (TJSPC 2014)**

- **Planned Activity 2: Sponsoring an international conference- IFEEC 2015**

  The 2nd International Future Energy Electronics Conference 2015 (IFEEC 2015) will be held in Taipei, Taiwan on November 8-11, 2015. This conference is an international forum for presentation and discussion of the state of the art technology in Energy Electronics and related topics. Papers presented in the conference will be included in the IEEE Xplore Digital Library. Owing to the inevitable global resource crisis, IFEEC 2015 is mainly focused on the topics of energy-saving systems, renewable energy, energy storage, novel topology for converters and inverters, lighting, innovative analog and digital controls, and the applications not limited to the aforementioned topics.

  Note: IFEEC has applied for Ei Index. The digest is a summary of your paper including the digest title, abstract, digest text and references. Maximum 6 pages. The digest should not be a cropped version of the full paper.

  Conference areas of interest include (but not limited to):

• Power Electronics Technologies ○ AC-DC Converters ○ DC-DC Converters ○ Power Electronics Applications ○ Multi-level Converters ○ Power Electronics for Energy Saving	• Renewable Energy Research and Applications ○ PV Systems ○ Wind Power Systems ○ Electric Vehicles ○ Wireless Power Transfer ○ Distributed Energy System
• Lighting Technologies and Applications ○ LED Driver Circuit ○ Lighting Driver System ○ Lighting Applications ○ Electronic Ballast	• Motor Drives ○ Electric Machines and Drives ○ Sensor and Sensor-less Control for Motor Drives ○ Modeling and Control ○ AC and DC Motor Drives
• Devices and Components ○ Power Electronic Devices and Components ○ Energy Storage Devices ○ Power Integrated Circuits ○ Fuel Cell Technologies	• Smart-Grid Technologies ○ Green energy and smart grid for buildings ○ Status of green buildings and smart-grids ○ Impact of Smart-Grid Technologies ○ Green communication networks and applications

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

  Forthcoming events in 2014 include:

- The 2014 Spring Workshop on Information Theory and Communications will be held in Kaohsiung, Taiwan, by the National Kaohsiung Normal University (NKNU) on Jan. 23-24, 2014.

- The time and place for the 2014 Fall Workshop on Information Theory and Communications will be determined at the Spring Workshop.

- Promote the 2014 Summer School on Information Theory to be held in Hong Kong right after ISIT 2014.

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

- 2014 IEEE Distinguished Lecturer Progress
  - Prof. Hans-Benjamin Braun plans to visit Taiwan this June.
  - Prof. Ron Jansen would come to Taiwan in the second week of March.
  - Prof. Jonathan Coker and Prof. Tim St Pierre are being contacted for future visit to Taiwan.

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

In order to promote IEEE Reliability Society and serve its members in Taiwan, we will continuously organize talks and presentations of world-class research and participate in the international conferences.

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

In 2013, IEEE Taipei Section Sensors Council (SEN39) has launched a new chair, Prof. Hsiao-Wen Zan. Past chair person, Prof. Paul C. P. Chao, became the vice-chair in SEN 39. Prof. Zan and Prof. Chao have long-term collaboration research activity. Hence, they fluently work together to continuously stimulate "sensor" activity in Taiwan. Since "sensor" is an interdisciplinary technology, SEN 39 aims to provide more chances for people from different areas to interact with each other.

In 2013, they formed mini-workshop to invite professors and students from different universities in Taiwan. Attendees are from different areas like electrical engineering, chemistry, physics, electro-optical engineering, etc. Two mini-workshops were held in 2013. In the mini-workshop, the student attendees from different research areas made brief introduction of their works. Then, students and professors can interact and collaborate with expertise from different "sensor" areas. With these activities, SEN39 hope to stimulate students' interest on sensor-related technology, also to enrich researchers' knowledge on sensor technology.

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

  i. Cosponsor 2014 VLSI/CAD Symposium, Aug 2014
  ii. Cosponsor 2014 Symposium and Engineering, Medicine, and Biology Application (SEMBA), Jan, 2014
  iii. Cosponsor 2014 IC Design Contest under Taiwan Ministry of Education (MOE) --- The student winners would get free IEEE SSCS student membership for one year.

➢ **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 activities, particularly IEEE VTS Distinguished lectures, will be held in 2014.

- We will co-host and sponsor the conference IEEE VTS Asian-Pacific Wireless Communications Symposium (APWCS), which is to be held in Ping-Tung ,Taiwan, in August of 2014.

➢ **Student Branch Name: EDS Society Student Branch Chapter at NCTU**

Because many student members graduated each year, the target is to recruit more new students in 2013.

- In 2013, around 10 new student members have been recruited with the assistance from our professor members.
- Hope to recruit more students, 20 student members, in 2014.
- Need to have more interaction with student members and cooperate with other student branches in Taipei section.

➢ **Student Branch Name: IEEE YZU Student Branch (Yuan-Ze University**

Activities	Subject
English Corner	Various Subjects
Recruiting	Welcoming and introduction speech about "YZU IEEE student branch activities".
Invite Speaker	Various Subjects

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

- The Special Topic on Implementation competitions.
- The Summer intern project.
- IAS/PELS Taipei Lectures Series : Power semiconductor devices, SiC , IGBT.

D.2 Goals and Future Plans

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

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

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

In 2014, we plan to hold one DLP lecture, one to two invited lectures, some networking

activities, and member recruiting activities. A brief introduction and planned schedule about those activities are described as follows.

- Invited Lecture:

  Speaker : to be invited

  Date : around the bottom of April, 2014

- Support National Collegiate IC Design Contest, March~April, 2014

  Number of attendees: 1000

  Invite the awardees to join IEEE and support their first-year member fee

- Annual meeting of IEEE CASS Taipei Chapter

  Location: Fullon Hotel, Taichung, Taiwan

  Date: around early August, 2014

- Distinguished Lecture:

  Speaker : to be invited

  Date : around early September, 2014

- Host the visit from the CASS chapters of Japan

  Attendees : to be confirmed

  Date : around middle October, 2014

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

We plan to do the following few events

- Prepare to host the upcoming ICCE-TW 2014 conference
- Host several talks in NCTU and other universities
- Expand the student chapters universities

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

- 01/23/2014~01/24/2014

  2014 Spring Workshop on Information Theory & Communications, Tainan, Taiwan

  Activity: Seven invited speeches and one member meeting

  Homepage: http://www.2014itcom.nknu.edu.tw/index.php

- 02/19/2014

  [Dr. George Chrisikos] 2014 DLT - Singapore, Taipei and Hong Kong

  Activity: One invited speeches

  Topic: 「Traffic Management and Spectrum Aggregation in Mobile Broadband」

- 03/07/2013

  2014 Taiwan Spring School on Information Theory and Communications, Taipei, Taiwan

  Activity: Fifteen presentations

- 08/04/2014~08/08/2014

2014 Summer School on Information/Communication Theory and Technologies, Hsinchu, Taiwan

Activity: Nine courses on communications theory by nine invited speakers

- 08/14/2014~08/15/2014

    2014 Fall Workshop on Information Theory & Communications, Chiayi, Taiwan

    Activity: Eight invited speeches and one member meeting

- *2014 Distinguished Lecturer Tours*

> **Chapter Name: Control Systems Society Taipei Chapter (CS23)**
- The 11th IEEE International Conference on Control & Automation (IEEE ICCA 2014)
- 2014 National Symposium on System Science and Engineering (NSSSE 2014).
- Will be held in more than one workshop.
- Invite at least two internationally renowned scholars to deliver more than four lectures in different universities.
- Regularly hold the CSS team meeting.

> **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 Council.

- 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 2014, several major tasks have been planned as below-

- Help of the local society to seek for IEEE EDS Co-sponsorship

    In 2013, an international symposium, eMDC, via the help of the chapter has acquired the EDS technical co-sponsorship. And, in 2014, one other event, SiP Technology forum will also look for EDS co-sponsorship. Help is needed from the local chapter EDS officers. One international conference, 2014 International Symposium on Next generation Electronics (ISNE), has secured the IEEE EDS technical co-sponshorship, been approved through the help of chapter officer.

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 5-10senior members will be filed and approved in 2014.

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

The goals of EMC Taipei Chapter 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 in 2012 and 2013. They will aggressively participate in accomplishing the activities stated in D.1 to achieve the Chapter goals.

➤ **Chapter Name: Instrumentation & Measurement Society (IM09)**

Since 2009, the I&M Society Taipei Section Chapter has continuously followed the steps and reached the goals that we set up. Marching to our fourth year of establishment, we need to be stronger and have made the following goals and plans,

- To add 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.

To carry out these goals, the chapter has set up the following plans for year 2014.
- To hold at least 10 seminars, talks, or short courses.
- To organize a Taiwan delegation to attend 2014 International Instrumentation and Measurement Technology Conference (I^{2}MTC).
- To provide technical sponsorship to at least 2 international activities.
- To strengthen cross-chapter activities by joint visits or activities.

➢ **Chapter Name: Information Theory Society Taipei Chapter (IT12)**
- Promote workshop participation by accepting poster submissions from outside of Taiwan in future workshops.
- Promote student networking by adding a student session held in parallel with the panel discussion session in future workshops.

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

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

Promoting IEEE Reliability Society and serve its members in Taiwan.

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

As aforementioned, IEEE Taipei Section Sensors Council (SEN39) aims to provide more chances for people from different "sensor" areas to interact with each other because "sensor" is an interdisciplinary technology. SEN39 hope to stimulate students' interest on sensor-related technology, also to enrich researchers' knowledge on sensor technology.

➢ Based on the success of the two mini-workshops in 2013, in future, SEN 39 plans to expand the workshop scale to include more students and professors in the workshop. Also, SEN 39 plans to join activities such as the "lab exhibition" in campus and to support the talks given by foreign "Sensor" researchers in Taiwan. With the effort, we can further promote the sensor works to both students and professors. Also, we can further accumulate sensor-related people in Taiwan to enhance the strength of sensor community in Taiwan.

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

We plan to do the following few events

▪ Sponsor the MPEG resource sharing program

▪ Prepare to continue the summer school program at NCTU

▪ Host several DLP talks in NCTU and other universities

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

  i. Membership promotion: Increase the member of IEEE SSCS

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

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

▪ We will co-host the 11th IEEE VTS Asia Pacific Wireless Communications Symposium (APWCS 2014), to be held in Ping-Tung, Taiwan, August 2014. We will try to promote the activity to society members.

▪ We plan to do membership promotion and hope to have more members enrolled in 2014 and 2015.

▪ We plan to offer some VTC2014-Fall Travel Grants to local Ph.D. students who have student membership of the VT society.

▪ We plan to invite the following scholars to Taiwan for research interactions and/or possible research collaborations:

Prof. Yuguang (Michael) Fang, University of Florida, USA. Editor-in-Chief, Transactions on Vehicular Technology. IEEE Fellow.

Prof. Sherman Shen, University of Waterloo, Canada. IEEE VTS Distinguished Lecturer. IEEE Fellow.

Prof. Gordon Stüber, Georgia Institute of Technology, USA. IEEE VTS Distinguished Lecturer. IEEE Fellow.

Prof. Xi Zhang, Texas A&M University, USA. IEEE VTS Distinguished Lecturer.

Prof. Xiang-Gen Xia, University of Delaware, USA. IEEE Fellow.

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

Keep weekly meetings and invite guest speaker from cutting-edge fields

- **Student Branch Name: EDS Society Student Branch Chapter at NCTU**
  - The branch will regularly invite at least 4 invited speakers from overseas in stimulating the academic research, encouraging DL from overseas. These talks are open to university students and engineers in the Hsinchu Science Park.
  - Promoting of new members- a target of 10-20 new members will be filed in 2014.
  - Arrangement of our student members to have a tour of science park companies.
  - Through the help of the ED Taipei chapter to participate in various workshops, conferences for students training, membership promotion in the semiconductor areas.

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

Activities	Subject
Introduction to Countries and Their Culture	Multicultural Discussion
Android/IOS App Contest	Contest
Graduation Projects	Counseling

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

  We need to be more known by students and help more students get familiar with IEEE. Since many students in NTHU still don't know our existence and what we do, by holding more activities, we can let more people know about us and receive the help we can give.

- **Student Branch Name: IEEE NTUST Student Branch (National Taiwan University Of Science & Technology)**

  Six Computational Intelligence Readings of the IEEE SMC Student Branch Chapter at NTUST supported by the IEEE Student Branch at NTUST will be held in 2014.

- **Student Branch Name: EDS Society Student Branch Chapter at NTHU**

  Here are the planned activities in 2014. In addition, we expect to hold regular membership promotion activities. The requested subsidy will be used to support:
  - Regular seminars- in conjunction with the regular seminar events in the campus, we will arrange few invited speakers, including experts from industry and professors from academia in the 2014 Spring and Fall semesters.
  - Social events such as gatherings for members, study group and introduction to IEEE EDS for membership promotion.
  - On-site visit to the Science Park companies, in Hsinchu and Taichung (central of Taiwan), in conjunctions with the companies' open house activities.

Balance Sheet
End of FY 2014

Financial Row	Amount
Current Assets	
Bank	
70345 - Saving Bank TAIPEI	NT$972,698.00
70346 - Taiwan Business Bank TAIPEI	NT$2,055,469.00
Total Bank	**NT$3,028,167.00**
Total Current Assets	**NT$3,028,167.00**
Other Assets	
14049 - Non-IEEE Investments (Other)	NT$2,000,000.00
14100 - Non-IEEE Investments (CD)	NT$3,000,000.00
Total Other Assets	**NT$5,000,000.00**
Current Assets Less Current Liabilities	**NT$3,028,167.00**
Total Assets Less Current Liabilities	**NT$8,028,167.00**
Long Term Liabilities	
74246 - Reserve Allocation Payable	NT$972,313.34
Total Long Term Liabilities	**NT$972,313.34**
Total Assets Less Total Liabilities	**NT$7,055,853.66**
Capital and Reserves	
Retained Earnings	NT$7,055,853.66
Net Income	NT$0.00
Total Capital and Reserves	**NT$7,055,853.66**

Profit and Loss
From Dec 2013 to Adjust 2014

Financial Row	Amount
Sales	
2.10 - Meetings & Social Events	NT$4,590,259.00
3.10 - Rebate from IEEE HQ	NT$682,513.00
3.34 - IEEE HQ & Societies	NT$1,404,254.00
3.45 - Non-IEEE CB Account Interest	NT$53,372.00
Total - Sales	**NT$6,730,398.00**
Gross Profit	**NT$6,730,398.00**
Overheads	
4.10 - Meetings & Social Events Expense	NT$3,768,057.00
4.70 - Professional Activities Expense	NT$120,955.00
4.80 - Student Activities Expense	NT$81,000.00
4.90 - Other Program Expenses	NT$826,672.00
5.20 - Travel Expense	NT$644,744.00
6.10 - Postage & Supplies	NT$3,781.00
Total - Overheads	**NT$5,445,209.00**
Operating Profit	**NT$1,285,189.00**
Net Profit/(Loss)	**NT$1,285,189.00**