IEEE Taipei Section

Annual Report 2024

Prepared by
Bo-Cheng Lai
Secretary (2023/2024)

Pei-Wen Li
Chair (2023/2024)

Suggested Section Report Format

PART A - SECTION SUMMARY

A.1 Executive Summary

- Section Executive Committee Member List

Section Officer (2023-2024)

Chair
Prof. Pei-Wen Li (National Yang Ming Chiao Tung University)
Email: pwli@nycu.edu.tw

Vice Chair
Prof. Li-Wei Ko (National Yang Ming Chiao Tung University)
Email: lwko@nycu.edu.tw

Secretary
Prof. Bo-Cheng Lai (National Yang Ming Chiao Tung University)
Email: bclai@nycu.edu.tw

Treasurer
Prof. I-Fang Chung (National Yang Ming Chiao Tung University)
Email: ifchung@nycu.edu.tw

Membership Development
Distinguished Prof. Yen-Lin Chen (National Taipei University of Technology)
Email: ylchen@ntut.edu.tw

Professional Activities
Distinguished Prof. Ai-Chun Pang (National Taiwan University)
Email: acpang@csie.ntu.edu.tw

Student Activities
Prof. Tien-Kan Chung (National Yang Ming Chiao Tung University)
Email: tkchung@nycu.edu.tw

Educational Activities
Associate Prof. Yu-Chih Huang (National Yang Ming Chiao Tung University)
Email: jerryhuang@nctu.edu.tw

Women in Engineering
Prof. Hsiao-Wen Zan (National Yang Ming Chiao Tung University)
Email: hsiaowen@mail.nctu.edu.tw

Industry Relations Coordinator
Prof. Bor-Sung Liang (MediaTek)
Email: bs.liang@mediatek.com

Industry Relations Coordinator
Principal Engineering Scientist Yi-Pai Huang (Apple)
Email: yh492@g2.nctu.edu.tw

Information Services
Associate Prof. Kun-Chih Chen (National Yang Ming Chiao Tung University)
Email: kcchen@nycu.edu.tw

Conference Activities

Assistant Prof. E-Ray Hsieh (National Central University)
Email: erayhsieh@cc.ncu.edu.tw

- Section Highlights
  - Taipei Section has 2 newly elevated IEEE Fellow of 2024.
  - Taipei Section organized 2024 Lifetime Achievement Award, Outstanding Chapter/Student Chapter Award in 2023 and 2024, Best PhD Dissertation Award, and Best Master Thesis Award in 2023 and 2024.
- Major Events (International, National)
  - **Sponsor**

Category	Meeting	Date
Administrative	Sectional Officer Meeting	2024.05.03
	Section Executive Committee Meeting	2024.03.01 2024.08.30
	Taipei Section Annual Meeting	2024.08.30

  - **Co-sponsor**

Category	Meeting	Date
Technical (Advertisement)	CMOS-enabled biosensing for precision medicine and health (SSC37)	2024.12.30
	Robot engineering education & Promotion experiences (E25)	2024.12.20
	SRAM-based In-Memory Computing Hardware: Analog vs Digital and Macros to Microprocessors (SSC37)	2024.12.17
	AI Workshop in Quantum Computing and Applications (SMC28)	2024.12.06
	The 8th Symposium on Smart Life for Next Generation (EMC27)	2024.12.06
	Verification of Electronic Engineering Students' Industrial Programming Skills (BT02)	2024.12.06
	SSCS Taipei Chapter 2025 ISSCC Taipei Press Conference (SSC37)	2024.11.26
	The Optics & Photonics Taiwan, International Conference-Annual Meeting of Taiwan Photonics Society, 2021(PHO36)	2024.11.26-29
	Testing standards and inspection plans for 6G chip systems (EMC27)	2024.10.23
	The twelfth annual IEEE Conference on Communications and Network Security (IEEE CNS) 2024 (Taipei/Tainan Sections Chapter	2024.09.30-10.04

	RL07)	
	Technical Discussion on Electrochemical DNA Biosensors (ED15)	2024.09.12
	ARIS2024(CS23)	2024.08.22-25
	21TH TAIWAN MICROMOUSE AND INTELLIGENT ROBOT CONTEST (E25)	2024.08.17-19
	IEEE International Conference on Consumer Electronics – Taiwan (ICCE-TW) (CT08)	2024.07.09-11
	7th International Workshop on Ultraviolet Materials and Devices (IWUMD 2024), (PHO36)	2024.06.02-06
	Design Challenges in Precision Continuous-Time Delta Sigma Data Conversion (SSC37)	2024.05.29-30
	Designing a hardware solution for deep neural network training (SSC37)	2024.03.15
	Workshop on Synthesis and System Integration of Mixed Information Technologies (SASIMI 2024) (CEDA44)	2024.03.11-12
	YP Program, 2024 IEEE International Conference on Consumer Electronics (YP)	2024.01.08
Professional Development	IEEE Photonic Society Annual meeting & OPTIC 2024, (PHO36)	2024.11.28
	Photonics Students summer camp for Undergraduate students, (PHO36)	2024.08.12-14
Social	Creation and Inheritance of WIO prosperous Life, (PHO36)	2024.11.26

- **Major Chapter Activities**
  - Encourage members to participate in IEEE activities.
- **Awards**
  - 2024 Lifetime Achievement Award: Prof. Chorng-Kuang Wang, Prof. Li-Chen Fu, Prof. Jing-Yang Jou.
  - 2023 Outstanding Chapter Award: Solid-State Circuits Society Taipei Chapter (SSC37)
  - 2024 Outstanding Chapter Award: Circuits and Systems Society Taipei Chapter (CAS04)
  - 2024 Outstanding Student Branch/Chapter Award: ED Society (EDS) Student Branch Chapter at NCTU
  - 2023/2024 Best PhD Dissertation Award and 2023/2024 Best Master Thesis Award.

A.2 Financial Report

- Summary (as per submitted onNextGen)

- 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 2024 was NT$5,671,276, including NT$630401 (USD$19361.4) of 2024 rebate. The total expenditures were NT$5,080,759.

The final balance at the End of 2024 is NT$17,240,961 and USD$20009.63 in CB account.

PART B - ORGANIZATIONAL ACTIVITIES

B.1 Membership Development Activities

- Total number of active members in the past 4 years.

IEEE Grade	2021 Members	2022 Members	2023 Members	2024 Members
Affiliate	46	40	45	59
Associate	49	32	45	65
Fellow	96	84	80	77
Graduate Student	282	312	362	575
Life Fellow	38	41	41	56
Life Member	32	29	30	43
Life Senior	18	16	22	32
Member	1628	1341	1383	1703
Senior Member	388	416	451	465
Student	111	116	176	232
Total	**2688**	**2427**	**2635**	**3307**

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

B.2 Chapter Activities

- Total number of Chapters in the Section: 36

1. **Chapter Name: Antennas and Propagation Society Taipei Chapter (AP03)**
   Chapter Chair: Ding-Bing Lin
   Title and Affiliation: Professor, Department of Electronic and Computer Engineering, National Taiwan University of Science and Technology
   Email: dblin@mail.ntust.edu.tw

2. **Chapter Name: Broadcast Technology Society Taipei Chapter (BT02)**
   Chapter Chair: Shih-Chia Huang
   Title and Affiliation: Professor, Department of Electronic Engineering, National Taipei University of Technology
   Email: schuang@ntut.edu.tw

3. **Chapter Name: Computer Society Taipei Chapter (C16)**
   Chapter Chair: Yuh-Jye Lee
   Title and Affiliation: Research Fellow, Institute of Information Science, Academia Sinica
   Email: yuh-jye@citi.sinica.edu.tw

4. **Chapter Name: Circuits and Systems Society Taipei Chapter (CAS04)**
Chapter Chair: Pei-Yun Tsai
Title and Affiliation: Professor, Graduate School of Advanced Technology, National Taiwan University
Email: peiyuntsai@ntu.edu.tw

5. **Chapter Name: Consumer Technology Society Taipei Chapter (CT08)**
Chapter Chair: Pei-Jun Lee
Title and Affiliation: Professor, Department of Electronic and Computer Engineering, National Taiwan University of Science and Technology
Email: pjlee@mail.ntust.edu.tw

6. **Chapter Name: Council on Electronic Design Automation Taipei Chapter (CEDA44)**
Chapter Chair: Ing-Chao Lin
Title and Affiliation: Professor, Dept. of Computer Science and Information Engineering, National Cheng Kung University
Email: iclin@mail.ncku.edu.tw

7. **Chapter Name: Computational Intelligence Society Taipei Chapter (formerly Neural Network)(CIS11)**
Chapter Chair: I-Fang Chung
Title and Affiliation: Professor, Institute of Biomedical Informatics, National Yang Ming Chiao Tung University
Email: ifchung@nycu.edu.tw

8. **Chapter Name: Communications Society Taipei Chapter (COM19)**
Chapter Chair: Yeong-Luh Ueng
Title and Affiliation: Professor, Department of Electrical Engineering
National Tsing Hua University
Email: ylueng@ee.nthu.edu.tw

9. **Chapter Name: Council on RFID (CRFID-741)**
Chapter Chair: Hsin-Chin Liu
Title and Affiliation: Professor, Department of Electrical Engineering, National Taiwan University of Science and Technology
Email: hcliu@mail.ntust.edu.tw

10. **Chapter Name: Control Systems Society Taipei Chapter (CS23)**
Chapter Chair: Hsien-I Lin
Title and Affiliation: Professor, Institute of Electrical and Control Engineering, National Yang Ming Chiao Tung University
Email: sofin@nycu.edu.tw

11. **Chapter Name: Electronic Packing Society Taipei Chapter (formerly Components, Packaging, and Manufacturing Technology Society (CPMT21)) (EP21)**
Chapter Chair: Shen-Li Fu
Title and Affiliation: President, Department of Electronic Engineering, I-Shou University
Email: slfu@isu.edu.tw

12. **Chapter Name: Education Society Taipei Chapter (E25)**
Chapter Chair: Juing-Huei Su
Title and Affiliation: Professor, Department of Electronic Engineering, Lunghwa University of Science and Technology
Email: suhu@gm.lhu.edu.tw

13. **Chapter Name: Electron Devices Society Taipei Chapter (ED15)**
Chapter Chair: Steve S. Chung
Title and Affiliation: Professor, Department of Electronics Engineering, National Chiao Tung University
Email: schung@cc.nctu.edu.tw

14. **Chapter Name: Engineering in Medicine and Biology Society Taipei Chapter (EMB18)**
Chapter Chair: Jyh-Horng Chen
Title and Affiliation: Professor, Department of Electrical Engineering, National Taiwan University
Email: jhchen@cc.ee.ntu.edu.tw

15. **Chapter Name: Electromagnetic Compatibility Society Taipei Chapter (EMC27)**
Chapter Chair: Cheng-Nan Chiu
Title and Affiliation: Professor, Department of Electrical Engineering, Yuan Ze University
Email: cnchiu@saturn.yzu.edu.tw

16. **Chapter Name: Geoscience and Remote Sensing Society Taipei Chapter (GRS29)**
Chapter Chair: Yang-Lang Chang
Title and Affiliation: Dean of College of Electrical Engineering and Computer Science, and Distinguished Professor of Electrical Engineering, National Taipei University of Technology
Email: ylchang@ntut.edu.tw

17. **Chapter Name: Industry Applications Society Taipei Chapter (IA34)**
Chapter Chair: Yu-Shan Cheng
Title and Affiliation: Associate Professor, Department of Electrical Engineering, National Taiwan Ocean University
Email: yscheng@mail.ntou.edu.tw

18. **Chapter Name: Industrial Electronics Society Taipei Chapter (IE13)**
Chapter Chair: Yi-Feng Luo
Title and Affiliation: Professor, Department of Electrical Engineering, National Sun Yat-sen University
Email: YF.Luo@mail.ntust.edu.tw

19. **Chapter Name: Instrumentation and Measurement Society Taipei Chapter (IM09)**
Chapter Chair: Cheng-Tang (Peter) Pan
Title and Affiliation: Professor, Department of Mechanical and Electro-Mechanical Engineering, National Sun Yat-sen University
Email: pan@mem.nsysu.edu.tw

20. **Chapter Name: Information Theory Society Taipei Chapter (IT12)**
Chapter Chair: I-Hsiang Wang
Title and Affiliation: Professor, Department of Electrical Engineering, National Taiwan University
Email: ihwang@ntu.edu.tw

21. **Chapter Name: Magnetics Society Taipei Chapter (MAG33)**
Chapter Chair: Chun-Yeon Lin
Title and Affiliation: Associate Professor, Department of Mechanical Engineering, National Taiwan University
Email: chunyeonlin@ntu.edu.tw

22. **Chapter Name: Microwave Theory and Techniques Society Taipei Chapter (MTT17)**
Chapter Chair: Chien-Nan Kuo

Title and Affiliation: Professor, Institute of Electronics, National Yang Ming Chiao Tung University
Email: hmhsu@nchu.edu.tw

23. **Chapter Name: Oceanic Engineering Society Taipei Chapter (OE22)**
Chapter Chair: Forng-Chen Chiu
Title and Affiliation: Professor, Department of Engineering Science and Ocean Engineering, National Taiwan University; Director, National Center for Ocean Research (Preparatory Office), NARL
Email: fcchiu@ntu.edu.tw

24. **Chapter Name: Power and Energy Society Taipei Chapter (PE31)**
Chapter Chair: Yu-Chi Wu
Title and Affiliation: Professor, Department of Electrical Engineering, National United University
Email: ycwu@nuu.edu.tw

25. **Chapter Name: Power Electronics Society Taipei Chapter (PEL35)**
Chapter Chair: Ching-Jan Chen
Title and Affiliation: Professor, Department of Electrical Engineering, National Taiwan University
Email: chenjim@ntu.edu.tw

26. **Chapter Name: Photonics Society Lasers & Electro-Optics Society (formerly LEOS) Taipei Chapter (PHO36)**
Chapter Chair: Chao-Hsin Wu
Title and Affiliation: Professor, Graduate Institute of Photonics and Optoelectronics, National Taiwan University
Email: chaohsinwu@ntu.edu.tw

27. **Chapter Name: Product Safety Engineering Society Taipei Chapter (PSE43)**
Chapter Chair: Claire Tsai
Title and Affiliation: Sr. Compliance Lead, Lenovo Global Technology (Taiwan) Ltd
Email: ctsai4@lenovo.com

28. **Chapter Name: Robotics and Automation Society Taipei Chapter (RA24)**
Chapter Chair: Chia-Hung (Dylan) Tsai
Title and Affiliation: Associate Professor, Mechanical Engineering, National Yang Ming Chiao Tung University
Email: dylantsai@nycu.edu.tw

29. **Chapter Name: Reliability Society Taipei Chapter (RL07)**
Chapter Chair: Ming-Hour Yang
Title and Affiliation: Professor, Department of Information and Computer Engineering, Chung Yuan Christian University
Email: mhyang@cycu.edu.tw

30. **Chapter Name: Sensors Council Taipei Chapter (SEN39)**
Chapter Chair: (Jerry) Li-Chia Tai
Title and Affiliation: Assistant Professor, Institute of Electrical and Control Engineering, National Yang Ming Chiao Tung University
Email: j.tai@nycu.edu.tw

31. **Chapter Name: Systems, Man, and Cybernetics Taipei Chapter (SMC28)**
Chapter Chair: Li-Wei Ko

Title and Affiliation: Professor, Department of Electrical Engineering, National Yang Ming Chiao Tung University
Email: lwko@nycu.edu.tw

32. **Chapter Name: Systems, Man, and Cybernetics Taichung Chapter (SMC28-TC)**
Chapter Chair: Ching-Chih Tsai
Title and Affiliation: Professor, Department of Electrical Engineering, National Chung Hsing University
Email: cctsai@nchu.edu.tw

33. **Chapter Name: Signal Processing Society Taipei Chapter (SP01)**
Chapter Chair: Jing-Ming Guo
Title and Affiliation: Professor, Department of Electrical Engineering, National Taiwan University of Science and Technology
Email: jmguo@seed.net.tw

34. **Chapter Name: Solid-State Circuits Society Taipei Chapter (SSC37)**
Chapter Chair: Yu-Te Liao
Title and Affiliation: Professor, Department of Electrical Engineering, National Yang Ming Chiao Tung University
Email: yudoliao@nycu.edu.tw

35. **Chapter Name: System Council Taipei Chapter (SYSC45)**
Chapter Chair: Ching-Ming Lai
Title and Affiliation: Distinguished Professor, Department of Electrical Engineering, National Chung Hsing University
Email: pecmlai@nchu.edu.tw

36. **Chapter Name: Vehicular Technology Society Taipei Chapter (VT06)**
Chapter Chair: Sau-Hsuan Wu
Title and Affiliation: Professor, Department of Electrical Engineering, National Yang Ming Chiao Tung University
Email: sauhsuan@nycu.edu.tw

- Number of Active Chapters (Chapters who have reported required number of meetings during the year): 36
- Summary of Chapter activities (Chapter wise with attachment table/information)

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

In 2024, IEEE AP-S Taipei Chapter (AP03) held and sponsored six technical activities as follows:

I. 2024 Electromagnetics Workshop-A Bridge to the future
Venue: National Central University, Tauyuan, Taiwan. Date: 15-16 January 202.

Annual technical forum for professors, industries and graduate students, in conjunction with NSTC term reports.
The Electromagnetics Workshop-A Bridge to the future is the largest exchange platform for electromagnetic technology elites in Taiwan. The meeting mainly invites major domestic research teams, scholars and industry experts to give special reports and present research results. The content includes advanced technology course lectures with the current status of industrial development, as well as future research and development in the field of microwave and millimeter waves and the skill needs of the industry. It is expected to use engineering technology as the cornerstone to establish a horizontal and vertical development bridge between industry, government, academia.

Website: http://www.mostcep.tw/telecom2024/

Attendees	Technical Reports	IEEE Members	IEEE APS-Members
200	20	150	50

II. 2024 IEEE International Workshop on Electromagnetics: Applications and Student Innovation Competition (iWEM 2024)

Venue: Lunghwa University of Science and Technology, Taoyuan city, Taiwan
Date: 10-12 July, 2024.

Introduction

IWEM started in Taipei in 2010 for the first time named as "International Conference on Applications of Electromagnetism and Student Innovation Awards" (AEM2C 2010), and renamed in 2011 as "IEEE International Workshop on Electromagnetics: Applications and Student Innovation Competition" (2011 IEEE iWEM). Supported by IEEE, this workshop series is held in rotation in Taiwan, China, Hong Kong, and Japan. This workshop series provides not only an international platform for scientists and engineers to exchange their ideas, but also a great venue for young scholars and students to demonstrate their innovative results. We sincerely invite all experts, scholars and students to participate and contribute to Workshop Proceedings. Meanwhile, we sincerely expect everyone can enjoy the beauty of Taipei in Taiwan.

Topics of Interest

Topics include but are not limited to：

- Electromagnetic Theory
- Computational Electromagnetics
- Instrumentation and Measurement
- Wireless Power Transmission and Harvesting
- Millimeter Wave, THz Technologies
- EMC/EMI and PI/SI
- Wireless Systems
- Antennas and Propagation
- RF, Microwave, Millimeter Wave Components and Circuits
- Microwave sensor or IoT sensors
- Advanced Materials and Processes in RF and THz
- Array Antenna MIMO System and Radar
- Dielectric and Magnetic Material Properties and Measurements
- Material Interaction
- AI-based EM technology
- Other EM Topics

Website: https://www.iwem2024.org/

Attendees	Technical Reports	IEEE Members	IEEE APS-Members
100	20	30	20

III. 2024 EM Education Initiative: Summer Program

Venue: Jin-De Campus, National Changhua University of Education, Changhua, Taiwan
Date: 5-9, August 2024.

Annual based summer school for new graduate students; it is also open to industrial peoples. The attendees are blooming to 100 persons. In this year, the summer program provide the workshop on the following topic.
(1). Application design of RF energy harvesting and low-temperature RF signal generator
(2). Introduction to single crystal microwave/millimeter wave integrated circuits and related applications
(3) Transmission Line Principles and Design
(4) Microwave passive circuit Design
(5) Three major members of the high-gain antenna family: Array Antenna, Reflectarray and Transmitarray
(6) Introduction to antenna pattern and polarization characteristics and far-field wireless power transfer
(7) Introduction to RF transceiver design
(8) Introduction to radar system
(9) Introduction to Microwave and Millimeter Wave Power Amplifier Research
(10) Technology development, market trends and challenges of RF front-end modules.

Attendees	Mini-Workshop	IEEE Members	IEEE APS-Members
100	10	30	30

IV. 2024 Asian Wireless Power Transfer Workshop

Venue: National Chung Hsing University, Taichung

Date: 5-7 Dec, 2024

Wireless power transfer (WPT) has become one of the hottest research topics for its huge industrial application potentials. Starting in 2015, Asian Wireless Power Transfer Workshop (AWPT) aims to provide a platform for researchers to share the latest research and development results related to the WPT technology. To continue promoting exchanges and collaborations among researchers and fostering further technology advances. AWPT is organized by the technical committee of wireless power transfer of IEICE Communications Society. AWPT 2024 is co-organized by Department of Electrical Engineering, National Chung Hsing University. AWPT 2024 is the largest event in the Asia for wireless power research and industry engagement, covering a wide range of topics, applications, frequencies, and power levels.

Technical Areas

1. Technologies for wireless power transfer and energy harvesting
   Near-field power transfer
   Far-field and radiative power transfer
   Power management and power electronics
   Simultaneous information and wireless power transfer
   EMC/EMI, shielding, safety, foreign opject detection
2. Integrated circuits and systems for wireless power transfer and energy harvesting
   AC-DC rectifier integrated circuits
   RF energy harvesting, IoT sensors
   DC-DC converters
   Backscattering, RFIDs and electronic tags
   Integrated cicuits for biomedical, wearable and implantable devices.
3. Applications of wireless power transfer and energy harvesting
   Electric vehicles: scooters, cars, buses, trucks, trains
   Precision agriculture and predictive maintenance
   Underwater and complex environments
   Ultronsonic remote powering systems
   Standardization, regulations and biological effects.
4. Other device, system or application topics related to wireless power transfer

Website: https://sites.google.com/view/awpt2024/home

Attendees	Technical Reports	IEEE Members	IEEE APS-Members

100	20	30	20

V. Y2024 the 8th Auden Group Technical Seminar SmartLife for Next Generation AI-Driven Communication, Booming Network Innovation

Venue: Taipei International Convention Center, Taiwan
No. 1, Sec. 5, Xinyi Rd., Xinyi Dist., Taipei City 110, Taiwan

Date: 6 Dec. 2024, Time: 9:00-16:30

Auden Group Technical Seminar explores the convergence of communication technologies and its significance for AI development. The seminar introduces how 5G NTN, satellite communications, biomedical electronics, and communication security can support AI applications. The seminar also analyzes the prospects of AI applications in precision healthcare, information security, and corporate sustainability, to collaborate to advance the new chapter of next-generation smart life.

Highlights of The Event

Experts on Stage

Authoritative perspectives from the world's leading experts in industry, academia, and research.

Global Company Perspectives

Senior executives from leading global companies will share insights into the latest technology trends and future market dynamics.

Industry Trends

In-depth analysis of the latest developments in AI, communication technology, and sustainable development.

AGENDA

Time	Topics	Speaker
09:00-09:30	Registration	
09:30-10:00	Welcome Opening VIP Opening Remarks	
General Session Keynote Speech Moderator: Tzong-Lin Wu, Professor, National Taiwan University		
10:00-10:30	Unlocking Potential of 6G: Key Innovations, Enabling Technologies, and Challenges Ahead	Dr. Alvis Huang CEO, Emtar Technologies Inc
10:30-11:00	UAV-based Antenna Measurement for LEO Ground Terminals	Dr. Saki Omi Applied Scientist, Quadsat
11:00-11:30	Coffee Break & Booth Tour	
11:30-11:50	Frontend Packaging and Integration Trends for mmWave and Sub-THz Phased Arrays	Dr. Kevin Gu Chair, IEEE MTT-S and EP-S Technical Committees, Founder, Astrabeam LLC
11:50-12:10	AI & cybersecurity – threats, opportunities, regulation & governance – a global view	Marek Kosmowski Chief of International, Partner Cybersecurity, Digital & Technology Consulting, Member of the Executive Team, Veda Praxis
12:10-	AI in EM & Medical Modeling Applications: Latest	Prof. Dr. Niels Kuster

12:30	Research Results from the IT'IS Foundation	Director, IT'IS Foundation & ETH Zurich Fasse, Melanie Steiner, Bryn Lloyd, Esra Neufeld
12:30-13:30	Lunch Break & Booth Tour	
Afternoon Technical Session		
13:30-13:50	MIMO 4D Imaging Radar Technologies for Integrated Sensing and Communication in B5G/6G Applications	T.-S. Jason Horng Chair Professor, National Sun Yat-sen University
13:50-14:10	Intelligent RF Sensing	Bryan Chu CEO, Ohmplus Technology Inc.
14:10-14:40	Panel Discussion: Design and commercializing challenge of NTN	Sampson Duan Senior Director, Auden Techno Corp. Dr. Alvis Huang CEO, Emtar Techno Rasmus Harvits Key Account Manager APAC, Quadsat Bryan Chu CEO, Ohmplus Technology Inc
14:40-15:10	Coffee Break & Booth Tour	
15:10-15:30	The Biomedical Analysis of Neural Signals	Chao-Hung Kuo Attending physician, Taipei Veterans General Hospital
15:30-15:50	Introduction to the Latest Information Security Requirements of the EU: EN-18031	Johnny Huang Project manager, Auray Techno Corp.
15:50-16:10	Strategizing Corporate Sustainability to Build Green AI Competitiveness	Eric Lin Senior consultant, Auden Intelligence Carbon Solution
16:10-16:30	Lucky Draw	

Attendees	Technical Reports	IEEE Members	IEEE APS-Members
240	11	100	50

VI. Micro and Nano-Driven Antennas, Circuits, and Sensors for Telehealth and Telemedicine
Venue: National Taiwan Normal University Heping Campus II

Building: College of Education Building
Room : 2F, International Lecture Hall Jiao 201
Date: 19 Dec 2024, Time: 10:20 AM to 11:50 AM

Speakers: Pai-Yen Chen
Professor, University of Illinois Chicago (UIC)

Abstract: With the rapid advent in sensors and actuators, and the ever-advancing wireless technologies, the idea of internet-of-things (IoTs) has had a revolutionary impact on ubiquitous computing with massive amount of data from the 5G/B5G-connected smart objects. This new paradigm has become the driving force for many new technologies, such as smart cities, telemedicine, telediagnosis, and point-of-care testing (POCT). This talk will give an overview of our recent progress on micro/nanotechnology-driven wireless sensors and integrated systems. The first part of this talk will discuss low-noise, batteryless and wireless harmonic/intermodulation sensors for physical and (bio-)chemical sensing, as well as ultracompact harmonic biosensors based on chemically-reconfigurable frequency modulators built using nanomaterial-based RF circuits. In addition, wearable antennas based on lightweight and stretchable nanocomposite materials will be discussed, along with their applications in wearable electronics and smart skins. The second part of this talk will discuss how the concepts of "PT-symmetry" originating from quantum mechanics and "time crystal" can be implemented using RF circuits and applied to enhance sensitivity and resolvability of wireless micro/nano-sensors, with some in-vivo demonstrations. The final part of this talk will showcase nanomaterial-based RF/analog circuits that leverage the intrinsically high entropy to generate electromagnetically unclonable function (EMUF)-based cryptographic keys for identifying and securing resource-scarce wireless sensors, RFID tags, and IoTs.

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

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

i. Advanced Signal Processing Techniques for Complex Big Graph Data Analysis.
Date: 12 January 2024
Location: 1, Sec. 3, Zhongxiao E. Rd., Taipei 10608 Taiwan (R.O.C.)
Attendance: Members, Guests

The series talks: This workshop series focused on advanced signal processing and data analytics for complex graph data, highlighting two pioneering research projects. The first project involved automatic human-posture recognition using skeletal data from Kinect sensors, achieving over 90% accuracy through Graph Convolutional Networks (GCN) and Tensor Regressor models. The second project explored drug-target interaction prediction, leveraging Mol2Vec, ProtVec, Bionoi-AE, and Graph2Vec features for input into a multi-layer perceptron (MLP) model, with potential applications in personalized medicine and drug discovery. The series fostered discussions on innovative methodologies and their impact across diverse fields.

ii. Workshop on Applying Industrial Experience to High-Level Language Programming and GitHub Project Management
Date: 20 September 2024
Location: 1, Sec. 3, Zhongxiao E. Rd., Taipei 10608 Taiwan (R.O.C.)
Attendance: Members, Guests

The series talks: Join Tzu-Hung Yen as he shares insights from his experience at Google, focusing on integrating industrial knowledge with high-level programming languages for Android app development and effective GitHub project management. This session will guide you through optimizing your design and development workflow for robust and scalable software.

Key Topics:

Industrial Experience Integration: Discover how to incorporate real-world industrial experience into high-level language programming for better software design and development.

High-Level Language Fundamentals: Explore the principles of high-level programming languages, focusing on efficient coding, memory management, and problem-solving techniques.

GitHub Project Management: Learn strategies for managing high-level language projects on GitHub, including version control, repository management, and collaboration.

Design Principles for High-Level Languages: Understand design best practices tailored to high-level languages, ensuring scalability and maintainability in your projects.

Best Practices: Uncover industry-standard best practices for combining industrial experience with high-level language programming and GitHub for optimized workflows.

Case Studies: Review real-world examples of projects that have effectively integrated high-level language programming with GitHub management.

Practical Exercise - Programming Challenge: Engage in a hands-on coding challenge to apply the concepts learned, focusing on high-level language programming and GitHub integration.

iii. Workshop on Leveraging Google's Industrial Experience and High-Level Languages for Android App Design and GitHub Projects

Date: 20 September 2024

Location: 1, Sec. 3, Zhongxiao E. Rd., Taipei 10608 Taiwan (R.O.C.)

Attendance: Members, Guests

The series talks: Join Tzu-Hung Yen for an insightful session on how to apply industrial experience to high-level language programming and GitHub project management. This talk will focus on optimizing your software development process with high-level programming languages and mastering GitHub workflows for project success.

Key Topics:

Industrial Experience Integration: Learn how to incorporate real-world industrial experience into Android app design and development.
High-Level Language Benefits: Explore the advantages of using high-level programming languages in creating efficient and reliable software systems.
GitHub Project Management: Gain strategies for effectively managing GitHub-hosted projects, covering repository setup, collaboration, and workflows.
Design Fundamentals: Understand the essential design principles that contribute to the success of software development projects.
Best Practices: Discover tips and best practices for combining industrial experience, high-level languages, and GitHub for seamless project development.

iv. Workshop on Google map application design for embedded software systems
Date: 06 December 2024
Location: 1, Sec. 3, Zhongxiao E. Rd., Taipei 10608 Taiwan (R.O.C.)
Attendance: Members, Guests

The series talks: Join Chih-Hsian Lin for an in-depth session on designing embedded software systems using Google Map SDK within Android applications. This talk will walk you through the integration of Google Maps, from adding map elements in the UI to implementing features like markers and polylines.

Key Topics:
Introduction to Google Map SDK: Learn how to effectively integrate Google Map SDK into Android applications to enable powerful map-based features.
UI Layout and Map Integration: Discover how to design a user-friendly interface and seamlessly incorporate map elements into your application layout.
Adding Markers and Polylines: Gain practical knowledge on how to implement markers and polylines on maps to provide interactive features and visual cues.
Google Map Features in Embedded Systems: Explore the use of Google Maps in embedded systems, focusing on navigation, tracking, and other real-time location services.
Best Practices for Map Integration: Learn the best practices for optimizing the performance and usability of Google Maps within Android applications.
Practical Demonstration: Participate in a hands-on demo, where you'll integrate Google Maps into an Android project, design the UI, and add markers and polylines

v. Workshop on Verification of Electronic Engineering Students' Industrial Programming Skills
Date: December 6, 2024 | 9:00 - 12:00
Location: 1, Sec. 3, Zhongxiao E. Rd., Taipei 10608 Taiwan (R.O.C.)

Attendance: Members, Guests

The series talks: In this session, Chih-Hsian Lin will focus on evaluating and improving the industrial programming skills of students with an electronic engineering background. The talk will cover essential programming concepts used in the industry, such as loops, conditions, file handling, and logical judgments. Participants will receive feedback and suggestions for improving their technical capabilities in industrial environments..

Key Topics:
Industrial Programming Skills: Understand the key programming skills required in the industry, including loops, conditional statements, and file handling.
File Verified Statements: Learn how to verify file operations and handle data effectively in industrial applications.
Design Classes: Explore the fundamentals of designing classes that enhance code organization and reusability in software development.
Logical Judgments: Gain insights into how logical judgments are applied in real-world industrial programming scenarios.
Suggestions for Improvement: Receive practical advice on how to improve your programming skills and apply them to industrial projects.

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

Trustworthy AI Dialogue Engine and AI Safety Forum
Date: 25 January 2024
Location: Research Center for Information Technology Innovation, Academia Sinica (128 Academia Road, Section 2, Nankang, Taipei 115, Taiwan (R.O.C))
Attendance: 99/ Online 242
Meeting video: https://www.youtube.com/watch?v=RdXNWjwEkN8
Summary:
Since the debut of ChatGPT in November 2022, the potential of large language models has become a global fascination. In response to this, and recognizing the need for region-specific solutions, the National Science Council of Taiwan launched the TAIDE (Trustworthy AI Dialogue Engine) project in April 2023. This ambitious endeavor aims to develop a Traditional Chinese AI dialogue engine, specifically designed for the Taiwanese environment.
This presentation is designed to showcase how TAIDE is forging a new path in AI dialogue technology within Taiwan, providing valuable insights for AI professionals, researchers, and enthusiasts. Join us to explore the new horizons and opportunities that TAIDE is opening up in the field of AI technology in Taiwan.

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

In year 2024, we have accomplished the following activities:

Category	Date	Event
Technical	2024.05.08	CASS-Wide Webinar XX Lecture: Dr. Bor-Sung Liang Title: "Design Issues for Mobile Processors with Large-Language Models (LLMs) and Large Multimodal Models (LMMs) (@CASS-Wide Webinar Program)
	2024.07.31	2024 IEEE SSCS/CASS Taipei/Tainan Chapter Annual Meeting (Hosted by CASS Taipei)
	2024.10.07~09	IEEE APCCAS 2024
	2024.11.04	IEEE CASS Taipei Talk Lecture: Haoxing (Mark) Ren, Nvidia Title: "Towards Revolutionizing Chip Design with AI:The Integration of AI and Algorithm"

5. Chapter Name: Consumer Technology Society Taipei Chapter (CT08)

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

CEDA Taipei Chapter hosted or supported the following activities in 2024:

i. Chapter Meetings

No	Date	Venue
1	July 31, 2024	Current Status & Achievements (2024) Discussion and Planning for 2025
2	December 7, 2024	Current Status & Achievements (2024) Discussion and Planning for 2025

ii. Symposium and Workshops

No	Event	Date
1	Workshop on Synthesis and System Integration of Mixed Information Technologies (SASIMI 2024)	March 11-12, 2024
2	2024 International Symposium on Physical Design (ISPD 2024)	March 13-15, 2024
3	Workshop on Electronic Design Automation (EDA Workshop)	December 7-8, 2024

iii. Invited Lectures

No	Date	Title	Speaker
1	May 7, 2024	From Circuit Learning to Large Circuit Models	Professor Qiang Xu, The Chinese University of Hong Kong

2	July 31, 2024	FabGPT for Smart IC Manufacturing: Overcoming Challenges in Data, Multimodality, and Deployment	Professor Cheng Zhuo, Zhejiang University

2024 Workshop on Synthesis and System Integration of Mixed Information technologies (SASIMI 2024)

Date: March 11-12, 2024

Venue: Chang Yung-Fa Foundation International Convention Center (CYFF), Taipei, Taiwan

This workshop provides an interchange forum on system design, design experiences, EDA, and design methodologies for both industry and academy. Presentations on theoretical aspects, practical issues, case studies and applications are encouraged. The workshop gives an opportunity for presentation and discussion of advanced work and research. It also includes special sessions for hot topics
The following is the brief technical program.

09:00 - 09:20 Opening
09:20 - 10:30 (70min) K1: Keynote Speech I (Prof. Youn-Long Lin)
10:30 - 12:00 (90min) R1: Regular Poster Session I
12:00 - 13:30 Lunch Break
13:30 - 14:30 (60min) I1: Invited Talk I (Dr. Takahide Yoshikawa)
14:30 - 16:00 (90min) R2: Regular Poster Session II
16:00 - 17:30 (90min) Panel Discussion

09:00 - Registration
09:20 - 10:30 (70min) K2: Keynote Speech II (Prof. Yiran Chen)
10:30 - 12:00 (90min) R3: Regular Poster Session III
12:00 - 13:30 Lunch Break
13:30 - 14:30 (60min) I2: Invited Talk II (Prof. Robert Wille)
14:30 - 16:00 (90min) R4: Regular Poster Session IV
16:00 Closing

International Symposium on Physical Design (ISPD 2024)

Date: March 13-15

Venue: National Taiwan University, Taipei, Taiwan

The International Symposium on Physical Design (ISPD) provides a premier forum to exchange ideas and promote innovative research in all aspects of physical design ranging from traditional topics for

ASIC and FPGA designs to emerging technologies that impact physical design of integrated circuits (ICs).

The following is the brief technical program.

Day 1 Wednesday, March 13, 2024
8:30 - 8:40: Opening
8:40 - 9:30: Keynote
9:50 - 10:50: Partitioning and Clustering
11:00 - 12:00: Timing optimization
12:00 - 13:00: Lunch
13:00 - 14:00: Panel: EDA Challenges at Advanced Technology Nodes
14:10 - 15:30: 3D IC
15:50 - 17:30: Artificial Intelligence and Machine Learning
Day 2 Thursday, March 14, 2024
8:30 - 9:20: Keynote
9:20 - 10:20: Analog
10:40 - 12:00: Placement
13:00 - 14:00: Standard Cell, Routability, and IR drop
14:10 - 15:10: Thermal Analysis and Packaging
15:30 - 17:30: Lifetime Achievement Session

Day 3 Friday, March 15, 2024
8:30 - 9:20: Keynote
9:20 - 10:20: Quantum and Superconducting Circuits
10:40 - 11:40: Physical Design Challenges for Automotive
11:50 - 12:30: Contest Summary/results
12:30 - 12:40: Outlook to ISPD 2025

2024 EDA Workshop

Date: December 7–8, 2024

Venue: INHOUSE HOTEL YEHLIU, New Taipei, Taiwan

Summary: The original purpose of organizing this seminar was to enhance communication and discussions in the domestic EDA field through a series of related keynote speeches, panel discussions, and top-tier international academic paper presentations. It is particularly aimed at strategically increasing the number of papers presented by domestic EDA professors at international conferences such as DAC, ICCAD, ITC, and ASP-DAC. This seminar has been held consecutively for 22 years, with significant achievements. The number of papers published by Taiwan's EDA research community at top international conferences has increased substantially, and the field is gradually gaining international attention and recognition.
As the chair of the DAC-2009 conference, Andrew Kahng (Professor of CSE and ECE at UC San Diego) mentioned in an interview with the media (DACeZine, in the article "Crafting the Future of EDA") that Taiwanese schools have performed excellently in recent years in ICCAD's CADathlon and ISPD's P&R (Place and Routing) competitions. He also predicted that Taiwan would play a key role in future research in DFM (Design for Manufacturing), a prediction confirmed by Taiwan's recent academic achievements in physical design and DFM.

With the evolution of process technology, EDA has become an indispensable element in the IC design industry. Many domestic IC design companies are facing a growing demand for EDA-related talent, but the supply is insufficient. Therefore, it is crucial to have more outstanding students enter this field. Through the EDA Workshop, students can gain a deeper understanding of the industry and eventually join it. Alternatively, students who wish to enter the industry can identify the skills they need to develop while in school to fill any gaps in their capabilities. After achieving substantial results in

previous EDA Workshops, the 2024 EDA Workshop, now in its 22th year, will not only continue to enhance the international competitiveness of the EDA industry-academia collaboration, but will also explore how the industry and academia can respond to future changes in EDA and the electronics industry, and create an atmosphere for EDA talent entrepreneurship, continuing to drive the research and development of Taiwan's EDA field.
The following is the brief technical program.
Dec 7, 2024
13:30 - 13:40 Opening
13:40 – 14:30 Invited Talk I
14:50 – 15:40 Invited Talk II
15:50 - 17:20 Poster
Dec 8, 2024
9:00 – 09:50 Invited Talk III
09:50 – 10:10
10:10 – 11:00 Invited Talk IV

11:00 – 12:00 2024 CAD Contest Award Ceremony

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

i. Invited talk –(June 24, 2024)

Speaker: Prof. Nikhil R Pal, IEEE Fellow

DLP (Distinguished Lecture Program) Title: Inferring disease related gene-gene interactions: Information theoretic and fuzzy logic based approaches

Venue: National Yang Ming Chiao Tung University, Taipei, Taiwan

Attendance: IEEE member: 5, Guests: 32.

Professor Nikhil R. Pal is a distinguished academic and researcher in the Electronics and Communication Sciences Unit at the Indian Statistical Institute (ISI), where he was the founding Head of the Center for Artificial Intelligence and Machine Learning. His research interests include brain science, computational intelligence, machine learning, and data mining.

Professor Pal has played key roles in the IEEE Computational Intelligence Society (CIS), serving as Vice President for Publications and later as President (2018). He was the Editor-in-Chief of IEEE Transactions on Fuzzy Systems (2005–2010) and an editorial board member of several leading journals. He received the IEEE CIS Fuzzy Systems Pioneer Award (2015) and is a Fellow of IEEE, INSA, INAE, NASI, and IFSA.

This talk focuses on identifying disease-specific gene interactions using improved methods. To develop efficient methods for identifying disease-specific gene interactions, enhancing accuracy, efficiency, and interpretability in gene analysis.

ii. Invited talk – (June 25, 2024)

Speaker: Prof. Nikhil R Pal, IEEE Fellowr

Title: Making a Neural Network smart enough not to cross its territory it is designed for: a small step

Venue: Taichung, Taiwan.

Attendance: IEEE member: 3, Guests: 35.

Professor Nikhil R. Pal is a distinguished academic and researcher, currently serving in the Electronics and Communication Sciences Unit at the Indian Statistical Institute. His research expertise spans bioinformatics, brain science, fuzzy logic, neural networks, machine learning, and data mining. In this talk is to enhance the reliability of neural networks by enabling them to refuse classification when encountering unfamiliar data. Professor Nikhil R. Pal proposes two MLP-based approaches to address this issue, ensuring that AI systems make decisions only within their trained domain. The talk explores theoretical foundations, practical implementations, and future directions for improving explainability and trust in intelligent systems.

iii. Technically Co-sponsored ICSSE 2024

Conference title: 2024 International Conference on System Science and Engineering (ICSSE 2024)

Date: Jun 26-28, 2024.

Venue: Hsinchu, Taiwan

Attendance: IEEE member: 100, Guests: 177

IEEE CIS, Taipei Chapter technically sponsored the 2024 I International Conference on System Science and Engineering 26-28 June, 2024, Hsinchu, Taiwan. (Website: https://icsse2024.web.nycu.edu.tw/). The CIS Chapter Chair, Prof. I-Fang Chung, served as a Chair of the special Session 4A: Computational Intelligence Techniques and Applications. This conference presents an exceptional opportunity for individuals, including scientists, engineers, and practitioners hailing from diverse corners of the globe, to showcase cutting-edge system design concepts, research findings, advancements, and practical applications. Furthermore, it aims to foster meaningful interactions and collaborations between scholars and professionals

iv. Technically Co-sponsored IFUZZY 2024

Conference title: 2024 International Conference on Fuzzy Theory and Its Applications (iFUZZY 2024)

Date: Aug 10-11, 2024.

Venue: Kagawa Japan

Attendance: IEEE member: 100, Guests: 200

IEEE CIS, Taipei Chapter co-organized the 2024 International Conference on Fuzzy Theory and Its Applications (iFUZZY 2024), held from August 10-13, 2024, in Takamatsu, Japan (Website: http://web.ite.mcu.edu.tw/ifuzzy2024/en). The CIS Chapter Chair, Prof. I-Fang Chung, served as Co-chair for Session 1C and 2C: Computational Intelligence Techniques and Applications (I) and (II) iFUZZY 2024 sought novel research on fuzzy theory, applications, and related topics. Jointly organized by the Taiwan Fuzzy Systems Association (TFSA) and NTNU, this conference provided a prime platform for researchers, industrial practitioners, and government representatives to showcase results and exchange ideas.

v. Technically and financial Co-sponsored FUZZY 2024

Conference title: The 32nd Conference on Fuzzy Theory and Its Applications of the Republic of China (FUZZY 2024)

Date: Oct 24-27, 2024

Venue: Lienchiang County, Taiwan

Attendance: IEEE member: 25, Guests: 50

IEEE CIS, Taipei Chapter technically and financially sponsored the 32nd Conference on Fuzzy Theory and Its Applications (FUZZY 2024), held from October 24-27, 2024, in Lienchiang County, Taiwan. The conference, organized by National Taiwan Normal University and co-sponsored by the IEEE Taipei Computational Intelligence Society (CIS11), aims to bring together leading professionals in fuzzy science and engineering.

FUZZY 2024 provides a platform for paper presentations and academic discussions, promoting the exchange of ideas and experiences. By advancing fuzzy science and engineering, the conference strives to enhance Taiwan's industrial competitiveness and contribute to the development of innovative products.

vi. Technically Co-sponsored 2024 National AI Creative Project Competition

Title: 2024 National AI Creative Project Competition- Quantum AI Experience and Applications

Date: Oct. 26 - Nov. 9, 2024

Venue: Tainan, Taiwan

Attendance: I IEEE member: 8, Guests: 169

Summary: 2024 National AI Creative Project Competition – Quantum AI Experience and Applications. The event had been held from October 26 to November 9, 2024, as an innovative academic exchange platform, fostering learning, experience sharing, and long-term collaboration in technology and education. In collaboration with IEEE international academic organizations, the competition aimed to inspire students from universities, high schools, and elementary schools to develop a strong interest in the future applications of generative AI and quantum computing in intelligent systems.

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

Chapter COM19 hosted or supported the following activities during 2024.

i. 2024-Winter IEEE Taiwan Workshop on Information Theory and Communications

Date: January 15 – January 16, 2024

Venue: National Central University, Taoyuan, Taiwan

Summary: The 2024-Winter IEEE Workshop on Information Theory and Communications was held in Taoyuan, Taiwan from Jan. 15 to Jan. 16, 2021. The website of the workshop is at http://www.mostcep.tw/telecom2024/index.php?action=programe&cid=21&id=33. The

primary goal of the workshop is to promote information exchange between the researchers in Taiwan in the fields of information theory and communications. The workshop is co-sponsored by IEEE Communications Society Taipei Chapter, IEEE Communications Society Tainan Chapter, IEEE Information Theory Taipei Chapter, IEEE Information Theory Tainan Chapter, and the Ministry of Science and Technology in Taiwan. The workshop program includes 8 invited talks, and a joint member meeting for IEEE Communications Society Taipei Chapter, IEEE Communications Society Tainan Chapter, IEEE Information Theory Society Taipei Chapter, and IEEE Information Theory Tainan Chapter. Among the 8 invited speakers, 7 speakers are professors from three universities in Taiwan and one speaker is from the Singapore. Over 150 people attended the workshop.

ii. 2024 Summer School on Information/Communication Theory and Technologies

Date: August 19 – August 20, 2024

Venue: National Yang Ming Chiao Tung University, Hsinchu, Taiwan / Online

Summary: The 2024 Summer School on Information/Communication Theory and Technologies was held at National Yang Ming Chiao Tung University, Hsinchu, Taiwan from Aug. 19, 2024 to Aug. 20, 2024 and broadcasted online. The summer school contains 6 short courses. The topics of the short courses are "MIMO Wireless Communication Systems", "Principle of Digital Communications", "Point-to-point Information Theory ", "Non-terrestrial Communcations and 3GPP Standard", and "Satellite Optical Communications". The website of the summer school is at https://sites.google.com/view/2024icvtt/home. More than 80 students registered and attended the summer school. In addition to National Yang Ming Chiao Tung University, the graduate students came from more than 10 universities in Taiwan including National Taiwan University, National Tsing Hwa University, and National Cheng Kung University, to name a few. The 9 speakers are well-known professors in the field of communications engineering and information theory in Taiwan, and they are affiliated with four different universities including National Yang Ming Chiao Tung University, National Tsing Hwa University, National Chung Cheng University, and National Sun Yat-Sen University. The summer school on information/communication theory and technologies has been held in Taiwan for more than 20 years. It is a great event for students and scholars in related fields to get together and learn new knowledge.

9. Chapter Name: Electronic Packing Society Taipei Chapter (EP 21)

EPS Taipei Chapter organized the following activity in 2024.

International Microsystems, Packaging, Assembly and Circuits Technology Conference (IMPACT) 2024

Date: 10/23/2024~10/25/2024

Venue: Taipei Nangang Exhibition Hall

Attendance: 796 Guests

Activities: 4 plenary speeches, 89 invited speeches and 34 sessions

IMPACT 2024 Conference, organized by IEEE EPS-Taipei, iMAPS-Taiwan, ITRI and TPCA, is the largest gathering of packaging and PCB professionals in Taiwan. IMPACT 2024 was held in conjunction with TPCA SHOW 2024 from Oct.23 to 25 at Taipei Nangang Exhibition Center. The symposium focuses on the theme “IMPACT on Sustainable Technology ", exploring the latest electronic technologies and fostering collaboration among enterprises and organizations.

As artificial intelligence, quantum computing, and low-earth orbit satellite communications rapidly advance, the convergence of technology and resource sustainability becomes an increasingly urgent strategic imperative. IMPACT 2024 delve into these technological innovations and sustainability advancements in PCB and packaging, offering professional development courses, plenary speeches, special sessions, industrial sessions, invited talks, outstanding papers, and poster presentations.

This conference also collaborates with international organizations such as ICEP and JIEP from Japan, iNEMI and SMTA, IEEE EPS from the USA, ISMP from Korea and global consulting companies like Techsearch from the USA.

10.<u>Chapter Name: Council on RFID (CRFID-741)</u>

i. Date: May 29, 2024 Time:9:00-15:30

Design and Verification of Millimeter-Wave Reconfigurable Intelligent Surfaces and Active Antenna Devices, and Prospects of Key Technologies for Sixth-Generation Mobile Communications (6G).

Venue: IB 301, IB302, National Taiwan University of Science and Technology, Taipei, Taiwan

The theme of this seminar is "Design and Verification of Millimeter-Wave Reconfigurable Intelligent Surfaces and Active Antenna Devices, and Prospects of Key Technologies for Sixth-Generation Mobile Communications (6G)." This highly challenging and forward-looking topic will influence the future direction of development and radio frequency communication technology trends. As communication technology continues to evolve, we are on the threshold of the 6G era. As an essential component of 5G and 6G communications, millimeter-wave technology will become one of the key technologies to achieve higher speeds and lower latency. Reconfigurable intelligent surfaces and active antenna devices are considered key technologies to address issues such as attenuation and penetration capabilities in millimeter-wave communications, which are of great significance for improving the performance and efficiency of communication systems. In this seminar, experts and scholars from academia and industry are invited to share their latest research results and practical experiences in designing, verifying, and applying millimeter-wave reconfigurable intelligent surfaces and active antenna devices. At the same time, the key technologies, development trends, and application prospects of 6G communication technology, jointly envisioning the future development direction of communication technologies, are also discussed. We hope

that through the exchange and sharing of this seminar, we can deeply explore the frontier topics of millimeter-wave technology and 6G communications, promote cooperation and exchange between academia and industry, and drive innovation and development in communication technology.

Agenda

Time	Topics	Speaker
09:00-09:30	Registration	
09:30-09:50	Welcome Opening	1. Ruey-Beei Wu, National Taiwan University 2. Tzong-Lin Wu, National Taiwan University
09:50-10:30	6G Technology Trend and Package Solutions	Jonathan Cho, ASE
10:30-10:50	Tea Break	
10:50-11:30	Reconfigurable Intelligent Surface for Next-generation Communications	Shengfuh Chang, National Chung Cheng University
11:30-12:10	On Effective Plane-Wave Scene Emulation Range Configurations for RIS/UUT Bistatic Scattering Properties & AESA OTA Performance Evaluations Critical for 5G/6G Wireless Communication Applications	Ike Lin, Wavefidelity, Inc.
12:10-13:30	Lunch	
13:30-14:10	Technologies and Challenges of 5G/6G Millimeter Wave Mobile and Satellite Communications	Ethan Lin, TMYTEK
14:10-14:50	OTA/ UWB/ VDI THz/ Raman materials test	1. Eden Chao, ACE. Solution Co., Ltd 2. Kathereen Lee, ACE. Solution Co., Ltd
14:50-15:30	5G Technology Evolutions from 5G Advanced BSG Toward 6G	Jacky Chou, Qualcomm Taiwan
15:30	Closing	

ii. Date: Jan 06 2025. 26 Time: 10:30-12:00

Distinguish talk: Radio Telemetry of Wireless Micro/Nano-Sensors in Telediagnosis and Telemedicine

Vanue: T2-202, National Taiwan University of Science and Technology.

Speakers: Pai-Yen Chen, Professor, University of Illinois Chicago (UIC)

Abstract: With the rapid advent in sensors and actuators and the ever-advancing wireless technologies, the idea of internet-of-things (IoTs) has had a revolutionary impact on ubiquitous computing with massive amounts of data from the "5G-connected" smart objects. This new paradigm has become the driving force for many new technologies, such as smart health, telemedicine, telediagnosis, and point-of-care testing. This talk will provide an overview of recent advances in telemetry techniques, micro/nanotechnology-driven wireless sensors and integrated systems. The first part of this talk will discuss new types of long-range (far-field), batteryless and wireless sensors for physical and (bio-)chemical sensing in noisy environments, as well as novel miniatured wireless biosensors based on chemically-reconfigurable oscillators and modulators built using nanomaterial-based transistors. Additionally, wearable antennas and circuits based on lightweight, flexible and stretchable nanocomposite materials will be discussed, along with their applications in smart skins. The second part of this talk will discuss how the concepts of "PT-symmetry" and "time crystals" originated in quantum physics can be implemented using electronic circuits and applied to enhance the sensitivity and resolvability of sensor telemetry, with demonstrations on wearable and implantable wireless micro/nano-sensors.

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

i. 2024 National Symposium on Systems Science and Engineering (NSSSE 2024)

NSSSE 2024 was held in Hsinchu, Taiwan in June 26-28, 2024. This conference presents an exceptional opportunity for individuals, including scientists, engineers, and practitioners hailing from diverse corners of the globe, to showcase cutting-edge system design concepts, research findings, advancements, and practical applications. Furthermore, it aims to foster meaningful interactions and collaborations between scholars and professionals.

ii. 2024 International Conference on System Science and Engineering (ICSSE 2024))

ICSSE 2024 was held in Hsinchu, Taiwan in June 26-28, 2024. ICSSE 2024 focused on the study of systems and control, encompassing a broad range of modern technologies. At its core, a system consists of interconnected components whose collective function exceeds the sum of their individual parts. This holistic perspective extends beyond technical elements to include people, organizations, cultures, and the intricate relationships that bind them together. While the construction of autonomous subsystems is not a new concept, the exponential growth of data, pervasive connectivity, and increased computational power have amplified system complexity and interdependencies. Consequently, the already formidable challenge of designing, developing, and deploying complex systems has become even more intricate. Technological advancements continue to offer opportunities for enhancing system capabilities, but they also introduce new risks that must be carefully managed. Our primary objective is to unite experts from diverse disciplines, fostering a platform for in-depth discussions, hands-on

demonstrations, and the exchange of research insights in systems science and engineering. The annual Systems Science and Engineering Symposium is dedicated to promoting interaction and collaboration between academia and industry professional.

12. Chapter Name: Education Society Taipei Chapter (E25)

i. 21st TAIWAN MICROMOUSE AND INTELLIGENT ROBOT CONTEST (8/18/2024)
Attendance: 210

The international contest is supported by the Taiwan Ministry of Education, whose objective is to encourage those vocational and technical university students in Taiwan to implement a complete robotic system and to improve their implementation skills through contests. There are also invited famous international contestants to participate the contest and share their experiences in building their robots. The mobile robot contest includes Micromouse, Robotrace and Line-maze competitions, and the fastest running robot in 3 trials wins the contest.

ii. WORKSHOP FOR Robot education & Promotion experiences (12/20/2024)
Attendance: 6

Chapter chairman shares his experiences in robot engineering education and promotion in this technical meeting. The first benefit of focusing his effort on engineering education is the teaching materials are more practical for vocational students in Taiwan, because they are not good at theories. Although the research efforts are focused on educational materials, there are many interesting and practical implementation skills involved when the topic is related to an international contest.

Juing-Huei shares his experiences in combining the courses and the micromouse, robotrace, line maze robot contests, and found out the students can then spend more time on the robot related skills of printing circuit board designs, mechanical structures design, microcontroller selection, sensor calibration, line position prediction with weighted average methods, linear and angular velocity servo control firmwares, running course identification, maze solvers, and path planning, etc. The outcomes of these experiences are also collected and submitted to the IEEE Transactions on Education, which helped promoted Juing-Huei to the Professor.

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

Four technical activities were organized by the chapter, in which one was joint event with the EDS NCTU Student chapter. They are listed below.

i. January 30, 2024 Workshop

5 speakers were invited to give a review on the 2023IEDM in several categories: (1) 3D stacked transistors, (2) Emerging memories, (3) Simulation and stochastic computing, (4) Computing in Memory, and (5) Quantum computing and Si-Photonics.

Attendance: Members50, Guests 80

Activities: Invited talk and DL talk.

ii. April 22-25, 2024 VLSI-TSA (co-sponsor with the organizer- ITRI)

3 Keynotes were arranged: (Dr. Naoto Horiguchi, IMEC, Unveiling CMOS Scaling by Nanosheet Device Architectures and Backside Engineering (Thomas Mikolajick, TU Dresden and NaMLab gGmbH) Ferroelectric for enhanced semiconductor devices, (Raja Swaminathan) AMD: Enabling AI Revolution through Innovations in Advanced Packaging & Chiplet Technology).

Attendance: Members 120, Guests 330

Activities: Invited keynotes and contributed papers

iii. December 20, 2024 (Virtual)

3D Stackable BEOL-Compatible Devices (speaker: Xiao Gong, NUS)

Attendance: Members 20, Guests 30

Activities: Invited speaker

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

i. fMRI Educational Training I 2024

Functional MRI Educational Training I 2024, which was sponsored by the Ministry of Science and Technology, organized by the Department of Electrical Engineering, Department of Psychology and Neurobiology and Cognitive Science Center of National Taiwan University was held on Jan 18th, 2024. There were 36 participants joining the event. The event aimed at promoting fMRI techniques to Humanities researchers, engineers, and psychologists, and educating students the interdisciplinary Science and Social Science.

ii. MEG Educational Training I 2024

2024 MEG Educational Training I, organized by the Ministry of Science and Technology and National Taiwan University, was held in National Taiwan University on Jul 12th. There were 16 participants joined in the training course. The course aimed at providing in-depth courses in experimental design, data collection, data analysis, and result interpretation to researchers interested in using magnetoencephalography (MEG) to study brain function and its correlation with social sciences.

iii. Biomedical Electronics and Bioinformatics Camp, 2024

The 2024 National Taiwan University Biomedical Electronics and Bioinformatics Camp was held from 23th to Aug 24th at NTU Barry Lam Hall. We hoped to give our participants a broad introduction to emerging and innovative technologies. We invited many speakers with academic or industry background to discuss about this topic from different aspects such as biology, software, hardware, etc.

Meanwhile, combining interdisciplinary expertise, grasping opportunities for effective cross communication, and preparing for upcoming biomedical applications are all challenging tasks that need further exploration by researchers.

A total of 28 participants joined the event, including high school students, college students, graduated students and members of the community. Apart from biomedical and engineering professionals, there were also people with financial and management backgrounds. According to our questionnaires, all participants were quite satisfied with the program and were willing to participate again. At the same time, they gave high ratings to speaker presentations.

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

15. Chapter Name: Electromagnetic Compatibility Society Taipei Chapter (EMC27)

In 2024, IEEE EMC-S Taipei Chapter (EMC27) held and sponsored three technical activities as follows:

i. **Testing standards and inspection plans for smart-pole systems**

Date: Oct. 20, 2024

The technical meeting was held on Oct. 20, 2024 at the National Taiwan University, Taipei. It focused on the electromagnetic compatibility standards and inspection plans for the smart-pole systems.

ii. **Testing standards and inspection plans for 6G chip systems**

Date: Oct. 23, 2024

The technical meeting was held on Oct. 23, 2024 at the National Taiwan University, Taipei. It focused on the electromagnetic compatibility standards and inspection plans for the future 6G chip systems.

iii. **The 8th Symposium on Smart Life for Next Generation**

Date: Dec. 6, 2024

IEEE EMC Taipei Chapter together with AUDEN Techno Corp. organized the eighth symposium on the topic of "Smart Life for Next Generation – Wireless Convergence for Infinite Sustainability" on Dec. 6, 2024. It hosted at the Taipei International Convention Center (TICC). In the morning, the symposium began with VIP welcome remarks and the General Session of five keynote speeches. The Technical Session with five speeches and a panel discussion was hosted in this afternoon. The symposium focused on the AI-driven communication and its challenging issues

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

I. Technical Seminars:

1.1 Date: May.1th, 2024
Topic: Soil Moisture Active Passive SMAP Mission
Speaker Dr. Jyh-Cheng Chen, Scientist, California Institute of Technology, CA, USA
Location: National Taipei University of Technology, Taipei, Taiwan

1.2 Date: May.15th, 2024

Speaker: Prof. LIN, HUEI-YUNG
Topic: UAV Detection and Tracking by Features-Enhanced Yolo and Kalman Filtering
Speaker: Prof. Chin-Tien Wu, National Yang Ming Chiao Tung University
Date: March. 8th, 2023

II. Other Technical Activities:

2.1 Date: June.5th, 2024
Topic: free5GC: free the cellular core networks
Speaker: Prof. Jyh-Cheng Chen, Dean. National Yang Ming Chiao Tung University
Location: National Taipei University of Technology, Taipei, Taiwan

2.1 Date: September.18th, 2024
Topic: AI applications for cutting-edge biomedical technologies
Speaker Prof. Chien-Yueh Lee, National Taipei University of Technology
Location: National Taipei University of Technology, Taipei, Taiwan

III. Professional Development (career advising, mentoring, etc.):

3.1 Date: September. 25th, 2024
Topic: Trends and Experience Sharing in the Satellite
Speaker: Lewis Hong, Founding Partner. FP Solutions VC
Location: National Taipei University of Technology, Taipei, Taiwan

IV. 2021 IEEE GRSS Taipei Chapter Best Thesis Award.

The IEEE GRSS Taipei Chapter Best Thesis Award has been established to recognize both college and graduate students who are excellent in the field of geoscience and remote sensing. The Best Thesis Award is granted on an annual basis to full-time students who excel in the academic pursuits during their studies. Each geoscience and remote sensing related academic department is allowed to nominate some candidates, who have to compete with other top students in the same faculty for the Award. In selecting the individuals, the factors considered are significance of both academic and educational contributions in terms of innovation and the extent of its overall impacts. The 2024 IEEE GRSS Taipei Chapter Best Thesis Award is presented to 4 students who come from different universities.

V. Professional Activities
Involvement with GRSS (participation in IGARSS and other GRSS-sponsored conferences, number of papers vs. number of membership, sessions organized at such conferences, hosting conferences, etc.)

5.1 IGARSS 2024 Involvement: There were more than 30 papers submitted and presented by IEEE GRSS Taipei Chapter members in IGARSS 2024 on line.

17. <u>Chapter Name: Industry Applications Society Taipei Chapter (IA34)</u>

2024 IAS Seminar Series

【Talk 1】

- Speaker: Dr. Taro Takamori from Tokyo Metropolitan University, Tokyo, Japan
- Seminar Title: Research of Solid-State Circuit Breakers for Low-Voltage DC Distribution Systems
- Date: March 1, 2024 (Fri)

• Time: 1:30pm-2:30pm (Taiwan Time)

Location: National Tsing Hua University, Delta Building R209

IEEE Member Attendance: 10

Guest Attendance: 20

Invited Students: Yes

【Talk 2】

• Speaker: Dr. Hiroki Watanabe from Nagaoka University of Technology, Nagaoka, Japan

• Seminar Title: Introduction of power electronics laboratory in Nagaoka University of Technology

• Date: March 22, 2024 (Fri)

• Time: 1:30pm-3pm (Taiwan Time)

Location: National Tsing Hua University, Delta Building R209

IEEE Member Attendance: 5

Guest Attendance: 20

Invited Students: Yes

【Talk 3】

• Speaker: Dr. Udaya Madawala from Computer and Software Engineering University of Auckland, New Zealand

• Seminar Title: Wireless Grid Interfaces for V2X Applications

• Date: September 19, 2024 (Thursday)

• Time: 10 :30am-12 :00pm (Taiwan Time)

Location: National Taiwan University of Science and Technology, Room TR-312

IEEE Member Attendance: 5

Guest Attendance: 110

Invited Students: Yes

18. <u>Chapter Name: Industrial Electronics Society Taipei Chapter (IE13)</u>

i. Advances in Electrical Power and Energy Systems Research at UTS

Date: 2024/05/31

Attendance: Technical Seminar 60+

The Seminar on Power Electronics and Electrical Research at University of Technology Sydney (UTS)The Power Electronics and Electrical Research team from UTS is visiting Taiwan to share their latest research developments. This seminar will introduce cutting-edge research conducted at UTS as well as relevant research at National Taiwan University of Science and Technology (NTUST).

Speakers and Topics

◈ Prof. Dylan D.C. Lu (UTS)

📌 Advances in Electrical Power and Energy Systems Research at UTS

Prof. Lu will present recent advancements in electrical power and energy systems research at UTS, covering innovative solutions and emerging technologies in the field.

◈ Prof. Ricardo P. Aguilera (UTS)

📌 Model Predictive Control of High Power Converters

Prof. Aguilera will discuss the application of Model Predictive Control (MPC) in high-power converters, highlighting its advantages in improving performance, efficiency, and reliability.

◈ Prof. C.K. Lee (UTS)

📌 Wireless Power Transfer – Material, Circuits, and Applications

Prof. Lee will introduce the fundamentals of wireless power transfer (WPT), including material selection, circuit design, and potential applications in modern power electronics.

◈ Prof. Yougang Guo (UTS)

📌 Characterization of Magnetic Properties of Advanced Electromagnetic Materials and Their Application in Electromagnetic Devices

Prof. Guo will present methods for characterizing advanced electromagnetic materials, exploring their impact on the design and performance of electromagnetic devices.

◈ Prof. Bryan M.H. Pong (NTUST)

📌 Power Converter Design Automation by AI and EMI Issues for Power Modules

Prof. Pong will discuss the use of artificial intelligence (AI) in power converter design automation, addressing key challenges related to electromagnetic interference (EMI) in power modules.

This seminar provides an excellent opportunity for researchers, students, and industry professionals to engage in discussions and exchange insights on the latest advancements in power electronics and electrical engineering

ii. AI Power Revolution & Design Trends in EV Power

Date: 2024/5/15

Attendance: Technical Seminar, 60+

Dr. YH Leu is the current Executive Vice President (EVP) at AcBel Polytech. He holds a PhD in Electrical Engineering from National Taiwan University. Dr. Leu has extensive experience in the power electronics industry, having held significant positions at leading companies. He served as the Senior Director and Taiwan Site Lead at Artesyn Embedded Technologies, and also as the Engineering Director at Delta Electronics. With his extensive background in both industry and academia, Dr. Leu is well-equipped to discuss cutting-edge trends in power systems and their applications. The talk titled "AI Power Revolution & Design Trends in EV Power" will delve into the intersection of artificial intelligence (AI) and power systems, with a special focus on the electric vehicle (EV) industry. Dr. Leu will explore how AI is reshaping the design, operation, and management of power electronics within EVs, improving their performance and efficiency. As AI continues to evolve, it is having a profound impact on how power systems are designed and optimized for electric vehicles. In addition, Dr. Leu will provide insights into the current design trends in EV

power systems, highlighting the latest technological advancements and methodologies that are driving the future of electric vehicles. This talk will shed light on the emerging technologies that are shaping the EV power sector, offering valuable knowledge for those involved in the development and deployment of EV power systems. The event will take place on May 15, 2024, at National Taiwan University of Science and Technology (NTUST), where Dr. Leu will share his expertise on these transformative trends in power electronics.

iii. Power electronics and hybrid transformers in distributed energy system - opportunities and challenges

Date:2024/06/21

Attendance: Technical Seminar, 50+

The fast development of distributed generation systems (DGS), including an increasing number of renewable energy sources (RES), demand the change of classical grid into smart grids (SG), integrating all new distributed elements, e.g., active loads/sources/energy storages. Currently used conventional transformer cannot fulfill all requirements of SG. Therefore a new solution is demanded due to the nature of highly different types of energy sources, loads, and frequent voltage disturbances occurring in DGS. The proposed modern solutions are the applications of multifunctional power electronics, fault-tolerant power electronics, and hybrid transformers, that are able not only to meet the main requirements of SG but also respond to the future challenges defined by the constant progress of technology in all new fields (e.g., electromobility, energy store systems, etc.)

Professor Mariusz Malinowski received the Ph.D. and D.Sc. degrees in electrical engineering from the Institute of Control and Industrial Electronics, Warsaw University of Technology (WUT), Warsaw, Poland, in 2001 and 2012, respectively. He is currently with the Institute of Control and Industrial Electronics, WUT. He has co-authored more than 150 technical papers and seven books. His current research interests include the control and the modulation of grid-side converters, multilevel converters, smart grids, and power generation systems based on renewable energies. Prof. Malinowski was a recipient of the IEEE IES David Irwin Early Career Award, IEEE IES Bimal Bose Energy Systems Award, Polish Prime Minister Award and the Polish Ministry of Science and High Education Award. He is a Fellow of IEEE. He is a corresponding member of the Division of Engineering Sciences of the Polish Academy of Sciences

iv. Wireless Grid Interfaces for V2X Applications

Date: 2024/09/19

Attendance: Technical Seminar, 50+

The presentation will address the growing role of Electric Vehicles (EVs) in the transportation sector, with an emphasis on the integration of vehicle-to-X (V2X) technology. This technology enables EVs to serve as energy storage systems, facilitating various applications such as vehicle-to-home (V2H), vehicle-to-grid (V2G), vehicle-to-building (V2B), and vehicle-to-load (V2L). The core concept of V2X applications is the bi-directional power interface that allows EVs to both charge and discharge energy. A key technology that will be highlighted is Inductive Power Transfer (IPT), which offers a safe and convenient solution for wireless charging, enhancing the flexibility and usability of EVs in energy exchange. The seminar will also cover the challenges associated with V2X technologies and explore future directions for the development of grid interfaces, particularly in wireless V2X applications.

Prof. Udaya Madawala is a distinguished academic affiliated with the Department of Electrical, Computer, and Software Engineering at the University of Auckland, New Zealand. He holds the prestigious title of IEEE Fellow and serves as a Distinguished Lecturer for the IEEE Power Electronics Society.

Prof. Madawala's expertise spans various fields within electrical engineering, with a special focus on power electronics, renewable energy, and bi-directional wireless power transfer systems for V2X applications. His research interests also cover permanent magnet motor drives, high-power converters, and electric vehicle (EV) battery charging technologies.

In addition to his academic contributions, Prof. Madawala holds several leadership roles. He is the Deputy Head of the Department for Research at the University of Auckland and a member of the University Disciplinary Committee. He is also actively involved in professional service within the IEEE community. He serves on the IEEE Fellow Nominations Committee and the IEEE Power Electronics Society's AdCom & member-at-Large Nomination Committee. Furthermore, he is an Associate Editor for the IEEE Transactions on Power Electronics and chairs the Steering Committee for the IEEE Southern Power Electronics Conference (SPEC).

Prof. Madawala's extensive work in the field of power electronics and his active participation in shaping the future of V2X technologies make him an authority on the topic, and his seminar promises to provide invaluable insights into the future of EVs and their integration into smart energy systems.

v. Wireless Power Transfer-from Science Fiction to Reality

Date: 2024/11/15

Attendance: Technical Seminar, 40+

The seminar explores the remarkable century-long quest to achieve reliable and efficient wireless power transfer, with significant breakthroughs occurring in the past decade. Dr. Mi will discuss how the convergence of semiconductor technology, electromagnetic materials, and microcomputer systems has revolutionized wireless charging capabilities. The applications now extend far beyond simple smartphone charging to encompass electric

vehicles, medical implants, underwater vehicles, industrial automation systems, and even large-scale maritime vessels.

Dr. Mi, who holds the prestigious distinctions of being both an IEEE and SAE Fellow, has made substantial contributions to this field. As a Distinguished Professor in the Department of Electrical and Computer Engineering at San Diego State University, his research has focused on making wireless power transfer more accessible, efficient, and cost-effective. His innovations have paved the way for practical applications such as cable-free conference rooms, battery-less drone operations, and automated factories where untethered robots and autonomous vehicles can operate freely.

The presentation promises to showcase how what once seemed like science fiction has transformed into practical reality, demonstrating the technological leaps that have made wireless power transfer an increasingly viable solution across various industries. Attendees will gain insights into the latest developments in this rapidly evolving field and its potential future applications.

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

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

i. **IEEE IMS Technical Lecture** Given by **Prof. Wataru Nastu** from the Tokyo University of Agriculture and Technology at Japan – ***Novel Electrochemical Machining Method with Electrolyte Restrained in Predefined Region***

Time: 02/29/2024; 3:30 p.m.- 5:00 p.m.

City: Hsinchu

Country: Taiwan

Attendance: 25

Event Description: Distinguished Professor Wataru Natsu from the Department of Industrial Technology and Innovation at Tokyo University of Agriculture and Technology was invited to deliver a technical seminar of "Novel Electrochemical Machining Method with Electrolyte Restrained in Predefined Region" on February 29, 2024.

Prof. Wataru Natsu serves as a distinguished professor and the dean at the Department of Industrial Technology and Innovation, Tokyo University of Agriculture and Technology. His research fields include electrical discharge machining, electrochemical machining, die and mold design and manufacturing, shape measurement of semiconductor wafers, and management of technology (MOT). He has received the Fellowship of the Engineering Academy of Japan. He also serves as the Chairman in the Committee of Ethics for Engineers at Japan Society of Mechanical Engineers, the Chairman in the Committee of General Affairs at Japan Society for Precision Engineering, and the Chairman in the Standardization Committee of Electric Discharge Machine at Japan Machine ToolBuilders' Association.

ii. **IEEE IMS Technical Lecture** Given by **Dr. Hsun-Jen Chuang** from the U.S. Naval Research Laboratory at U.S.A – ***Optical and Mechanical properties of Twisted TMD van der Waals Heterostructures***

Time: 04/29/2024; 11:00 a.m.- 12:30 p.m.

City: Hsinchu

Country: Taiwan

Attendance: 20

Event Description: Dr. Hsun-Jen (Ben) Chuang is currently a Research Physicist at Materials Science and Technology Division under U.S. Naval Research Lab in Washington D.C. His primary research focus is on exploring and understanding the novel mechanical, optical and electrical properties inherent in layered two-dimensional semiconducting materials, with a specific focus on transition metal dichalcogenides (TMDs) and their heterostructures. The technical seminar of "Optical and Mechanical properties of Twisted TMD van der Waals heterostructures" was delivered on April 29, 2024.

iii. **IEEE IMS Technical Lecture** Given by **Prof. Pai-Yen Chen** from the University of Illinois Chicago at U.S.A – IEEE Distinguished Lecture: ***Micro and Nanotechnology-Driven Antennas, Circuits, and Sensors for Telehealth and Telemedicine***

Time: 06/03/2024; 11:00 a.m.- 12:30 p.m.

City: Hsinchu

Country: Taiwan

Attendance: 25

Event Description: Prof. Pai-Yen Chen is a Professor in the Department of Electrical and Computer Engineering at the University of Illinois Chicago (UIC). He has been involved in multidisciplinary research on applied electromagnetics, antennas and circuits, wireless sensors and systems, metamaterials, plasmonics, nanophotonics, and nanoelectronics. He currently serves as Associate Editor of IEEE Sensors Journal, IEEE Transactions on Antennas and Propagation, and IEEE Antennas and Wireless Propagation Letters. He currently serves as the chair of IEEE Chicago AP-S/MTT-S Joint Chapter, and was chair/founder of IEEE Chicago Sensors Chapter and the ACES Board of Directors.

Prof. Chen is appointed as Distinguished Lecturer of the IEEE Sensors Council for the 2024-2026 period. He was invited to deliver a Distinguished Lecture titled "Micro and Nanotechnology-Driven Antennas, Circuits, and Sensors for Telehealth and Telemedicine" on June 3, 2024.

iv. **IEEE IMS Technical Lecture** Given by **Prof. Shervin Shirmohammadi** from the University of Ottawa at Canada – ***Uncertainty-Assisted Trustworthy Decision Making with Machine***

Learning, Uncertainty Quantification in Machine Learning-Assisted Measurements: (I) Basics and ML Regression & (II) ML Classification

Time: 06/26/2024、07/17/2024、07/29/2024; 11:00 a.m.- 12:30 p.m.

City: Hsinchu

Attendance: 60+

Event Description: Prof. Shervin Shirmohammadi is a Professor in the School of Electrical Engineering and Computer Science (EECS) at University of Ottawa, Canada. He is also the Director of Discover Laboratory at uOttawa. As the current Executive Vice President of IEEE IMS, Prof. Shirmohammadi was invited to share his expertise with researchers while having a great discussion on society management and promotion with IMS Taipei Chapter members during his visit.

Prof. Shervin Shirmohammadi was invited to deliver a series of technical seminars on "Uncertainty-Assisted Trustworthy Decision Making with Machine Learning" and "Uncertainty Quantification in Machine Learning-Assisted Measurements: (I) Basics and ML Regression & (II) ML Classification" during June and July in 2024.

v. **Chapter Feature Activity: Semiconductor Atomic Level Technology Symposium and Workshop**

Time: 08/14/2024; 9:00 a.m.-6:00 p.m.

City: Hsinchu

Attendance: 150

Event Description: IEEE IMS Workshop titled "Semiconductor Atomic Level Technology Symposium and Workshop" was held on August 14, 2024. The IEEE IMS Taipei Chapter Chair gave an opening speech and provided technical assistance in coordinating the workshop. Five outstanding experts in the field were invited to the workshop, including Prof. Der-Hsien Lien from National Yang Ming Chiao Tung University, Dr. Bo-Huei Liao from Taiwan Instrument Research Institute of NARLabs, Dr. Meng-Fan Chang from TSMC, Dr. Tse-An Yeh from Entegris Inc., and Mr. Howard Huang from MSScorps.

vi. **IEEE IMS Technical Lecture** Given by **Prof. Mark Ming-Cheng Cheng** from the University of Alabama at U.S.A. – ***Finding Microplastics: Management of Emerging Pollution in the Environment***

Time: 09/27/2024; 11:00 a.m.- 12:30 p.m.

City: Hsinchu

Attendance: 25

Event Description: Prof. Mark Ming-Cheng Cheng is currently a full Professor at the Department of Electrical & Computer Engineering in the University of Alabama. Prof. Cheng's research interests include sensor design, internet-of-things (IoT), biomedical devices, microelectromechanical systems (MEMS), and 2D materials. The technical seminar of

"Finding Microplastics: Management of Emerging Pollution in the Environment" was delivered on September 27, 2024.

vii. **Chapter Feature Activity: The 16th NARLabs *i*-ONE Instrument Technology Innovation Competition**

Time: 10/05/2024; 09:00 a.m.-7:00 p.m.

City: Hsinchu

Attendance: 90+

Event Description: NARLabs *i*-ONE Instrument Technology Innovation Competition was a student innovation competition jointly held by the IMS Taipei Chapter, Taiwan Instrument Research Institute, and ASME Taiwan Section from August through October. At the year of 2024, *i*-ONE entered its 16th year and has attracted nearly 90 students from Taiwan countries to participate in. 14 proposals from two groups (the high school group and the college & above group) were selected to the final competition and presented their ideas on October 5, 2024. All the participants had showed the impressive designs and amazed the committee. During the final competition, participants had the opportunity to demonstrate their workpiece and observed others at the same time. The awards and their prizes (NTD $350,000 in total) were presented at the award ceremony right after the competition. This year, high school group winner was the students from National Chia-Yi Industrial Vocational High School (CYIVS), with their presentation titled "Development of Intelligent Micro Punching Machine". The winner of the college & above group was the students from National Tsing Hua University, with their presentation titled "Automated Measurement System for Whole-Field Stress and Tensile/Compression State".

Moreover, the IMS Taipei Chapter will recommend the winner of the college & above group to participate in the IEEE IMS Student Competition 2025 in Germany, offering Taiwanese students a valuable opportunity to showcase their innovative instrumentation on the international stage.

viii. **IEEE IMS Technical Lecture** Given by **Prof. Tsuchin "Philip" Chu** from the Southern Illinois University Carbondale at U.S.A. – ***NDE for Aerospace Composite Structures***

Time: 11/04/2024; 2:30 p.m.- 4:00 p.m.

City: Hsinchu

Attendance: 20

Event Description: Dr. Tsuchin "Philip" Chu is a professor in the School of Mechanical, Aerospace, and Materials Engineering and the Director of the Engineering Science PhD program at Southern Illinois University Carbondale (SIUC). His 40-year research portfolio encompasses areas such as NDE, additive manufacturing (AM), biomedical engineering, experimental mechanics, and composite materials. Professor Chu is widely recognized as a pioneer of digital image correlation (DIC) and is actively engaged in the cutting-edge research

in NDE. His current focus includes the innovative application of AI/ML techniques for NDE in AM processes. He delivered a technical seminar on "NDE for Aerospace Composite Structures" on November 4, 2024.

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

The major activities of the information Theory Society, Taipei Chapter in 2024 are as follows:

i. The 2024 IEEE Taiwan Spring Workshop on Information Theory and Communications, as part of the 2024 Taiwan Telecommunications Annual Symposium, was held at National Central University, Taoyuan, Taiwan, from January 15 to January 16, 2024. The website of the symposium is available at http://www.mostcep.tw/telecom2024/. One of the main goals of Taiwan Telecommunications Annual Symposium is to offer a platform that facilitates information exchange and academic discussions among the researchers in Taiwan in the fields of information theory and communications. The symposium was co-sponsored by IEEE ITSoc Taipei Chapter, ITSoc Tainan Chapter, IEEE ComSoc Taipei Chapter, IEEE ComSoc Tainan Chapter, and the National Science and Technology Council (NSTC). There are 2 invited talks from the industry, 3 NSTC outstanding project sharing talks, 7 invited IT-Comm talks from the academia (including 3 talks delivered by speakers from abroad), all in the fields of information theory and communications. There are 115 participants, including 3 from the industry and the government, 38 professors and 74 students.

ii. The 2024 IEEE Taiwan Fall Workshop on Information Theory and Communications was held at National Cheng Kung University from August 13 to August 14, 2024, co-sponsored by IEEE ITSoc Taipei Chapter, IEEE ITSoc Tainan Chapter, IEEE ComSoc Taipei Chapter, IEEE ComSoc Tainan Chapter, and the National Science and Technology Council. The workshop provides seven invited talks for professors and graduate students majoring in communication and information theory in Taiwan. These presentations come from renowned experts in their fields. There are 159 participants, including 52 IEEE members.

21. Chapter Name: Magnetics Society Taipei Chapter (MAG33)

1. 2024 Magnetics Society Summer School (MSSS)
   Time: 6/9-6/14

   The 2024 IEEE Magnetics Society Summer School (MSSS) successfully concluded on June 14 in Taipei, Taiwan, bringing together over 80 students and international scholars. Originally planned for 2020 but canceled due to the pandemic, this year's MSSS was revitalized with the support of the MagSoc education committee, particularly EdCom Chair Hyunsoo Yang and Treasurer Peng Li. The program featured 13 distinguished lecturers from academia and industry, covering fundamental and emerging topics in magnetism. Prof. Hirohata Atsufumi, IEEE MagSoc president, delivered the opening talk, and students quickly bonded over lectures, poster sessions, and Taipei's vibrant atmosphere.

   Beyond academic discussions, students engaged in lively poster sessions, showcasing high-quality research and networking with peers and experts. Excursions, a key part of MSSS, included visits to Taipei 101 and the National Synchrotron Radiation Research Center (NSRRC)

in Hsinchu Science Park, offering valuable insights into Taiwan's advanced research infrastructure. The event concluded with the presentation of nine poster awards, generously supported by Hprobe, and industry contributions from Quantum Design and TSMC, bridging academia with real-world applications.

2. 2024 Taiwan Association Magnetic Technology (TAMT) Annual Meeting
Time: 7/24-7/26
We invited the following speakers (selected):
(1) Chi-Feng Pai: National Taiwan University
(2) Chao-Yao Yang: National Yang-Ming Chiaotung University (NYCU)
(3) She-Yun Chen: National Taiwan University of Science and Technology
(4) Hua-Shu Hsu: National Pingdong University
(5) Danru Qu: National Taiwan University
(6) Ssu-Yen Huang: National Taiwan University
(7) Po-Yao Wang: National Changhua University of Education

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

23. Chapter Name: Power Electronics Society Taipei Chapter (PEL35)

"IEEE PELS–Dr. Kris Dorsey Lecture Series"

【Talk 1】

• Speaker: Dr. Kris Dorsey from Northeastern University,USA

• Seminar Title: Title: The challenge of power management in wearable robotics

• Date: March 8, 2024 (Fri)

• Time: 2pm-3pm (Taiwan Time)

Location: National Taiwan University EE2-Room105

IEEE Member Attendance: 5

Guest Attendance: 5

【Talk 2】

• Speaker: Dr. Kris Dorsey from Northeastern University,USA

• Seminar Title: How do we power a soft robot?

• Date: March 14, 2024 (Thu)

• Time: 3:30pm-4:30pm (Taiwan Time)

Location: National Taiwan University EE2-Room105

IEEE Member Attendance: 5

Guest Attendance: 28

"IEEE PELS–Power Electronics PhD school"

• Date: July 12-13, 2024

Location: National Taiwan University BL-Room201

IEEE Member Attendance: 6

Guest Attendance: 35

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

PSES Taipei Chapter hosted the follow events in 2024. These technical forum event

provided a great opportunity for industry compliance field. participants from all over system brands, certify body. Meeting goal is to present the latest system compliance design concepts, requirement deviation, impact on developments and new regulation introduction. To facilitate interactions between manufacturers and authorities

Date: Aug. 21, 2024

Venue : Lenovo, Taiwan / Online

Attendance: 75 – Sever brands, ODM, compliance, commodity supplier, mechanical, marketing

Topic	Lecturer
● New Edition 4 of IEC 62368-1 released ● The implementation status of the standard ● The major differences between the 4th edition and previous versions ● Edition 4 - impacts on water loop device	HW Tsai, Lenovo

IEEE PSES Taipei Chapter – Regular Technical Forum Meeting of Nov.

Date: November 17, 2024

Location : Google_ Hsintian Office, Taiwan

Attendance: Member: 6, Guests 30 : system brands, commodity suppliers and Certify Bodies

Topic	Presented by
Time / Agenda: 13:40~13:50 pm IEEE Chapter –Welcome Speech 13:50~14:00 pm Google TW Office Virtual Tour 14:00~ 14:30 pm Data Center Safety with Q&A 14:30~14:45 pm Teatime Break 14:45~15:30 pm Cyber Security ,with Q&A 15:30~16:00 pm IEEE PSES Membership Promotion and Recruiting	Dessy Lee_ Google Michael Sun_ Dekra-

25. Chapter Name: Power and Energy Society Taipei Chapter (PE31)

i. PES Taipei Webinar – *2024 PES Seminar*

Time: Sept. 25, 2024; 2:25PM-4:45 PM
Country: Hong Kong, Macau, Japan, South Korea, and Taiwan
Location: Internet
Speaker: Refer to the following agenda
IEEE Member Attendance: 86
Guest Attendance: 25
Invited Students: Yes

ii. *The Grand Future Forum on Offshore Wind Power Operation and Maintenance*
Time: Sept. 14, 2024; 10:00AM-17:30 PM
Country: Taiwan
Location: National Science and Technology Council
IEEE Member Attendance: 48
Guest Attendance: 12
Invited Students: Yes

iii. *Project Competition for Sustainable Energy*
Time: July 4, 2024; 10:00AM-17:00 PM
Country: Taiwan
Location: National Central University
IEEE Member Attendance: 38
Guest Attendance: 5
Invited Students: Yes

iv. *Technical Visiting for Battery Energy Storage System*
Time: Nov. 25, 2024; 10:00AM-12:00 PM
Country: Taiwan
Location: Battery Energy Storage System in Tatung Company
IEEE Member Attendance: 5
Guest Attendance: 35
Invited Students: Yes

v. *Build up Special Interest Group for Virtual Power Plant*
Time: Dec. 20, 2024; 10:30AM-12:30 PM
Country: Taiwan
Location: Taipei Computer Association
IEEE Member Attendance: 8
Guest Attendance: 42
Invited Students: Yes

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

In the year 2024, we organized five events across different categories, including Professional Development, Social, and Technical. Below is a detailed summary of each event:

1: Event: IEEE Photonic Society (PHO36) Taipei Chapter Annual Meeting 2024, (PHO36)
Date: November 28, 2024
Time: 11:55 AM – 01:20 PM
Location: Taipei, Taiwan
Category: Professional Development
Host: Taipei Section Chapter, PHO36

The IEEE Photonic Society (PHO36) Taipei Chapter Annual Meeting 2024 was successfully held on November 28, 2024, as part of the professional development initiatives of the Taipei Section Chapter, PHO36. The event provided an excellent platform for professional engagement, knowledge sharing, and discussions on key developments within the IEEE Photonic Society and its Taipei Chapter.

●Key Highlights:

1.1 Chapter Status Report:

- Delivered by Prof. Yuh-Renn Wu, this session provided an overview of the current status, ongoing activities, and future plans of the Taipei Chapter (PHO36). The report emphasized recent achievements, challenges, and strategies for growth.

1.2 IEEE Senior Member and Fellow Elevation:

- Prof. Perry Shum, President of the IEEE Photonic Society, gave an insightful talk on the process and benefits of IEEE Senior Membership and Fellow Elevation. He highlighted the significance of professional recognition in career development and provided guidance on application procedures and qualification criteria.

1.3 Free Discussion:

- An open discussion session allowed participants to engage in meaningful dialogues, exchange ideas, and explore collaborative opportunities. Attendees actively participated in discussions on the evolving landscape of photonics research and industry trends.

● Event Collaboration:

This annual meeting was held in conjunction with OPTIC - The Optics & Photonics Taiwan, International Conference - Annual Meeting of Taiwan Photonics Society, 2024 (PHO36), further enhancing its reach and impact within the photonics community.

● Attendance:

- IEEE Members Attended: 100
- Guests Attended: 950

The event was a resounding success, fostering professional networking and knowledge exchange among researchers, professionals, and IEEE members. The discussions and presentations provided valuable insights into the advancement of photonics technology and IEEE membership elevation processes. The IEEE Photonic Society (PHO36) Taipei Chapter looks forward to continuing its commitment to professional development and community engagement in future events.

2: Event: Creation and Inheritance of WIO Prosperous Life, (PHO36)

Date: November 26, 2024
Location: National Taipei University of Technology, Taipei, Taiwan
Building: Auditorium
Room Number: 303
Category: Social

● Host: CH10209 - Taipei Section Chapter, PHO36

The event “Creation and Inheritance of WIO Prosperous Life” was successfully organized by the Taipei Section Chapter, PHO36, on November 26, 2024. The program focused on professional development, career growth, financial planning, and wealth inheritance, with insightful talks and discussions led by renowned speakers from academia and industry.

● Key Highlights:

2.1 Opening and Group Photos:

- Hosted by Prof. Li-Chun Cheng (NTU)
- Speakers included Prof. Ray-Hua Horng (NYCU), Meredith Smith (OPTICA), and Prof. Jennifer Barton (SPIE President)

2.2 Career Management & Investment Strategies:

- Hosted by Prof. Wei-Chen Tu (NCKU)
- Keynote speaker: Natacha Chen (Innolux Corp.), who discussed the financial strategies and career prospects in the photonics industry.

2.3 Essential Course on Wealth Inheritance:

- Hosted by Prof. Hui-Hsin Hsiao (NTU)
- Speaker: Grace Ku (LCS & Partners), who provided insights into wealth management and inheritance laws.

2.4 Retrospective of WIO and Closing Ceremony:

- Hosted by Prof. Yu-Chieh Cheng (NTUT)
- Speaker: Prof. Yi-Hsin Lin (NYCU)

● Attendance:

- IEEE Members Attended: 40
- Guests Attended: 152

●Organizers, Sponsors, and Co-organizers:

- Organizers: TPS, Graduate Institute of Photonics and Optoelectronics (NTU), The Society of Taiwan Women in Science and Technology
- Co-organizers: AOTSI, NSTC, MOE Taiwan
- Sponsors: IEEE Photonics Society, OPTICA, INNOLUX, NYCU TKPPC, Academy of Innovative Semiconductor and Sustainable Manufacturing

The event provided a valuable platform for discussions on career growth and financial security for professionals in optics and photonics. Participants engaged in networking opportunities and knowledge exchange, reinforcing the importance of career development and wealth planning in the scientific community. The Taipei Section Chapter, PHO36, looks forward to future collaborations and continued engagement with the photonics community.

3: Event: The Optics & Photonics Taiwan, International Conference – Annual Meeting of Taiwan Photonics Society (OPTIC 2024), (PHO36)

Date: November 26–29, 2024

Location: Nangang Exhibition Center Hall 1, Taipei, Taiwan

OPTIC 2024 serves as the largest annual meeting on optics and photonics in Taiwan, bringing together leading researchers and experts from around the world to discuss advancements in optical materials, photonics technologies, and nano photonics.

●Attendance:

IEEE Members Attended: 100

Guests Attended: 950

●Sessions Covered:

- Nanophotonic Materials and Devices
- Optical Waveguides and Communications
- Quantum Photonics and Laser Technology
- Information Photonics
- Optical Design and Engineering
- Biophotonics and Biomedical Imaging
- Display and Solid-State Lighting
- Energy Photonics and Sustainable Technology
- Optical Sensing

This event played a key role in fostering collaboration among researchers, industry leaders, and academia, facilitating the exchange of knowledge and new developments in the field of photonics.

4. Event Name: 7th International Workshop on Ultraviolet Materials and Devices (IWUMD 2024), (PHO36)

Hosted by: CH10209 - Taipei Section Chapter, PHO36

Date and Time: June 2, 2024 - June 6, 2024

Location: Taipei, Taiwan

Venue: Taipei International Convention Center (TICC)

●Attendance:

IEEE Attendees: 60

Guest Attendees: 150

● Technical Program Summary:

- Plenary Talks: 7
- Invited Talks: 30
- Oral Talks: 64
- Poster Presentations: 35
- Late News Sessions: 3

● Total Paper Submissions: 136

- Paper Submissions by Country:

Taiwan: 68; Japan: 20; China: 9; United States: 8; Korea, Republic of: 7; Germany: 5; France: 5; Poland: 4; Saudi Arabia: 4; Australia: 1; India: 1; Italy: 1; Lithuania: 1; Pakistan: 1; Sweden: 1

The IWUMD 2024 successfully brought together leading experts, researchers, and industry professionals to discuss advancements in ultraviolet materials and device technologies. With a strong international presence and diverse technical sessions, the event served as a significant platform for collaboration and knowledge exchange. The plenary and invited talks covered key topics such as deep-UV LEDs, GaN-based optoelectronics, UV photodetectors, and emerging semiconductor materials. Poster sessions and late news discussions further enriched the workshop, showcasing cutting-edge research from around the world.This event demonstrated the continued global interest in ultraviolet material research and device development. The high number of submissions from Taiwan and other leading research nations highlighted the region's strong contributions to the field. The Photonics Society Taipei Chapter (PHO36) played a vital role in organizing and hosting this successful event, reinforcing its commitment to fostering innovation and collaboration in photonics and ultraviolet technologies.

Photo at conference opening

5: Event: Photonics Students summer camp for Undergraduate students, (PHO36)

● Host: CH10209 - Taipei Section Chapter, PHO36
● Co-Sponsor: Graduate Institute of Photonics and Optoelectronics, National Taiwan University
● Category: Professional Development
● Date & Time: August 12, 2024 - August 14, 2024
● Location: National Taiwan University, Electrical Engineering Building (EE II), Room 229
Address: 1 Roosevelt Road Sec 4, Taipei, Taiwan 10617
● Attendance: IEEE Members: 15 | Guests: 60

One of the most innovative activities that our chapter is proud to report on is the 2024 Photonics Summer Camp for Undergraduate Students, held from August 12 to 14 at National Taiwan University's Electrical Engineering Building. This three-day camp aimed to inspire undergraduate students from related disciplines to explore the fascinating world of photonics and consider future careers in this dynamic field.

The camp commenced with a keynote address by Prof. Yuh-Ren Wu, who provided an insightful overview of the current trends and future directions in the photonics industry. His speech encouraged participants to reflect on their interests within photonics research. The event featured a diverse range of activities, including interactive lectures, hands-on experiments, and industry visits.

● Key Highlights

- Biomedical Photonics Session by Prof. Hsiang-Chieh Lee showcased groundbreaking applications like non-invasive 3D tomography and intelligent image analysis algorithms.
- XR Display Technologies and the Metaverse by Prof. Huang-Yen Lin introduced students to immersive experiences beyond traditional display capabilities.

● Hands-on Activities:

- Immersive theater with VR simulations.
- 3D optical imaging technology demonstrations.

● Industry Visit: Students visited Play Nitride Display Co., Ltd., gaining real-world insights into Micro LED and advanced optical display technologies.

● Impact and Outcomes

This summer camp not only expanded students' technical knowledge but also fostered a deeper interest in photonics. It provided a platform for aspiring young scientists to connect, learn, and envision their future in the field. The event successfully bridged academic concepts with industry applications, inspiring the next generation of photonics professionals.

27. Chapter Name: Robotics and Automation Society Taipei Chapter (RA24)

28. Chapter Name: Reliability Society Taipei Chapter (RL07)

I. Technology Conference

i. 2024.9.30-2024/10/3

The twelfth annual IEEE Conference on Communications and Network Security (IEEE CNS) 2024

Location: Taipei, Taiwan

Program

<table>
<tr><th>Time
GMT+8</th><th>Monday
September 30</th><th>Tuesday
October 1</th><th>Wednesday
October 2</th><th>Thursday
October 3</th></tr>
<tr><td rowspan="2">8:00AM~
9:00AM</td><td>Breakfast
(8:00~8:40)</td><td rowspan="2">Breakfast</td><td rowspan="2">Breakfast</td><td rowspan="2"></td></tr>
<tr><td>Opening
(8:40~9:00)</td></tr>
<tr><td>9:00AM~
10:00AM</td><td>Keynote 1: Willy Susilo</td><td>Keynote 3: Wenjing Lou</td><td>Keynote 4: Zhou Jianying</td><td rowspan="3">WORKSHOP DAY:
- Cyber Resilience Workshop
- CPS-Sec Workshop (CPS-Sec 2024)
- Workshop on Security, Privacy, and Resilience of Next-Gen. Mobile Networks</td></tr>
<tr><td>10:00AM~
10:30AM</td><td colspan="3">Break</td></tr>
<tr><td>10:30AM~
12:00PM</td><td>SESSION 1: Large Language Models</td><td>SESSION 3: Machine Learning</td><td>SESSION 7: Privacy Enhancing</td></tr>
</table>

Time GMT+8	Monday September 30	Tuesday October 1	Wednesday October 2	Thursday October 3
	Security and Privacy	Security	Techniques	
12:00PM~ 1:00PM	Lunch	Lunch	Lunch	
1:00PM~ 1:30PM	Panel: Generative AI Security and Privacy	SESSION 4: IoT Security		
1:30PM~ 2:30PM			SESSION 8: Intrusion Detection and Threat Analysis	
2:30PM~ 3:00PM	Keynote 2: Ohba Yoshihiro	Break		
3:00PM~ 3:30PM		SESSION 5: Cryptographic Protocols	Break	
3:30PM~ 4:00PM	Break		SESSION 9: System Security	
4:00PM~ 4:30PM	SESSION 2: Wireless Security			
4:30PM~ 5:00PM		SESSION 6: Cyber Physical System Security		
5:00PM~ 5:30PM			Closing*1	
	Poster Session and Reception (6:30PM~ 8:30PM)	Conference banquet (6:00PM~ 8:00PM)		

Monday, September 30 2024	
8:00 AM-6:00 PM	Registration
8:00 AM-8:40 AM	Breakfast
8:40 AM-9:00 AM	Opening Session
9:00 AM-10:00 AM	Keynote 1: Willy Susilo
10:00 AM-10:30 AM	Break
10:30 AM-12:00 PM	SESSION 1: Language Models Security and Privacy
12:00 PM-1:00 PM	Lunch
1:00 PM-2:30 PM	PANEL: Generative AI Security and Privacy

2:30 PM-3:30 PM	**Keynote 2: Ohba Yoshihiro**
3:30 PM-4:00 PM	**Break**
4:00 PM-5:30 PM	**SESSION 2: Wireless Security**
6:30 PM-8:30 PM	**Posters Session and Reception**
Tuesday, October 1 2024	
8:00 AM-6:00 PM	**Registration**
8:00 AM-9:00 AM	**Breakfast**
9:00 AM-10:00 AM	**Keynote 3: Wenjing Lou**
10:00 AM-10:30 AM	**Break**
10:30 AM-12:00 PM	**SESSION 3: Machine Learning Security**
12:00 PM-1:00 PM	**Lunch**
1:00 PM-2:30 PM	**SESSION 4: IoT Security**
2:30 PM-3:00 PM	**Break**
3:30 PM-4:30 PM	**SESSION 5: Cryptographic Protocols**
4:30 PM-5:30 PM	**SESSION 6: Cyber Physical System Security**
6:00 PM-8:00 PM	**Conference banquet**
Wednesday, October 2 2024	
8:00 AM-6:00 PM	**Registration**
8:00 AM-9:00 AM	**Breakfast**
9:00 AM-10:00 AM	**Keynote 4: Zhou Jianying**
10:00 AM-10:30 AM	**Break**
10:30 AM-12:00 PM	**SESSION 7: Privacy Enhancing Techniques**
12:00 PM-1:30 PM	**Lunch**
1:30 PM-3:00 PM	**SESSION 8: Intrusion Detection and Threat Analysis**
3:00 PM-3:30 PM	**Break**
3:30 PM-5:00 PM	**SESSION 9: System Security**
5:00 PM-5:30 PM	**Closing**
Thursday, October 3 2024	

8:00 AM-4:00 PM	**Registration**
8:00 AM-9:00 AM	**Breakfast**
9:00 AM-5:00 PM	**WORKSHOP DAY:** **- Cyber Resilience Workshop** **- CPS-Sec Workshop (CPS-Sec 2024)** **- Workshop on Security, Privacy, and Resilience of Next-Generation Mobile Networks**

II. Invited talk

i. 2024.1.3

The Technical Lecture

Topic：Cybersecurity Fundamentals that Information Management Students Should Know

Speaker：Jen Yun, Executive Vice President, Ernst & Young Advisory Services Inc.

Attendance: 110

ii. 2024.3.19

The Technical Lecture

Topic：Hacking Techniques and Management Frameworks

Speaker：Huang Ching-Ying, Vice President of Technology, Acer Cyber Security Inc.

Attendance:60

iii. 2024.4.17

The Technical Lecture

Topic：Publishing in Top Journals: Reflections as an Author, Editor, and Reviewer in E-commerce

Speaker：Chee-Wee Tan, Department of Management and Marketing, Hong Kong Polytechnic University

Attendance:110

iv. 2024.4.29

The Technical Lecture

Topic：Artificial intelligence-driven information security technologies and applications

Speaker：Chi-Yuan Chen, Department of Computer Science and Information Engineering, National Ilan University

Attendance:29

v. 2024.5.6

The Technical Lecture

Topic：Security Challenges in Vehicle Networks

Speaker：Jheng-Jia Huang, Department of Information Management, National Taiwan University of Science and Technology

Attendance:29

vi. 2024.5.13

The Technical Lecture

Topic：User device trust management framework using blockchain technology

Speaker：Nai-Wei Lo, Department of Information Management, National Taiwan University of Science and Technology

Attendance:29

vii. 2024.5.20

The Technical Lecture

Topic：Trends and Security Challenges in Smart Healthcare

Speaker：Chien-Lung Hsu,Department of Information Management, Chang Gung University

Attendance:29

viii. 2024.5.23

The Technical Lecture

Topic：The Intersection of Surveillance, Cybersecurity Governance, and AI Security

Speaker：Director, De-En Wei, Institute for Information Industry

Attendance:29

ix. 2024.5.27

The Technical Lecture

Topic：Security Issues in Smart Vehicle Technologies

Speaker：President, Morgan Hung, Onward Security Corporation

Attendance:29

x. 2024.9.16

The Technical Lecture

Topic：Smart Homecare - Is IoT the Solution for Elderly Care?

Speaker：Kuo-Yu Tsai, Department of Information Engineering and Computer Science, Feng Chia University

Attendance:22

xi. 2024.9.30

The Technical Lecture

Topic：An Introduction to Ransomware

Speaker：Jen-Fu Wang, Department of Information Management, Yuan Ze University

Attendance:22

xii. 2024.10.7

The Technical Lecture

Topic：A New Era in Industrial Control System Security

Speaker：Jackie Lai, President, TMR Technology

Attendance:22

xiii. 2024.10.14

The Technical Lecture

Topic：Blockchain Security and Its Application

Speaker：Lo-yao Yeh, Department of Information Management, National Central University

Attendance:22

xiv. 2024.10.21

The Technical Lecture

Topic：Introduction to Privacy Protection and Post-Quantum Cryptography

Speaker：Ray-lin Tso, Department of Computer Science, National Chengchi University

Attendance:22

xv. 2024.10.28

The Technical Lecture

Topic：Brief Introduction to Post-Quantum Cryptography

Speaker：Yi-Fan Tseng, Department of Computer Science, National Chengchi University

Attendance:22

xvi. 2024.11.11

The Technical Lecture

Topic：Practical Applications of AI Technologies in Industry

Speaker：Chih-Hsueh Lin, Department of Electronic Engineering, National Kaohsiung University of Science and Technology

Attendance:22

xvii. 2024.11.18

The Technical Lecture

Topic：Risks of Information Leakages and Their Protection Mechanisms

Speaker：Kuo-Jui Wei, Director, AAA Security Technology

Attendance:22

xviii. 2024.11.25

The Technical Lecture

Topic：An Overview of Quantum Cryptography

Speaker：Kuo-Chun Tseng, Department of Computer Science and Information Engineering, National Ilan University

Attendance:22

xix. 2024.12.2

The Technical Lecture

Topic：Achieving Zero Trust in the Face of AI Technology Challenges

Speaker：Te-En Wei, Institute for Information Industry

Attendance:22

xx. 2024.12.9

The Technical Lecture

Topic：Introduction to FIDO Device Onboard

Speaker：Chia-Ning Lo, Department of Computer Science and Information Engineering, Chung Cheng Institute of Technology National Defense University

Attendance:22

xxi. 2024.12.16

The Technical Lecture

Topic：Security Challenges of AI

Speaker：Wen-Hwa Liao, Institute of Information and Decision Sciences, National Taipei University of Business, Taiwan

Attendance:22

xxii. 2024.12.23

The Technical Lecture

Topic：Research Progress and Applications of AI in Industry

Speaker：Chia-Mu Yu, Department of Electrical and Computer Engineering, National Yang Ming Chiao Tung University

Attendance:22

xxiii. 2024.12.30

The Technical Lecture

Topic：Practical Insights into Penetration Testing

Speaker：Yi-Sheng Huang, Institute for Information Industry

Attendance:22

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

i. Technical Talk

Dr. Kanishk Singh gave a talk with the title, "Room-Temperature Fabricated InZnxOy Flexible EGFET Sensor for Cardiac Biomarker Detection," at the Taiwan Engineering Medicine Biology Association (TWEMBA) in Taipei City, Taiwan, on 6th -7th of January, 2024.

ii. Distinguished Lecturer Technical Talk

We invited an IEEE Distinguished Lecturer, Prof. Pai-Yen Chen, to give a talk with the title, "Micro and Nanotechnology-Enabled Sensors, Antennas and Circuits for Internet-of-Things and Telemedicine," at EE725 Classroom, National Yang Ming Chiao Tung University, Hsinchu City, Taiwan on 16th of May 2024.

iii. Co-Hosting

Prof. Jerry Li-Chia Tai co-hosted a distinguished scholar, Prof. John Rogers of Northwestern University for a talk with the title, "Hybrid Approaches to Flexible Bioelectronic Systems", on 30th of August 2024, at National Yang Ming Chiao Tung University, Hsinchu City, Taiwan.

iv. Technical Talk

Prof. Jerry Li-Chia Tai gave a talk with the title, "3D Computer Simulation on Nano-dendritic Growth for Enhanced Bio-sensing Performance," at the International Conference on Flexible

and Printed Electronics (ICFPE) on 28th -30th of August 2024, at National Taiwan University, Taipei City, Taiwan.

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

i. Technically Co-sponsored ICSSE 2024 International Conference on System Science and Engineering (ICSSE 2024)

Date: June. 26-28, 2024

City: Hsinchu

Country: Taiwan

Attendance: 177

IEEE SMCs, Taipei Chapter co-organized the 2024 International Conference on System Science and Engineering (ICSSE 2024) held on 26-28 Nov. 2024, Hsinchu, Taiwan. (Website: https://icsse2024.web.nycu.edu.tw/committee/). The Taiwan Association of Systems Science and Engineering (TASSE) and National Yang Ming Chiao Tung University hosted the conference. The Chapter Chair, Prof. Li-Wei Ko, also served as the General Chair of the conference (ICSSE 2024). More than 150 papers were presented at the conference. This conference presents an exceptional opportunity for individuals, including scientists, engineers, and practitioners hailing from diverse corners of the globe, to showcase cutting-edge system design concepts, research findings, advancements, and practical applications. Furthermore, it aims to foster meaningful interactions and collaborations between scholars and professionals.

ii. The Invited Talk - Prof. Nikhil R Pal, IEEE Fellow

Date: June 27, 2024

Venue: National Yang Ming Chiao Tung University, Hsinchu, Taiwan

Attendance: 80

Topic: Artificial Intelligence with/without Biological Intelligence: some tidbits (Interplay between AI and BI)

Nikhil R Pal is a Professor in the Electronics and Communication Sciences Unit, and he was the founding Head of the Center for Artificial Intelligence and Machine Learning of the Indian Statistical Institute. His current research interest includes brain science, computational intelligence, machine learning and data mining. Professor Nikhil Pal is a recipient of the 2015 IEEE Computational Intelligence Society (CIS) Fuzzy Systems Pioneer Award and 2021 IEEE CIS Meritorious Service Award. He has served as the General Chair, Program Chair, and co-Program chair of several conferences. He has been a Distinguished Lecturer of the IEEE CIS (2010-2012, 2016-2018, 2022-2024) and was a member of the Administrative Committee of the IEEE CIS (2010-2012). He has served as the Vice-President for Publications of the IEEE CIS (2013-2016) and the President of the IEEE CIS (2018-2019). Professor Nikhil Pal is a Fellow of the West Bengal Academy of Science and Technology, Institution of Electronics and Tele Communication Engineers, National Academy of Sciences, India, Indian National Academy of

Engineering, Indian National Science Academy, International Fuzzy Systems Association (IFSA), The World Academy of Sciences, and a Fellow of the IEEE, USA.

iii. Technically Sponsored 2024 U.S.--Taiwan Bilateral Symposium

Symposium topic: Cutting-Edge Brain-Computer Interface (BCI) Technology

Date: Nov. 27, 2024.

Venue: EE International Conference Hall, B1, National Yang Ming Chiao Tung University, Hsinchu, Taiwan

Attendance: 111

IEEE SMCS-28 Taipei Chapter hosted a "U.S.--Taiwan Bilateral Symposium " on Cutting-Edge Brain-Computer Interface (BCI) Technology on Nov. 27, 2024., at the National Yang Ming Chiao Tung University, Campus. The Chapter Chair, Prof. Li-Wei Ko, also served as the Moderator and organizer of this event. More than 100 attendees attended the symposium. This symposium's theme focused on " Cutting-Edge Brain-Computer Interface (BCI) Technology," facilitating discussions and exchanges between USA and Taiwan in the development of BCI technology in the world.

The workshop featured two keynote speeches, summarized as follows:

1. Prof. Tzyy-Ping Jung, IEEE Fellow, from Swartz Center for Computational Neuroscience, Institute for Neural Computation, UC San Diego, USA, delivered a lecture titled " Beyond the Lab: Practical Uses of Brain-Computer Interface Technology."

2. Distinguished Professor Po-Lei Lee from Department of Electrical Engineering, National Central University, Taiwan, delivered a lecture titled " Incorporating a Stroke Rehabilitation System with a Brain-Computer Interface."

iv. Technically Sponsored 2024 AI Workshop in Quantum Computing and Applications

Workshop topic: AI Workshop in Quantum Computing and Applications

Date: Dec. 06, 2024.

Venue: National Yang Ming Chiao Tung University EE623, Hsinchu, Taiwan

Attendance: 45

The IEEE SMC, Taipei Chapter organized the 2024 AI Workshop in Quantum Computing and Applications on Dec. 06, 2024., at the National Yang Ming Chiao Tung University, Guangfu Campus. The Chapter Chair, Prof. Li-Wei Ko, also served as the moderator and organizer of this event. Four speakers, Prof. Giovanni Acampora from Italy, Prof. Naoyuki Kubota from Japan, Assistant Prof. Autilia Vitelli from Italy, and Prof. Chang-Shing Lee from Taiwan, were invited to this workshop. This event provided a unique platform to explore cutting-edge advancements at the intersection of quantum computing and artificial intelligence, guided by world-class experts from Italy, Japan, and Taiwan. More than 40 attendees attended the event.

The workshop featured four keynote speeches, summarized as follows:

1. Topic 1: Quantum Genetic Optimization

   Speaker: Giovanni Acampora

Professor, University of Naples Federico II, Italy

2. Topic 2: Multiscopic Topological Intelligence / Multilayer Clustering and Multiscopic Analysis in Topological Intelligence
   Speaker: Naoyuki Kubota
   Professor, Tokyo Metropolitan University, Japan
3. Topic 3: Computational Intelligence in Forensic Investigations
   Speaker: Autilia Vitelli
   Assistant Professor, University of Naples Federico II, Italy
4. Topic 4: Integrating Quantum CI and Generative AI for Taiwanese/English Co-Learning
   Speaker: Chang-Shing Lee
   Professor, National University of Tainan, Taiwan

By engaging with topics such as quantum genetic optimization, topological intelligence, and innovative quantum-driven approaches to bilingual learning, participants gained diverse insights into both theoretical frameworks and practical applications. These discussions not only expanded attendees' technical horizons but also encouraged interdisciplinary thinking, which is essential for addressing real-world challenges.

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

i. 2024 National Symposium on System Science and Engineering (NSSSE2024)
Date: 2024.06. 26~2024.06.28, Physical Conference
Location: National Yangmin Chiao-Tung University, Hsinchu, Taiwan
Attendance : 52
Activity :2024 National Symposium on System Science and Engineering (NSSSE2021) was indeed a national conference conducted physically held on 26th-28th June, 2024. 45 accepted papers were presented in NSSSE 2024, and a lot of intensive discussion occurred among the attendees and presenters. In addition, the three plenary talks were given in the national conference as well as in the accompanying international conference named by ICSSE 2024. The first plenary talk was delivered by Prof. Kensuke Harada, , who gave his lecture on " Robotic Manipulation Aiming for Industrial Applications ". The second plenary speech was made by Prof. Prof. Nikhil R. Pal , who gave his lecture on " Artificial Intelligence with/without Biological Intelligence: some tidbits (Interplay between AI and BI) ". The third plenary talk was given by Prof. Prof. Chun-Liang Lin , who gave his lecture on " Recent Trends and Key Technologies of Unmanned Aerial Vehicles". All the attendees were impressed by these interesting and inspiring talks.
Prof. Ching-Chih Tsai served as an ICSSE 2024 National Advisory Committee.

ii. The International Conference on System Science and Engineering 2024 (ICSSE 2024)
Date: 2024.06. 26~2024.06.28, Physical Conference

Location: National Yangmin Chiao-Tung University, Hsinchu, Taiwan

Attendance : 320

Activity: The International Conference on System Science and Engineering 2024 (ICSSE 2024) was an international conference that was conducted physically on 26th-28th June, 2024. 184 papers were physically presented and some papers were online shown. This conference was aimed to provide a great opportunity for scientists, engineers, and practitioners from all over the world to present the latest system design concepts, research results, developments and applications, as well as to facilitate interactions between scholars and practitioners. In ICSSE 2024, three lectures were given in the conference. The first plenary talk was delivered by Prof. Kensuke Harada, , who gave his lecture on " Robotic Manipulation Aiming for Industrial Applications ". The second plenary speech was made by Prof. Prof. Nikhil R. Pal , who gave his lecture on " Artificial Intelligence with/without Biological Intelligence: some tidbits (Interplay between AI and BI) ". The third plenary talk was given by Prof. Prof. Chun-Liang Lin , who gave his lecture on " Recent Trends and Key Technologies of Unmanned Aerial Vehicles".

Prof. Ching-Chih Tsai served as an ICSSE 2024 International Advisory Committee.

iii. 2024 International Conference on Fuzzy Theory and Its Applications (iFUZZY 2024)

Date: 2024.08.10~2024.08.13, Kagawa, Japan

Location: Sunport Hall, Kagawa, Japan

Attendance : 150

Activity : 2024 International Conference on Fuzzy Theory and Its Applications (iFUZZY 2021) was hosted by Taiwan Fuzzy Systems Association (TFSA) held in Kagawa, Japan, over 10-13 August, 2024. iFUZZY 2024 includes many novel research results on fuzzy theory and its applications and related topics. In iFUZZY 2024, two excellent lectures were given. The first talk was given by Prof. Prof. Bernard De Baets who gave his lecture on " Treasuring the legacy of Lofti Zadeh ". The second talk invited Prof. Kazuo Tanaka to give his lecture on “Bridging Theory and Application in Fuzzy Control: Essential Insights”.

Prof. Ching-Chih Tsai served as an iFuzzy 2024 International Advisory Committee.

iv. The 2024 International Automatic Control Conference (CACS 2024)

Date: 2024.10.31~2024.11.03

Location: Aspire Resort, Taoyuan, Taiwan

Attendance : 165 The 2024 International Automatic Control Conference (CACS 2024) was hosted by the Chinese Automatic Control Society and National Taiwan University of Science and Technology, Taiwan. CACS 2024 was held in Aspire Resort, Taoyuan, Taiwan, in order to provide a great opportunity for scientists, engineers, and practitioners to present their state-of-the-art, latest concepts, innovative research results, and novel applications , as well as to facilitate interactions between scholars and practitioners. CACS 2024 was made by presenting

novel research results in all aspects of control, automation, robotics, servomechanisms, and related topics. Accepted full papers can be included in IEEE Xplore and EI indexed database. Best paper awards were given to those with outstanding achievements. Selected high-quality papers were published in the Special Issues of Asian Journal of Control (AJC) and International Journal of Fuzzy Systems (IJFS).

v. SMC Taichung Chapter organized a Christmas dinner party to let all the chapter members enjoy food and friendship on 23 December, 2024.
Total Participants:38

vi. SMC Taichung Chapter organized a lunch party to promote Taichung Chapter, IEEE SMCS, on 08 December, 2024
Total Participants:14

32. <u>Chapter Name: Solid-State Circuits Society Taipei Chapter (SSC37)</u>

In 2024, we have organized **<u>12 events</u>** with a total number of **<u>36 presentations</u>**; total number of attendees is **<u>~1000 persons</u>**.

i. DL Technical Talk

Title: Designing a hardware solution for deep neural network training (1 presentation, Prof. Dongsuk Jeon)
Date: Mar. 15, 2024
Place: NYCU, Hsinchu, Taiwan
Attendance: 52

ii. 2024 ISSCC Highlight / Review Workshop (8 presentations)

Title: 2024 ISSCC Highlight Workshop
Date: Apr. 26, 2024
Place: Online, Hsinchu, Taiwan
Attendance: 443

iii. DL Technical Talk

Title: CMOS Power Amplifiers and Transmitters: The Evolution from 'Digital-Friendly' RF to 'Digital' RF (1 presentation, Prof. Jeff Walling)
Date: May 24, 2024
Place: Hybrid (online / NYCU), Hsinchu, Taiwan
Attendance: 53

iv. DL Technical Talk

Title: Design Challenges in Precision Continuous-Time Delta Sigma Data Conversion

(1 presentation, Prof. Shanthi Pavan)

Date: May 29-30, 2024

Place: NTU, Taipei / NYCU, Hsinchu, Taiwan

Attendance: 67

v. SSCS Taipei Chapter Meeting

Title: IEEE SSCS 2024 Annual Member Meeting

Date: July. 31, 2024

Place: Lihpao Resort Fullon Hotel , Taichung , Taiwan

Attendance: 44

vi. DL Technical Talk

Title: A 140-GHz 40-mW Beamforming Receiver with LO Generation (1 presentation, Prof. Behzad Razavi)

Date: Sep. 25, 2024

Place: NTU, Taipei, Taiwan

Attendance: 130

vii. 2024 A-SSCC Press Conferences (5 presentations)

Date: Oct. 30, 2024

Place: NTU Alumni Center, Taipei, Taiwan

Attendance: 35

viii. 2025 ISSCC Press Conferences (7 presentations)

Date: Nov. 26, 2024

Place: Sheroton Grand Taipei Hotel, Taipei, Taiwan

Attendance: 49

ix. 2024 Analog IC WorkShop (9 presentations)

Date: Dec. 13-14, 2024

Place: Jan Da Golden Tulip Hotel, Taichung City, Taiwan

Attendance: 35

x. DL Technical Talk

Title: Recent Advance in Digital In-Memory-Computing Processors (1 presentation, Prof. Mingoo Seok)

Date: Dec. 16, 2024

Place: NTU, Taipei, Taiwan

Attendance: 46

xi. DL Technical Talk

Title: SRAM-based In-Memory Computing Hardware: Analog vs Digital and Macros to Microprocessors. (1 presentation, Prof. Mingoo Seok)

Date: Dec. 17, 2024

Place: NTHU, Hsinchu, Taiwan

Attendance: 16

xii. Technical Talk

Title: CMOS-enabled biosensing for precision medicine and health. (1 presentation, Jun-Chau Chien, PhD)

Date: Dec. 30, 2024

Place: NYCU, Hsinchu, Taiwan

Attendance: 33

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

IEEE VTS Taipei Chapter has sponsored or co-sponsored 4 events during the year of 2024, each of which is described in more detail as follows:

1. Technical Activities

i. 2024 Summer School on Information/Communication/Vehicular Theories and Technologies

Time: August 19, 2023; 09:30 a.m.- August 20, 2023: 04:30 p.m. (GMT+8)

Place: the ZyXEL Lecture Hall of Engineering IV Building, Kuanfu Campus, NYCU, Taiwan

Country: Taiwan

Talks: 5

Attendance: 80+

Event Description:

The event was jointly sponsored by the IEEE ITsoc, Comsoc, and VTS, Taipei chapter, and was held at ZyXEL Lecture Hall of Engineering IV Building, Kuanfu Campus, National Yang Ming Chiao Tung University, Hsinchu, Taiwan in August 2021. The summer school offers 5 short courses from Aug. 19, 2024 to Aug. 20, 2024. The topics of the short courses include: "Oldies but Goodies: Point-to-Point Information Theory", “Principles of Digital Communications”, “MIMO Wireless Communication System”, “Non-Terrestrial Networks and 3GPP Standards”, “Satellite Optical Communications”. The website of the summer school is at:
https://sites.google.com/view/2024icvtt/home

More than 80 persons registered and attended the summer school. Most of the attendees are graduate students (master students or PhD students) in Taiwan. The graduate

students come from more than 10 universities in Taiwan including National Taiwan University, National Tsing Hua University, National Yang Ming Chiao Tung University, and National Cheng Kung University, to name just a few. The six speakers are well-known professors in the field of communications engineering and information theory in Taiwan. They are affiliated with five different universities including National Yang Ming Chiao Tung University, National Tsing Hua University, and National Sun Yat-sen University. The summer school on information/communication/Vehicular theories and technologies is a great event for students and scholars in related field to get together and learn new knowledge.

ii. IEEE VTS Distinguished Lecture and Panel Discussion- - Data-Driven and Light-Weight ML Based Strategies for Smart IOT

Time: May 21, 2024; 13:30 p.m.- May 21, 2024: 16:30 p.m. (GMT+8)

Speaker: Prof. Swades De, India Institute of Technology, Delhi, India

Place: ED816, Kuanfu Campus, National Yang Ming Chiao Tung University, Hsinchu

Country: Taiwan

Attendance: 40

Event Description:

The event is jointly sponsored by the Institute of Communications Eng. NYCU and IEEE VTS, Taipei Chapter. The tutorial addresses the limitations of traditional communication system analysis, which often assume stationary traffic and standard distribution. It argues more precise, context-specific optimizations in modern IoT communications. By leveraging supervised and unsupervised learning, along with cross-layer interactions, dynamic system characterization and optimization can be achieved. Additionally, the tutorial explores incorporating intelligence at various stages of IoT networks, including fog intelligence, MEC, and smart cloud connectivity. It also examines energy sustainability and green perspectives, discussing energy harvesting-aided smart IoT communications,. Real-life examples such as cognitive radio channel access, smart city monitoring illustrates how data-driven strategies enhance performance optimization.

iii. Technical Talk and Panel Discussion-Wireless Transceivers based on Amortized Optimization

Time: Aug. 08, 2024; 10:00 AM- Aug. 08, 2024: 15:00 p.m. (GMT+8)

Speaker: Prof. Xiaodong Wang, Department of Electrical Engineering, Columbia University, New York, USA

Place 1 for Talk: ED816, Kuanfu Campus, National Yang Ming Chiao Tung University, Hsinchu

Place 2 for Panel Discussion: ED219, Kuanfu Campus, National Yang Ming Chiao Tung University, Hsinchu

Country: Taiwan

Attendance: 40

Event Description:

The event is jointly sponsored by the Institute of Communications Eng. NYCU and IEEE VTS, Taipei Chapter. In the talk, Prof. Wang introduced a notion of curriculum learning technique for complex neural work to learn the solutions of a target family of continuous or combinatorial optimization problems. The idea is to break down a complex problem into smaller ones and take a principled approach to improve the efficiency of learning by handling simple tasks before learning more complex ones. The proposed approach is applied to several transceiver design problems for next-generation wireless systems.

iv. IEEE VTS Distinguished Lecturer Talk- - The Achilles' Heel of License Plate Recognition Parking Enforcement: Balancing Privacy Protection and Enforcement

Time: Aug. 08, 2024; 10:00 a.m.- Aug. 08, 2024: 11:30 a.m. (GMT+8)

Speaker: Prof. Xiaodong Lin, University of Guelph, Canada

Place: the ZyXEL Lecture Hall of Engineering IV Building, Kuanfu Campus, NYCU, Taiwan

Country: Taiwan

Attendance: 80

Event Description:

The event is jointly sponsored by the Institute of Communications Eng. NYCU and IEEE VTS, Taipei Chapter. In this talk, the speaker introduced a novel privacy-preserving and access control-enhanced parking enforcement system to address the privacy leakage issue during parking enforcement while achieving flexible access authorization of the data when there is a dispute. Specifically, by utilizing the keyed-hash message authentication code, enforcement vehicles can generate a tag based on the location and the license plate number of a vehicle, which can be used to identify whether there is a parking violation. Moreover, by integrating our proposed time-based conditional proxy re-encryption scheme and blockchain technology, evidence of parking violation (e.g., captured pictures) that can be decrypted only by the drivers can be decoded by an authorized judge when there is a dispute and a review is requested. Security analysis demonstrates that our scheme can achieve data security, fairness, and access control. Also, extensive experiments show effectiveness of the proposed parking enforcement system.

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

i. AIoT Chip competition

Date: 2024/07/18

Location: Taipei New Horizon 6F

Attendance: 218

Organizer:

Jing-Ming Guo-Distinguished Professor, Department of Electrical Engineering, National Taiwan University of Science & Technology, Director, Advanced Image and Visual Technology Research Center, Chair, IEEE Signal Processing Taipei Chapter

Event Description:

The 8th Innovation Tech Challenge Finals and Awards Ceremony concluded on July 18, 2024, showcasing the synergy between AI and hardware. With 30 finalists selected from over 100 teams—25% more than previous years—the competition encouraged more students to engage in hands-on innovation and practical problem-solving. Organized by the IEEE Signal Processing Taipei Chapter with support from TCES, IET, and 15 industry leaders, including ADI, Macnica Anstek, NXP, WPI, ST, Infineon, Renesas, IAR, and TSMC, the event featured live demonstrations of cutting-edge modules by industry partners, fostering direct interaction with students and faculty. More than a contest, it was a celebration of students' hard work, bridging creativity and market needs while equipping them with real-world innovation skills, industry insights, and future career opportunities.

ii. Distinguished lecturer- KokSheik Wong

Date: 2024/10/30 10:30am-12pm

Location: National Taiwan University of Science and Technology

Attendance: 52

Organizers:

- IEEE Signal Processing Taipei Chapter
- National Taiwan University of Science and Technology

Event Description:

Biography:

KokSheik is an Associate Professor in the School of Information Technology at Monash University Malaysia, where he is also the Deputy Head (Research), overseeing all research related matters in the school. He received the B.S. and M.S. degrees in both Computer Science and Mathematics from Utah State University, USA, in 2002 and 2005, respectively. In 2009, he received the Doctor of Engineering degree from Shinshu University, Japan, under the Monbukagakusho scholarship.

His research interests include multimedia signal processing and cybersecurity. He actively contributes to the research community by serving associates editor at IEEE Signal Processing Letters, and Journal of Information Security and Applications. He is also a member of the Information Forensics and Security (IFS) technical committee of IEEE Signal Processing Society, where he takes up an additional role as IFS representative in the Challenges and Data Collections committee. In addition, he is a member of the Board of Governors: Members-at-large in the Asia Pacific Signal and Information Processing Association (APSIPA) and a member of the APSIPA Multimedia Security and Forensics (MSF) technical committee.

Topic

Advancements in Secure Multimedia Content: Unifying Watermarking, Encryption, and Data Recovery in the Digital Age

Abstract:

Prof. Wong KokSheik's research focuses on securing multimedia content such as audio, images, and video, particularly in compressed formats compliant with ISO standards. His work unifies watermarking and encryption, addressing both data embedding and content protection. This presentation highlights advancements in recovering missing coefficients in compression standards, enhancing data storage, security, and network communication. It also covers innovations in high dynamic range imaging for tamper detection, privacy protection, and display adaptation. Prof. Wong's recent efforts in encrypted signal processing aim to reduce cybercrimes like fraud and identity theft while promoting privacy in the digital age.

35. Chapter Name: Oceanic Engineering Society Taipei Chapter (OE22)

36. Chapter Name: System Council Taipei Chapter (SYSC45)

i. Invited Lecture: Lo YuLin, Technical Director, NCHU-Intelligent Electric Vehicle and Green Energy Center
Title: Analysis and Testing Techniques for Automotive Circuit Diagrams
Date: 2024/01/18
Attendance**:** 46
Event Description:
Invite lecturer Director Lo, to lecture on the fundamentals of automotive circuits, electrical components, basic electronic circuits, principles of automotive circuit drawing, and methods for reading circuit diagrams.

ii. Invited Lecture: Lo YuLin, Technical Director, NCHU-Intelligent Electric Vehicle and Green Energy Center
Title: Hybrid Electric Vehicle (HEV) Operating Principles and Fault Diagnosis
Date: 2024/02/22
Attendance**:** 18
Event Description:
Invite lecturer Director Lo, to lecture on hybrid vehicle fault diagnosis techniques.

iii. Invited Lecture: Chen Yukai, Professor, National Formosa Univercity
Title: Power Converter Modeling and Controller Design
Date: 2024/03/15
Attendance: 25
Event Description:
Invite lecturer Professor Chen, to lecture on power electronics and control-related knowledge.

iv. Invited Speak: Ching-Lung Su, Associate Professor, National Yunlin University of Science and Technology
Title: New Trends in Smart Electric Vehicles
Date: 2024/03/20
Attendance: 33
Event Description:

Invite speaker Professor Su, to speak about industry development, autonomous vehicles, and AI applications in electric vehicles.

v. Invited Speak: Ming-Yen Chen, Assistant Professor, Chung Yuan Christian University
Title: The Design and Verification of Electric Vehicles
Date: 2024/03/27
Attendance: 33
Event Description:
Invite speaker Professor Chen, to speak about the vehicle mechatronics industry, fundamental vehicle knowledge, and discuss electric vehicle design and Verification.

vi. Invited Speak: Shin-Hung Chang, Assistant Professor, Ming Chi University of Technology
Title: Development of Powertrain System for Electric Vehicles
Date: 2024/03/29
Attendance: 18
Event Description:
Invite speaker Professor Chang, to speak about the development of the driving mechanism of electric vehicle.

vii. Invited Speak: Chih-Chiang Chen, Assistant Professor, National Cheng Kung University
Title: PID Control: A Nonlinear Domination
Date: 2024/04/26
Attendance: 18
Event Description:
Invite speaker Professor Chen, to speak about the fundamental control theory and the modeling of PID controller design in the context of nonlinear systems.

viii. Invited Speak: Chen Jianci, Manager, The Automotive Research & Testing Center
Title: International Automotive Industry Trends and Vehicle Technology Development
Date: 2024/05/01
Attendance: 30
Event Description:
Invite speaker Mr. Chen, to speak about the current development and trends of the electric vehicle industry in Taiwan, gave an introduce to the Vehicle Research and Testing Center, and elaborate on the skills and qualifications that future talents in the domestic electric vehicle industry will need.

ix. Invited Speak: Syuan-Yi Chen, Distinguished Professor and Associate Chairman, National Taiwan Normal University
Title: Deep Learning Applied to the Control of X-Y axes Motion Platform Positioning
Date: 2024/05/17
Attendance: 18
Event Description:
Invite speaker Professor Chen, to speak about smart multi-axis motion control and how to train firmware using AI.

x. Invited Speak: Yen-Chen Liu, Professor, National Cheng Kung University
Title: Adaptive Backstepping and Learning Approach for Tracking Control of Aerial Robotics
Date: 2024/05/31
Attendance: 17
Event Description:
Invite speaker Professor Chen, to speak about How drones achieve tracking control, multi-dimensional mathematical modeling, and sensitivity analysis, supported by experimental results.

xi. Invited Speak: Chun-Yu Hsiao, Associate Professor, Tatung University

Title: Diverse Applications of Electric Motors and Future Outlook
Date: 2024/06/14
Attendance: 17
Event Description:

Invite speaker Professor Hsiao, to share about her experiences from being a postdoctoral researcher to becoming a professor in academia. She also talked about energy-saving practices and industry applications.

xii. Invited Speak: Chris Mi (IEEE Fellow), Distinguished Professor, San Diego State University
Title: Overcoming the Barrier of Deploying Second-Life EV Batteries for Storage Applications & Wireless Power Transfer
Date: 2024/11/19
Attendance: 40
Event Description:

Invite speaker Professor Mi, to speak about solid-state battery and wireless power transfer development.

xiii. Invited Speak: Chien-An Chen, Assistant Professor, National Kaohsiung University of Science and Technology
Title: Design Aspects and Challenges of Smart Vehicles
Date: 2024/12/27
Attendance: 22
Event Description:

Invite speaker Professor Mi, to speak about the integration of artificial intelligence, the Internet of Things, and advanced communication technologies in smart vehicles.

xiv. Conference:
Title: IEEE RASSE&TEGA Conference
Date: 2024/11/06 - 11/07
Attendance: 200+
Event Description:

The 2024 International Conference on Recent Advances in Systems Science and Engineering (IEEE RASSE 2024) and 2024 Taiwan E-Intelligent Vehicle & Green Energy Technology Conference (TEGA 2024) Joint Conference invited numerous international scholars and domestic industry experts to give lectures, oral presentations and to promotenetworking between universities and industries.

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**

Category	Meeting	Date
Technical (Advertisement)	CMOS-enabled biosensing for precision medicine and health (SSC37)	2024.12.30
	Robot engineering education & Promotion experiences (E25)	2024.12.20
	SRAM-based In-Memory Computing Hardware:	2024.12.17

	Analog vs Digital and Macros to Microprocessors (SSC37)	
	AI Workshop in Quantum Computing and Applications (SMC28)	2024.12.06
	The 8th Symposium on Smart Life for Next Generation (EMC27)	2024.12.06
	Verification of Electronic Engineering Students' Industrial Programming Skills (BT02)	2024.12.06
	SSCS Taipei Chapter 2025 ISSCC Taipei Press Conference (SSC37)	2024.11.26
	The Optics & Photonics Taiwan, International Conference-Annual Meeting of Taiwan Photonics Society, 2021(PHO36)	2024.11.26-29
	Testing standards and inspection plans for 6G chip systems (EMC27)	2024.10.23
	The twelfth annual IEEE Conference on Communications and Network Security (IEEE CNS) 2024 (Taipei/Tainan Sections Chapter RL07)	2024.09.30-10.04
	Technical Discussion on Electrochemical DNA Biosensors (ED15)	2024.09.12
	ARIS2024(CS23)	2024.08.22-25
	21TH TAIWAN MICROMOUSE AND INTELLIGENT ROBOT CONTEST (E25)	2024.08.17-19
	IEEE International Conference on Consumer Electronics – Taiwan (ICCE-TW) (CT08)	2024.07.09-11
	7th International Workshop on Ultraviolet Materials and Devices (IWUMD 2024), (PHO36)	2024.06.02-06
	Design Challenges in Precision Continuous-Time Delta Sigma Data Conversion (SSC37)	2024.05.29-30
	Designing a hardware solution for deep neural network training (SSC37)	2024.03.15
	Workshop on Synthesis and System Integration of Mixed Information Technologies (SASIMI 2024) (CEDA44)	2024.03.11-12
	YP Program, 2024 IEEE International Conference on Consumer Electronics (YP)	2024.01.08
Professional Development	IEEE Photonic Society Annual meeting & OPTIC 2024, (PHO36)	2024.11.28

	Photonics Students summer camp for Undergraduate students, (PHO36)	2024.08.12-14
Social	Creation and Inheritance of WIO prosperous Life, (PHO36)	2024.11.26

B.4 Students Activities

- Total number of Student branches in the Section: 21

1. **Student Branch Name: IEEE Chung Yuan Christian University Student Branch**
   Student Branch Chair: Liang-Ying Su
   Student Branch Counselor: Shih-Hsu Huang

2. **Student Branch Name: IEEE National Central University Student Branch**
   Student Branch Chair: Yu-Hsiang Lee
   Student Branch Counselor: Jen-Inn Chyi

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

4. **Student Branch Name: IEEE National Chiao Tung University CE Society (CES)**
   Student Branch Chair:
   Student Branch Counselor: Wai-Chi Fang

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

6. **Student Branch Name: IEEE National Chung Hsing University Student Branch**
   Student Branch Chair: Ali Rospawan
   Student Branch Counselor: Ching-Chih Tsai

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

8. **Student Branch Name: IEEE National Kaohsiung University of Science and Technology Student Branch**
   Student Branch Chair: Jin-Ting Yu
   Student Branch Counselor: Chun-Lien Su

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

10. **Student Branch Name: IEEE National Taipei University of Technology Student Branch**
    Student Branch Chair: Yu-Yao Bai
    Student Branch Counselor: Hai-Han Lu

11. **Student Branch Name: IEEE National Taiwan University Student Branch**
    Student Branch Chair: Ian Huang
    Student Branch Counselor: Shih-Yuan Chen

12. **Student Branch Name: IEEE EDS National Taiwan University Student Chapter**
    Student Branch Chair: Wei-Yu Lung
    Student Branch Counselor: Chih-Ting Lin

13. **Student Branch Name: IEEE National Taiwan University of Science and Technology Student Branch**
    Student Branch Chair: Cheng-Yi Wang
    Student Branch Counselor: Shyi-Ming Chen

14. **Student Branch Name: IEEE National Taiwan University of Science and Technology SMC Society (SMCS)**
    Student Branch Chair: Cheng-Yi Wang
    Student Branch Counselor: Shyi-Ming Chen

15. **Student Branch Name: IEEE National Taiwan University of Science and Technology IA Society (IAS)**
    Student Branch Counselor: Huang-Jen Chiu

16. **Student Branch Name: IEEE National Tsing Hua University Student Branch**
    Student Branch Chair: Yun-Ting Tseng
    Student Branch Counselor: Yi-Chun Liu

17. **Student Branch Name: IEEE National Tsing Hua University ED Society (EDS)**
    Student Branch Chair: YAN-HUA WU
    Student Branch Counselor: Chih-Fang Huang

18. **Student Branch Name: IEEE National Tsing Hua University IA Society (IAS)**
    Student Branch Chair: Chien-Chih Hung
    Student Branch Counselor: Yu-Chen Su

19. **Student Branch Name: IEEE National Tsing Hua University PEL Society (PELS)**
    Student Branch Chair: Jui-Yang Chiu
    Student Branch Counselor: Yu-Chen Su

20. **Student Branch Name: IEEE Yuan Ze University Student Branch**
    Student Branch Chair:
    Student Branch Counselor: Jeng-Kuang Huang

21. **Student Branch Name: IEEE Yuan Ze University SMC Society (SMCS)**
    Student Branch Chair:
    Student Branch Counselor: Chih-Min Lin

- Section level student activities (student congress, paper and other contests, awards etc)

➢ Rendering Awards for outstanding Student Branch/ Chapter.

- Number of Active Student Branches (Student Branches who have reported required number of meetings during the year): 11

- Summary of Student Branch activities (Student Branch wise with attachment table/information)

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

Date	Event	Topic	Attendees
2024/03/12	Going Abroad Seminar	Beyond Borders: An International Experience Sharing Session.	Presenters: Yu-Qi Chen. Participants: 30 student members.
2024/04/02	Lab Visit	Visit to the Laboratories of Professor Tsen-Chieh Chiu (RF Group) and Professor Bo-Lei Lee (Systems and Biomedical Engineering Group)	Presenters: Professor Tsen-Chieh Chiu, Professor Bo-Lei Lee Participants: 50 student members.
2024/04/23	Company Visit	ASE Chungli Factory Tour: Innovations in IC Packaging & Testing.	Presenters: ASE, Inc. Participants: 40 student members.
2024/08/28 ~ 2024/09/01	IEEE CLAP 2024 & IEEE SYWLC 2024	Attending IEEE CLAP 2024 & IEEE SYWL 2024 in Tokyo (Japan)	Presenter: IEEE.org Participants: 2 student members.
2024/10/08	Career Talk	The Tech Industry and Life After Graduation	Speaker: Chao-Te Hsiao Participants: 68 student members.
2024/10/24	The First PES Speaker Series	Introduce IEEE PES and Lead a Tour of the Central Energy House	Presenters: Zheng-Yi Chen. Participants: 30 student members.
2024/11/12	Lab Visit	Visit to the Laboratories of Professor Jin-Fu Lee (Electronics Group) and Professor Yi-Rui Hsieh (Solid-State Group)	Presenter: Professor Jin-Fu Lee , Professor Yi-Rui Hsieh. Participants: 35 student members.
2024/11/16	Junior EE Alumni Talk (I)	Invitation to Senior Yi-Ting Wu to Share His Experience and Journey Working at the R&D Center of Intel Headquarters in the United States	Presenter: Yi-Ting Wu. Participants: 80 student members.
2024/12/07	Junior EE Alumni Talk (II)	Invitation to Senior Zheng-Liang Hong to Share His Career Journey, providing insights into the tech industry and offer an inside look at the operations and benefits of working at the multinational company, Nvidia	Presenter: Zheng-Liang Hung. Participants: 40 student members.
2024/12/10	Academic Sharing Session & Kahoot Competition	The Academic Sharing Session invites both members and non-members to present their specialized topics or	Presenter: Zun-Sheng Wu. Participants: 40 student members.

		relevant knowledge in the form of lectures. The Kahoot Competition reviews the activities of the entire semester. Finally, a report on the financial income and expenses of the semester.	
2024/12/17	Company Visit	Exploring Advanced PCB Manufacturing: A Visit to Unimicron	Presenter: Unimicron Technology Corporation. Participants: 36 student members.
2024/12/21	Junior EE Alumni Talk (III)	Invitation to Two Electrical Engineering Alumni from National Central University, Senior Yi-Ting Wang and Senior Yi-Ching Chen, to Share Their Career Journeys and Provide Insights into the Internal Operations of the Tech Industry	Speaker: Yi-Ting Wang, Yi-Jing Chen. Participants: 80 student members.

2. Student Branch Name: IEEE National Chung Hsing University Student Branch and Student Branch Name: IEEE National Chung Hsing University SMC Society (SMCS)

Title	Participation in IEEE SMC 2024 International Conference on Systems, Man, and Cybernetics.
Date	6 - 10 October 2024
Location	Borneo Convention Centre Kuching, Sarawak, Malaysia
Activities and Contributions	1) **Paper Presentation:** Our member has successfully presented a research paper entitled "Recurrent Polynomial-Based FBLS for Adaptive Predictive PID Control of Nonlinear Discrete-Time Systems: Comparative Studies on Control Performance and Time Complexity (Ali Rospawan, Ching-Chih Tsai)," during the technical session. 2) **Best Student Paper Award Winner (1st place):** Our member paper was recognized as the "Best Student Paper Award Winner," a prestigious accolade that validated the quality and significance of the research paper. 3) **Technical Sessions Attendance:** Our member has actively participated in various technical sessions, gaining insights into advancements in machine learning, intelligent control systems, and human-machine collaboration. 4) **Networking:** Engaged with researchers and practitioners during coffee breaks, poster sessions, and social events, exchanging ideas and exploring potential collaborative projects.

Title	Participation in IEEE SMC Chapters Get Together @SMC2024
Date	7 October 2024
Location	Borneo Convention Centre Kuching, Sarawak, Malaysia
Activities and Contributions	1) Represent the IEEE SMC Student Chapter of National Chung Hsing University. 2) Network with chapter leaders, researchers, and professionals to exchange insights on enhancing chapter operations and increasing member involvement. 3) Explore opportunities for joint activities, collaborations, and partnerships between chapters. 4) Gain insights into best practices for running successful chapter programs and initiatives.

Title	Participation in 2024 International Conference on System Science and Engineering (ICSSE 2024)
Date	26 - 28 June, 2024
Location	National Yang Ming Chiao Tung University, Hsinchu, Taiwan
Activities and Contributions	1) **Paper Presentations:** Our member has successfully presented three research paper during the technical session; (1) Intelligent Model Predictive Formation Control of Heterogeneous Omnidirectional Mobile Robots Using RFBLS (Ching-Chih Tsai, Hsing-Yi Chen, Chu-Han Zheng). (2) Intelligent Fixed-Time Formation Control Using ORFBLS for Uncertain Tilting Multi-Quadrotors Against Wind Gusts (Kumail Hussain, Ching-Chih Tsai). (3) Improved ORB-SLAM3 Using Static Conditional Probability Model Under Dynamic Environments (Lu-Hao Chen, Ching-Chih Tsai)." 2) **Honorable Mention Award of Best Conference Paper Award Winner:** Our member paper ID #1096 entitled: Intelligent Model Predictive Formation Control of Heterogeneous Omnidirectional Mobile Robots Using RFBLS (Ching-Chih Tsai, Hsing-Yi Chen, Chu-Han Zheng), was recognized as Honorable Mention Award. 3) **1st place of Best Student Paper Award Winner:** Our member paper ID #1095, entitled: Intelligent Fixed-Time Formation Control Using ORFBLS for Uncertain Tilting Multi-Quadrotors Against Wind Gusts (Kumail Hussain, Ching-Chih Tsai), was recognized as the 1st place of Best Student Paper Award. 4) **Technical Sessions Attendance:** Our member has actively participated in various technical sessions, gaining insights into advancements in machine learning, intelligent control systems, and human-machine collaboration. 5) **Networking:** Engaged with researchers and practitioners during coffee breaks, poster sessions, and social events, exchanging ideas and exploring potential collaborative projects.

Title	Participation in 2024 International Automatic Control Conference (CACS 2024)
Date	October 31, 2024 - November 3, 2024.
Location	Aspire Resort, Longtan, Taoyuan, Taiwan
Activities and Contributions	1) **Paper Presentations:** Our member has successfully presented their research paper entitled "Intelligent Formation Control Using ORFBLS for Uncertain Tilting Multi-Quadrotors with LSTM-Based Actuator Failure Detection (Ching-Chih Tsai, Chun-Fu Mao, Kumail Hussain Mir, Chia-Wei Kuo)." during the technical session. 1) **Best Conference Paper Award - 1st Place**: The paper "Intelligent Formation Control Using ORFBLS for Uncertain Tilting Multi-Quadrotors with LSTM-Based Actuator Failure Detection" received 1st place in the Best Conference Paper Award at CACS 2024. 2) **Ph.D. Dissertation Award**: Dr. Chia-Wei Kuo received the prestigious Ph.D. Dissertation Award from the Chinese Automatic Control Society (CACS), the organizing body of this conference, recognizing his outstanding contributions to the field of automatic control. 3) **Technical Sessions Attendance**: Our members actively participated in various technical sessions, gaining insights into advancements in adaptive control, fault detection, multi-agent systems, and deep learning-based control strategies. 4) **Networking**: Engaged with researchers and practitioners during discussions, coffee breaks, and poster sessions, exchanging ideas and exploring potential collaborative projects.

3. <u>Student Branch Name: IEEE National Kaohsiung University of Science and Technology Student Technology Student Branch</u>

Date	2021/11/05 (yyyy/mm/dd)			
Event	面對後疫情 跨時代鴻溝的 AI 行銷策略			
Speaker	李宜勳/領客智能行銷股份有限公司			
Location	National Kaohsiung University of Science and Technology(Jiangong Campus)			
Attendances	IEEE Members	12	Guests	36

Date	2021/11/26 (yyyy/mm/dd)			
Event	Future Trend of Power Electronics Converter Design			
Speaker	王珽弘/芯源系統有限公司			
Location	National Kaohsiung University of Science and Technology(Jiangong Campus)			
Attendances	IEEE Members	6	Guests	22

Date	2021/12/03 (yyyy/mm/dd)
Event	Power Decoupling for PV Micro-Inverters

Speaker	陳耀銘/國立台灣大學			
Location	National Kaohsiung University of Science and Technology(Jiangong Campus)			
Attendances	IEEE Members	12	Guests	28

4. <u>Student Branch Name: IEEE National Taipei University of Technology Student Branch</u>

Date	2024/05/14 (yyyy/mm/dd)			
Event	Fiber-OWC-5G NR Convergence/Technical Discussion Meeting			
Location	Everlight Building, Nation Taipei University of Technology			
Category	Professional	Sub-Category	Professional Development	
Attendances	IEEE Members	15	Guests	35

Date	2024/08/15 (yyyy/mm/dd)			
Event	Satellite Laser Communications/Technical Discussion Meeting			
Location	Everlight Building, Nation Taipei University of Technology			
Category	Professional	Sub-Category	Professional Development	
Attendances	IEEE Members	15	Guests	40

Date	2024/12/13 (yyyy/mm/dd)			
Event	5G AIoT/Technical Discussion Meeting			
Location	Everlight Building, Nation Taipei University of Technology			
Category	Professional	Sub-Category	Professional Development	
Attendances	IEEE Members	15	Guests	45

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

Time/Date	Speaker	Topic
2024/04/16	Bur-Yu Lai	Machine Unlearning
2021/04/30	Yei-Hsin Wu	Cheating AI
2024/05/01	Shi-Shan Liao	AI in Advertising
2024/05/08	Tze-An Yang	AI v.s. Social Engineering
2024/05/22	Rin Kawano	Generative AI

6. Student Branch Name: IEEE National Tsing Hua University IA Society (IAS)

Topic	Research of Solid-State Circuit Breakers for Low-Voltage DC Distribution Systems
Speaker	Dr. Taro Takamori, Tokyo Metropolitan University
Time/Date	13:30-15:00, Mar. 01, 2024
Location	Rm 209, DELTA

Topic	智慧電網發展趨勢 / 綠能生活，我們可以做更多
Speaker	陳鼎元 博士 淨零排放韌性供應鏈聯盟
Time/Date	13:30-14:30, Mar. 29, 2024
Location	Rm 209, DELTA

Topic	Energy Storage Enhanced STATCOM for Secure and Stable Power Grid
Speaker	Dr. Shih-Feng Chou, Hitachi Energy
Time/Date	13:30-14:30, Apr. 19, 2024
Location	Virtual meeting (Microsoft Teams)

Topic	儲能系統之鋰電池模組簡介
Speaker	羅一峰 教授 國立台灣科技大學 電機工程學系
Time/Date	13:30-14:30, May. 03, 2024
Location	Virtual meeting (Microsoft Teams)

Topic	高頻電源模組設計中的關鍵技術與挑戰
Speaker	劉宇晨 教授 台北科技大學 電機工程學系
Time/Date	13:30-15:00, May. 17, 2024
Location	Rm 209, DELTA

Topic	校園光充儲微電網系統建置與電力輔助服務簡介
Speaker	羅慶權 教授 明志科技大學 電機工程學系
Time/Date	13:30-14:30, May. 31, 2024
Location	Virtual meeting (Microsoft Teams)

Topic	Automotive Overall What it need?
Speaker	曾元佑 經理 固緯電子實業 研發部
Time/Date	13:30-15:00, Sep. 13, 2024
Location	Rm 209, DELTA

Topic	Introduction to Wind Power in Taiwan
Speaker	章學賢 教授 明新科技大學
Time/Date	13:30-15:00, Sep. 27, 2024
Location	Rm 209, DELTA

Topic	Graph partitioning with quantum and classical annealers
Speaker	許琇娟 副教授 國立政治大學 應用物理研究所
Time/Date	13:30-15:00, Oct. 11, 2024
Location	Rm 209, DELTA

Topic	學以致用-UPS控制器設計
Speaker	陳信智 副理 台達電子 資料中心第二事業部
Time/Date	13:30-15:00, Oct. 25, 2024
Location	Rm 209, DELTA

Topic	邁向系統工程師之路– 從製作產品到定義產品
Speaker	沈永耀 資深工程師 聯發科技 類比電路設計一處
Time/Date	13:30-15:00, Nov. 08, 2024
Location	Rm 209, DELTA

Topic	Power your AI
Speaker	賴威勳 Manager Google Cloud Hardware
Time/Date	13:30-15:00, Nov. 29, 2024
Location	Rm 209, DELTA

Topic	以機器學習預測太陽能案場狀態
Speaker	李政崇 博士 台電綜合研究所
Time/Date	13:30-15:00, Dec. 13, 2024
Location	Rm 209, DELTA

7. <u>Student Branch Name: IEEE National Tsing Hua University PEL Society (PELS)</u>

Topic	跨界人生-從業界實務到學界
Speaker	李炳輝 博士 龍華科技大學電子系
Time/Date	13:30-15:00, Mar.08, 2024
Location	Virtual meeting (Microsoft Teams)

Topic	Introduction of power electronics laboratory in Nagaoka University of Technology
Speaker	Dr. Hiroki Watanabe, Nagaoka University of Technology
Time/Date	13:30-15:00, Mar. 22, 2024
Location	Rm 209, DELTA

Topic	寬能隙高壓高功率應用技術
Speaker	黃永福 副組長 工研院綠能所 電網與電力電子技術組
Time/Date	13:30-14:30, Apr. 12, 2024
Location	Rm 209, DELTA

Topic	Digital Power Control of Grid-Connected Type Inverter
Speaker	李政聰 經理 致茂電子 量測儀器事業部研展處
Time/Date	13:30-15:00, Apr. 26, 2024
Location	Rm 209, DELTA

Topic	Standards and Solutions for Cyber Security in Smart Grids
Speaker	蘇俊連 教授 國立高雄科技大學 電機工程學系
Time/Date	13:30-14:30, May. 10, 2024
Location	Virtual meeting (Microsoft Teams)

Topic	New Power Interface For Power Hardware In The Loop Simulation
Speaker	連國龍 教授 國立臺灣科技大學 電機工程學系
Time/Date	13:30-15:00, May. 24, 2024
Location	Rm 209, DELTA

Topic	認識強化學習之DQN
Speaker	翁愷貽 教授 國立中山大學 電機工程學系
Time/Date	13:30-14:30, Jun. 07, 2024
Location	Rm 209, DELTA

Topic	淺談日商職涯與機械產業
Speaker	朱書蔚 總經理 大同住重減速機股份有限公司
Time/Date	13:30-15:00, Sep. 20, 2024
Location	Rm 209, DELTA

Topic	第三代半導體於電動車的應用前景
Speaker	何昆哲 助理教授 國立虎尾科技大學 自動化工程系
Time/Date	13:30-15:00, Oct. 04, 2024
Location	Rm 209, DELTA

Topic	電動車簡介與基礎原理概述
Speaker	黃盈庭 助理教授 國立台北科技大學 車輛工程系
Time/Date	13:30-15:00, Oct. 18, 2024
Location	Rm 209, DELTA

Topic	於 MATLAB/Simulink 環境下進行車用 IPMSM 馬達驅控器的開發
Speaker	童元鋮 經理 鈦思科技
Time/Date	13:30-15:00, Nov. 01, 2024
Location	Rm 209, DELTA

Topic	BLDC相關技術/發展
Speaker	黃振祐 立錡科技
Time/Date	13:30-15:00, Nov. 15, 2024
Location	Rm 209, DELTA

Topic	從細胞到光束：我的粒線體科研之路- 雙聯學程經驗分享
Speaker	陳昶麟 博士後研究員 國家同步輻射研究中心
Time/Date	13:30-15:00, Dec. 06, 2024
Location	Rm 209, DELTA

Topic	衛星電源系統的設計與實證
Speaker	陳裕愷 教授 國立虎尾科技大學 飛機工程系
Time/Date	13:30-15:00, Dec. 20, 2024
Location	Rm 209, DELTA

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

Event	Communication of Recent SiC Development and the possibility of future collaboration of Taiwan and Japan.
Attendees	Prof. Chih-Fang Huang, Dr. Yasunori Tanaka, Dr. Digh Hisamoto, Kung-Yen Lee, and students
Time/Date	2024/04/25
Location	Garden. V Restaurant

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

Topic	In-sensor computing as a new paradigm for smart sensors
Speaker	Dr. Boris Hudec
Time/Date	2024 November 27, 3:30pm~4:30pm
Attendances	20 guests (Including all student members)

Abstract:

In present day electronics, all the noisy, unstructured sensor data has to be first digitized before it can be processed further. This may soon become a showstopper given the exponential rise in amount of sensing devices and the data they produce. In bio-inspired systems the sensing and processing are not separated, but form the connections in the sensing hardware neural network, where the external stimuli being sensed directly alters the output of the network. This approach, termed in-sensor compuing, allows simple algorithms to be directly encoded in the neural network to process the signals into reasonable output in real-time. In this

talk, I will discuss our efforts to realize such smart hydrogen sensor, employing new technology of direct atomic-layer processing (DALP). This project is a collaboration between Slovak Academy of Sciences, NYCU Taiwan and ATLANT 3D, startup from Denmark.

Speaker Information

Boris Hudec obtained his PhD. degree in microelectronics from Slovak Academy of Sciences (SAS), in Bratislava, Slovakia, in 2012. From 2014-2019 he was a research associate in NanoST group of prof. Tuo-Hung Hou at the National Chiao Tung University (now NYCU), in Hsinchu, working on electronic devices for resistive memories and neuromorphic computing. Currently he is back at SAS in Bratislava leading a small research group studying applications of atomic layer deposition in memristive and sensory systems.

Summary of Activities:

The speaker provided an overview of the current methods used in the in-sensor and near-sensor computing paradigm, highlighting the integration of advanced memory technologies. Specifically, he discussed how traditional resistive random-access memory (RRAM), based on non-volatile memory, is processed using atomic layer deposition (ALD) technology. This process interacts with gas reactions to build and optimize the system. As a practical example, the speaker used an H_2 sensor to illustrate the concept. The sensor's response is influenced by varying concentrations of H_2, which directly affect the characteristics of the RRAM device, particularly its current levels. Additionally, the thickness of the titanium dioxide (TiO_2) layer in the RRAM device can be precisely adjusted to enhance the gas detection sensitivity, allowing for more accurate and responsive sensor behavior. Through this method, the system can achieve improved performance in detecting and responding to specific gas concentrations, making it a promising approach for a variety of sensing applications.

They have collaborated with other companies, including ATLANT, to develop an atomic layer 3D printer, also known as Direct Atomic Layer Processing (DALP). This innovative technology integrates microfluidics, spatial ALD (Atomic Layer Deposition), and high-precision 3D printing. The system allows for localized deposition, providing the flexibility for selective growth of materials. This work was published in Small Methods, under the article titled "Additive Manufacturing in Atomic Layer Processing Mode." The study successfully demonstrated the RRAM crossbar array on a wafer scale, utilizing DALP to achieve a gradient thickness of TiO_2.

Boris has also collaborated with Professor TH Hou on simulating the array. Currently, their work focuses on designing a compact model that can generate more sensor data under various conditions. The primary objective is to use this data for training an AI neural network, enabling the development of more accurate and responsive sensor systems.

He has also collaborated with a team of researchers to develop a comprehensive control system for the sensor platform. This system is designed to interface with the gas chamber, allowing for precise control and operation of the crossbar array within the chamber. The control system ensures that the array can be effectively driven and monitored during experiments, enabling real-time adjustments and data collection. This work is currently ongoing, with the team continuing to refine the system to improve its performance and expand its capabilities for future sensor applications.

B.5 Affinity Group Activities

- **Young Professionals Group**

- **Women In Engineering (WIE)**

In 2024, WiE successfully hold two on-site activities in Taiwan. The activities were as follow.

1. On 23rd January, We organized the “2024 Winter STEM Camp”, aiming to inspire students' curiosity about natural sciences and engineering through exploration, experimentation, and discussion.Registration for the camp quickly reached capacity, with over 32 students signing up, demonstrating the strong interest female high school students have in this program.

Through hands-on activities, students not only learned about the applications and experimental details of gas sensors, such as controlling variables, but also gained an understanding of semiconductor and sensing technology principles. Furthermore, they practiced data processing and interpretation after completing experiments. During breaks, students had the opportunity to discuss school life and STEM research experiences with the teaching assistants.

In addition to guidance from the teaching assistants, Prof. Ray-Hua Horng (Institute of Electronic, NYCU, IEEE Fellow and also the winner of 2021 R10 WIE Outstanding Volunteer) gave opening remarks, emphasizing key learning points. Prof. Hsiao-Wen Zan (Institute of Photonics , NYCU) also engaged students in interactive discussions enriching the camp’s with both depth and meaningful learning experiences.

2. On 29th Aug. WiE in collaboration with other organizations hosted the theme of forum "Embracing Your Career Journey," focusing on three key themes: the value of social networks, how to enhance work efficiency, and how to improve workplace competitiveness.

We were honored to have three distinguished industry veterans as speakers: Brad Peng, CEO of the TSMC Charity Foundation; Tina Sheen, Director of Intelligent Manufacturing Center at TSMC and Vice Chair of Women@TSMC; and Renay Su, Manager of Advanced Circuits and Packaging Applications at DuPont Electronics & Industrial and Chair of the DuPont Taiwan Women’s Network.

Each speaker shared their career experiences, explored the impact of social networks in the workplace, and provided valuable advice for students who are just starting out. They help students develop the right mindset, embrace challenges, and make critical career decisions. Additionally, a student currently studying at National Yang Ming Chiao Tung University, Julie Chiang, shared her views on academic growth and career development.

The event featured guest speakers who shared insights and engaged in discussions with the audience, attracted around 100 participants, fostering meaningful exchanges through Q&A sessions. These discussions helped students gain clarity on their career paths and personal growth goals. We hope this event inspires more young women to pursue careers in STEM and contributes to greater support and opportunities for women in the field.

- **Life Member Affinity Group (LMAG)**

- **Life Member Affinity Group (LMAG)**

◆ **Official Chair Handover Meeting of LMAG, IEEE Taipei Section, Dec. 20, 2024**

The formal online officer handover meeting of LMAG, IEEE Taipei Section, was held on Dec. 20, 2024. It was joined by Prof. Clive Tzuang, the former LMAG chair, and Prof. Sau-Gee Chen, the succeeding chair of LMAG, witnessed by Prof. Pei-Wen Li, Chair of IEEE, and Prof. Bo-Cheng Lai, Secretary of IEEE Taipei Section. During Clive service term, he has done a great job in promoting the welfare of LMAG, Taipei Section, organized many activities and set a good role model for the succeeding officers. In the meeting, Clive shared his invaluable experience and knowhow as a LMAG volunteer. In addition, Clive transferred several key documents to Sau-Gee, regarding the LMAG operations. Clive also suggested future possible activities to organize. Great thanks also goes to him that he promises to continuously serve as the treasure of LMAG, Taipei Section.

◆ **Prof. Sau-Gee Chen, Chair, LMAG, IEEE Taipei Section, received recognition from The IEEE History Committee, Dec. 05, 2024**

On behalf of the IEEE History Committee and the IEEE History Center staff, please accept the attached electronic certificate of appreciation for your work on behalf of IEEE's Milestones Program and for your efforts preserving and promoting history. You are cordially invited to print and display it in whatever ways you wish.

Best regards,

Robert
--
Robert Colburn, Research Coordinator
IEEE History Center
445 Hoes Lane
Piscataway, NJ 08854
Office: +1 732 562 5468
r.colburn@ieee.org
IEEE -- Advancing Technology for Humanity
https://www.ieee.org/about/history-center/index.html
https://www.ieee.org/about/history-center/events.html
Engineering & Technology History www.ethw.org

◆ **Certificate of Appreciation awarded to Prof. Clive Tzuang, Oct. 12, 2024**

During his chairmanship of LMAG, IEEEE Taipei Section, Prof. Clive Tzuang has done a great job. In recognition of his active service to LMAG of Taipei Section in 2023, the

R10 headquarter awarded Prof. Tzuang a certificate of appreciation in IEEE R10 SYWL Conference 2024 (from 8/29 to 9/1). Since Clive was unable to attend the conference and receive the certificate in person, Mr. Yu-Hsiang Lee received the certificate on Clive's behalf in SYWL. Mr. Lee is the chair of Student Chapter, National Central University , IEEE Taipei Section. After that, Mr. Lee transferred the certificate to Prof. Sau-Gee Chen, the current chair of LMAG, Taipei Section. On Oct. 12, Prof. Chen presented the certificate to Clive with appreciation again on Clive's contribution.

B.6 Awards & Recognition Activities

- Award constituted by the section 2024
  - **Outstanding Chapter Award**

    Solid-State Circuits Society Taipei Chapter (SSC37)-2023

    Circuits and Systems Society Taipei Chapter (CAS04)-2024
  - **2024 Lifetime Achievement Award**

    Prof. Chorng-Kuang Wang, Prof. Li-Chen Fu, Prof. Jing-Yang Jou.
  - **Outstanding Student Branch/Chapter Award**

    ED Society (EDS) Student Branch Chapter at NCTU
  - **2024 Best PhD Dissertation Award and 2024Best Master Thesis Award**

    17PhD, and 18 Master.
- Please list all Awards and Recognitions received by the Section, and members in the Section, from R 10 and IEEE HQ during the year 2024
  - 2024 Section/ Council Incentive Activity

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

- Home Page of the section (give the URL and frequency which it is updated)

1. IEEE Taipei Section: https://ieee-tpe.iee.nycu.edu.tw/
2. IEEE CYCU Student Branch:
3. IEEE NCHU Student Branch: http://www.ieee.org.tw/chapters/index.php?web_class=45
4. SMC Society (SMCS) Student Branch Chapter at NCHU: http://www.ieee.org.tw/chapters/index.php?web_class=53
5. IEEE NCTU Student Branch: http://www.ieee.org.tw/chapters/index.php?web_class=36
6. IEEE CTSoc Society (CTSoc) Student Branch Chapter at NCTU: http://www.ieee.org.tw/chapters/index.php?web_class=46
7. ED Society (EDS) Student Branch Chapter at NCTU:
8. IEEE NCU Student Branch: https://www.facebook.com/ieeencustudent/
9. National Kaohsiung Marine University Industry Applications Society:
10. IEEE NSYSU Student Branch: http://vlsi.ee.nsysu.edu.tw/html/Student_Branch.htm
11. IEEE NTHU Student Branch: http://www.ieee.org.tw/chapters/index.php?web_class=44
12. ED Society (EDS) Student Branch Chapter at NTHU:
13. IA Society (IAS) Student Branch Chapter at NTHU:
14. PEL Society (PELS) Student Branch Chapter at NTHU: http://www.ieee.org.tw/chapters/index.php?web_class=51
15. IEEE NTU Student Branch: https://www.facebook.com/ieeentu.taipei/
16. IEEE NTUST Student Branch: http://studentbranch.csie.ntust.edu.tw/

17. SMC Society (SMCS) Student Branch Chapter at NTUST: http://studentbranch.csie.ntust.edu.tw/smc/
18. IEEE YZU Student Branch: http://ieeeyzusb.pixnet.net/blog
19. SMC Society (SMCS) Student Branch Chapter at YZU: http://www.ieee.org.tw/chapters/index.php?web_class=50
20. Antennas and Propagation Society (AP03): https://apstaipeichapter.wixsite.com/aps-taipei-chapter
21. Broadcast Technology Society (BT02): http://www.ieee.org.tw/chapters/index.php?web_class=5
22. Computer Society (C16): https://ieee-tpe.iee.nycu.edu.tw/groups/computer-societyc-16/
23. Circuits and Systems Society (CAS04): http://www.ieee.org.tw/chapters/index.php?web_class=7
24. Consumer Electronics Society (CE08): http://www.ieee.org.tw/chapters/index.php?web_class=8
25. Council on Electronic Design Automation Chapter (CEDA-44): https://ieee-tpe.iee.nycu.edu.tw/groups/council-on-electronic-design-automation-chapterceda-44/
26. Computational Intelligence Society (CIS11): https://ieee-tpe.iee.nycu.edu.tw/groups/computational-intelligence-society-formerly-neural-networkcis-11/
27. Communications Society (COMM19): https://taipei.chapters.comsoc.org
28. Components Packaging, and Manufacturing Technology Society (CPMT21): http://www.ieee.org.tw/chapters/index.php?web_class=12
29. IEEE Council on RFID Taipei Chapter (CRFID741): http://www.ieee.org.tw/chapters/crfid741
30. Control Systems Society (CS23): http://www.ieee.org.tw/chapters/index.php?web_class=13
31. Education Society (E25): http://www.ieee.org.tw/chapters/index.php?web_class=14
32. Electron Devices Society (ED15): http://www.ieee.org.tw/chapters/index.php?web_class=15
33. Engineering in Medicine and Biology Society (EMB18): http://www.ieee.org.tw/chapters/index.php?web_class=16
34. Electromagnetic Compatibility Society (EMC27): http://www.ieee.org.tw/chapters/index.php?web_class=17
35. Geoscience and Remote Sensing Society (GRS29): http://www.ieee.org.tw/chapters/index.php?web_class=18
36. Industry Applications Society (IA34): https://ieee-tpe.iee.nycu.edu.tw/groups/industry-applications-societyia-34/
37. Industrial Electronics Society (IE13): http://www.ieee.org.tw/chapters/index.php?web_class=19
38. Instrumentation and Measurement Society (IM09): https://ieee-tpe.iee.nycu.edu.tw/groups/instrumentation-measurement-society-im-09/
39. Magnetics Society (MAG33): https://ieee-tpe.iee.nycu.edu.tw/groups/magnetics-societymag-33/
40. Microwave Theory and Techniques Society (MTT17): http://www.ieee.org.tw/chapters/index.php?web_class=24
41. Oceanic Engineering Society (OE22): http://www.ieee.org.tw/chapters/index.php?web_class=25
42. Power and Energy Society (PE31): http://www.ieee.org.tw/chapters/index.php?web_class=26
43. Power Electronics Society (PEL35): http://www.ieee.org.tw/chapters/index.php?web_class=20
44. Photonics Society (PHO36): http://www.ieee.org.tw/chapters/index.php?web_class=22
45. Product Safety Engineering Society (PSE43): http://www.ieee.org.tw/chapters/index.php?web_class=27

46. Reliability Society (R07): https://ieee-tpe.iee.nycu.edu.tw/groups/reliability-societyr-07/
47. Robotics and Automation Society (RA24): http://www.ieee.org.tw/chapters/index.php?web_class=29
48. Sensors Council (SEN39): https://ieee-tpe.iee.nycu.edu.tw/groups/sensors-councilsen-39/
49. Systems, Man, and Cybernetics (SMC28): http://www.ieee.org.tw/chapters/index.php?web_class=30
50. Systems, Man, and Cybernetics Society-Taichung Chapter (SMC28-TC): http://www.ieee.org.tw/chapters/index.php?web_class=41
51. Signal Processing Society (SP01): http://www.ieee.org.tw/chapters/index.php?web_class=31
52. Solid-State Circuits Society (SSC37): http://www.ieee.org.tw/chapters/index.php?web_class=32 IEEE SSCS TC (https://sscstc.web.nycu.edu.tw/)
53. Vehicular Technology Society (VT06): http://www.ieee.org.tw/chapters/index.php?web_class=33
54. Life Member Affinity Group (LMAG):
55. http://www.ieee.org.tw/index.php?page=04-list&ChapterID=38
56. Women In Engineering (WIE): http://www.ieee.org.tw/chapters/index.php?web_class=34
57. Young Professionals (YP): http://www.ieee.org.tw/chapters/index.php?web_class=299
58. Microwave Theory and Technique Society (MTT17) http://ieee-eliteschool.org/speech.html#LDORPCWWBGPD
59. System Council Taipei Chapter (SYSC45) https://ieeesystemscouncil.org/chapter/taipei-section-chapter#description

- Other means of contacts with section members
  In order to further improve connections among its members, Taipei Section has formed its Facebook page at https://www.facebook.com/IEEE.Taipei.Section.fans in 2011.

B.8 Industry Relations

- Activities for/with industrial members

➢ **Affinity: Women in Engineering(WiE)**

The seminar "Embracing Your Career Journey "held on August 19th, 2024, at Lihpao Resort Furong Hotel. We invited three esteemed industry leaders who shared their career experiences and offered valuable advice to students stepping into the career journey. The speakers from industry including Brad Peng, CEO of the TSMC Charity Foundation; Tina Shen, Director of the TSMC Intelligent Manufacturing Center and also the Vice Chair of Women@TSMC; and Renay Su, Manager of Advanced Circuits and Packaging Applications at DuPont Electronics & Industrial and also the Chair of the DuPont Taiwan Women's Network.

Through their personal experiences, the speakers encouraged students to bravely face challenges, gain a clear direction for their careers, and understand how to continuously improve themselves. The event concluded on a high note with an enthusiastic atmosphere, receiving overwhelmingly positive feedback from the students, highlighting its success and inspirational impact.

➢ **Affinity: Life Member Affinity Group (LMAG):**

◆ **Active Antenna Array Made Easy, Nov. 11, 2024**

A lecture on return-to-basic approach to the development of active integrated array was given to the engineers at BWant co., an antenna ATE house. The talk was delivered by professor Clive Tzuang, Life Fellow and Chair of LMAG, IEEE Taipei Section. The lecture was also joined by Life Fellow, professor Dau-Cher Chang, and Prof. Jian-Yu Lee. The speech emphasized the role of passive elements on how they could robustly achieve the targeted design specifications for electronic steering of electromagnetic beams. The physics inside the passive hybrids thus leads to high-precision control of phase and magnitude for electromagnetic beam steering.

◆ **RF Key Components in Antenna ATEs, Oct. 09, 2024**

The Taipei-based BWant Co. invited an IEEE life fellow, professor Clive Tzuang, Chair of LMAG, IEEE Taipei Section to share his experience in satellite RF technology with a group of young engineers and graduate students working in the field of satellite antenna automatic test equipment. The meeting began with general discussions of applying vector calculus to refine a practical stabilizer design, followed by exploring the physical insights of some RF key components frequently encountered in the antenna ATE development. Some details necessary for carrying out writing CAD programs were reported to encourage the young engineers and students to write their own codes to enhance their skills and knowledge that may help BWant Co. to the next higher level to participate and contribute in the international satellite community

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

  Each year, the IEEE AP-S Taipei Chapter (AP03) will involve in inviting the industry to join the local conference "Electromagnetics Workshop--A Bridge to the Future", and making sure that the industrial members and APS members are actively communicating with and getting to know each other in a yearly basis. The Electromagnetics Workshop-A Bridge to the future is the largest exchange platform for electromagnetic technology elites in Taiwan. The meeting mainly invites major domestic research teams, scholars and industry experts to give special reports and present research results. The content includes advanced technology course lectures with the current status of industrial development, as well as future research and development in the field of microwave and millimeter waves and the skill needs of the industry. It is expected to use engineering technology as the cornerstone to establish a horizontal and vertical development bridge between industry, government, academia. The attendees are 200 persons.

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

This year, we invited the speaker Hao-Xing Ren from Industrial who is the Director of Design Automation Research at NVIDIA. He gave an online talk about "Towards Revolutionizing Chip Design with AI: The Integration of AI and Algorithm" on Monday, Nov 4, 2024. There are a total of 331 participants.

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

  In 2024, Chapter COM19 had one activity involving industrial members:

  2024-Winter IEEE Workshop on Information Theory and Communications from January 15 to 16, 2024

This symposium was partially sponsored by industry partners including but are not limited to: Industrial Technology Research Institute, MediaTech, National Chung-Shan Institute of Science and Technology, Keysight Technologies, and Rohde & Schwarz.

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

  Preferences and explanations in assistive robotics

  - Topic: Preferences and explanations in assistive robotics
  - Time: 10/09/2024

    Place: Physical, Hsinchu,Taiwan

    Speaker: Guillem Alenyà, Institut de Robotica i Informatica Industrial (CSIC-UPC)

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

  This year, the IEEE Education Society Taipei Chapter (E25) worked closely with the Ministry of Education, Taiwan, and the Sha Yang Ye Inc. to hold autonomous mobile robot contests and related workshops for local elementary, high school and university students. It is hoped that the contests will encourage students from elementary and high schools and universities to learn

and explore technical and implementation skills in autonomous mobile robots. Chapter chairman also shared his experiences in robot education and promotion experiences in vocational universities to young colleagues, and showed them a different path to improve technical skills in implementation and to promote to Professor with educational transaction papers.

- **Chapter Name: Industry Applications Society Taipei Chapter (IA34)**

  IEEE Taipei Section IAS, PELS, & IES Chapters jointly hosted seminars in 2024. We've invited a number of distinguished speakers from around the world to give talks on topics related to power electronics and industrial applications.

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

This year, the IEEE Information Theory Society Taipei Chapter (IT12) has one activity related to industrial members. The activity is listed as follows. The 2024 IEEE Taiwan Spring Workshop on Information Theory and Communications, as part of the 2024 Taiwan Telecommunications Annual Symposium, was held at National Central University, Taoyuan, Taiwan, from January 15 to January 16, 2024. It was partially sponsored by the following industry partners but are not limited to: Keysight Technologies, Auden Techno Corp., Anritsu, Haley Technology, and Chunghwa Telecom. Furthermore, it had 2 invited talks from the industry.

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

The Photonics Society Taipei Chapter (PHO36) successfully organized OPTIC 2024, an intraformational conference aimed at strengthening academia-industry collaboration. The event featured a series of insightful talks from leading companies in the photonics and semiconductor industries, including Altek Biotechnology Corp., Centera Photonics Inc., Synopsys Taiwan, Inc., Taiwan Semiconductor Manufacturing Company (TSMC), Medimaging Integrated Technology Inc., and Muxlink Technology Corp. One of the key industry talks was delivered by Synopsys Taiwan, Inc. on Diffraction Waveguide AR Glasses: Grating Simulation, System Design, and Visualization Analysis. In addition to industry representatives, the conference featured distinguished academic speakers, fostering discussions on the integration of research with industrial applications. Another, notable highlight was the talks by Prof. S.J. Ben Yoo from the University of California, Berkeley, who presented on Silicon Photonics Heterogeneous Integration and 3D Silicon Photonic-Electronic Integrated Circuits Toward Future AI and High-Performance Computing Systems and Prof. Patrick Fay from the University of Notre Dame who presented on vertical GaN Devices and Fabrication for High-Performance Power Device Applications . Through different events, our chapter provided a valuable platform for knowledge exchange and collaboration, bridging the gap between academia and industry to drive innovation in photonics and optoelectronics.

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

This year, the IEEE Power and Energy Society Taipei Chapter (E25) work closely with Taiwan Power and Energy Association to related workshops for introducing power markets for various auxiliary services to local engineers and university students.

Holding the IEEE Outstanding Engineer Award to recognize individuals in Taiwan for their outstanding contributions in the field of power and energy, in order to promote the sustainable development of the field in the future.

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

2024

"IEEE PELS–Dr. Kris Dorsey Lecture Series (Talk 1)"

• Speaker: Dr. Kris Dorsey from Northeastern University,USA

• Seminar Title: The challenge of power management in wearable robotics

• Date: March 8, 2024 (Fri)

• Time: 2pm-3pm (Taiwan Time)

Location: National Taiwan University EE2-Room105

Important results of this meeting:

1. Provided networking opportunities between industry and academia
2. Invited non-IEEE member students to attend the event and join IEEE/PELS
3. Sparks new ideas for research and innovation.

Event:

On March 8, 2024, at the National Taiwan University, Taipei, the IEEE Taipei PELS Chapter held a lecture. The talk on "The challenge of power management in wearable robotics" was given by Dr. Kris Dorsey, an associate professor in the Department of Electrical and Computer Engineering and Physical Therapy, Movement. Rehabilitation Sciences and a core faculty member at the Institute for Experiential Robotics at Northeastern University. The applications of wearable sensors are growing, with possibilities in medical treatment, entertainment, and assistive devices. To achieve comfortable devices, we must investigate new approaches to supply power to a wearable system's sensors, actuators, and computation. In this talk, Dr. Kris Dorsey presented some exciting applications and state-of-the-art approaches in wearable robotics and discussed challenges in integrating power conversion and power sources in wearable devices.

"IEEE PELS–Dr. Kris Dorsey Lecture Series (Talk 2)"

• Speaker: Dr. Kris Dorsey from Northeastern University,USA

• Seminar Title: The challenge of power management in wearable robotics

• Date: March 8, 2024 (Fri)

• Time: 2pm-3pm (Taiwan Time)

Location: National Taiwan University EE2-Room105

Important results of this meeting:

1. Provided networking opportunities between industry and academia
2. Invited non-IEEE member students to attend the event and join IEEE/PELS
3. Sparks new ideas for research and innovation.

Event:

On March 14, 2024, at the National Taiwan University, Taipei, the IEEE Taipei PELS Chapter held a lecture. The talk on "How do we power a soft robot?" was given by Dr. Kris Dorsey, an associate professor in the Department of Electrical and Computer Engineering and Physical Therapy, Movement. Rehabilitation Sciences and a core faculty member at the Institute for Experiential Robotics at Northeastern University.

Soft robotics are exciting emerging robots due to their continuum deformation, which promises deformability, mechanical robustness, and safer interaction with people. One major challenge in moving such soft robots from the lab to the world is how we will power these devices. In this talk, Dr. Kris Dorsey presented the current approaches to powering soft mobile robots and discussed integrating new and existing power sources in soft robotics.

As March 14th is Pie Day(π day), the former PELS chapter chairman prepared mini pies to share this day with the participants.

"IEEE PELS–Power Electronics PhD school"

• Date: July 12-13, 2024

Location: National Taiwan University BL-Room201

Important results of this meeting:

1. Provide PhD students with opinions from industry and academia.
2. Invite PhD students to communicate with each other.
3. Discuss experience of the women in engineer from industry and academia.

Event:

The IEEE Taipei PELS Chapter is organizing a two-day workshop for PhD students at National Taiwan University in Taipei on July 12, 2024. The first day's lectures will feature insights from the power electronics industry, with invited speakers including Mr. Lin Chih-Yi, Design-Director at Delta Electronics, and Mr. Wang Teng-Hung, Director at MPS. They will discuss the positioning and value of a PhD in the industry. Additionally, PhD students will introduce themselves, get to know each other, and display their research posters for academic exchange.

The second day's lectures will focus on academic perspectives, featuring Professor Lai Yan-Sheng from National Taipei University of Technology and Professor Chen Ching-Ran from National Taiwan University. They will share insights on the learning attitudes expected of PhD students, research methodologies, perspectives on journal papers, and the passion and ideals required for future professors. On the second day, female engineers working in the tech industry are also invited to share their experiences and coping strategies as women in engineering, both during their school years and in their professional careers.

- **Chapter Name: Communications Society Taipei Chapter (SSC37)**

In 2024, we have organized 12 events with a total number of 36 presentations; total number of attendees is ~ 1,000 persons. Many industry members participant in these events and some gave talks to SSCS Taipei Chapter members.

i. 2024 ISSCC Highlight / Review Workshop (8 presentations)

Title: 2024 ISSCC Highlight Workshop

Date: Apr. 26, 2024

Place: Online, Hsinchu, Taiwan

Attendance: 443

ii. SSCS Taipei Chapter Meeting

Title: IEEE SSCS 2024 Annual Member Meeting

Date: July. 31, 2024

Place: Lihpao Resort Fullon Hotel , Taichung , Taiwan

Attendance: 44

iii. 2024 A-SSCC Press Conferences (5 presentations)

Date: Oct. 30, 2024

Place: NTU Alumni Center, Taipei, Taiwan

Attendance: 35

iv. 2025 ISSCC Press Conferences (7 presentations)

Date: Nov. 26, 2024

Place: Sheroton Grand Taipei Hotel, Taipei, Taiwan

Attendance: 49 (including ISSCC FE officers, Taiwan committee members, authors, VIP, press)

v. Forum:

Title: 2024 Analog IC WorkShop (9 presentations)

Date: Dec. 13-14, 2024

Place: Jan Da Golden Tulip Hotel, Taichung City, Taiwan

Attendance: 35

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

We hosted the Technical Forums for AI Data Center Infrastructure and EU Directive of Cybersecurity requirements and enforcement introduction, including industrial collaboration with Google and cyber security accredited lab Dekra and authority UL and CSA .

➢ **Chapter Name: System Council Taipei Chapter (SYSC45)**

- Professor Ching Ming Lai assisted Megago Tech Co.,Ltd in the development of a new product: Lane Keeping Assistance System (LKAS) for Electric Buses. This product is a domestic, independently developed advanced driver assistance solution. It included technologies such as lane-keeping algorithms, vehicle controllers, camera lenses, and steer-by-wire motors.

- Professor Ching Ming Lai assisted UPE-Power Technology Co., Ltd in collaborating with Kobe University to establish a branch in Japan, UPE-JAPAN. He also helped in the development of a new product, the Bidirectional DC Converter, actively controls the power flow between energy storage and generation systems, for microgrid applications.

- Professor Ching Ming Lai assisted Megago Tech Co.,Ltd, and *Huro Auto* Co.,Ltd, in the development of a Anti-Clamping Control System for electric buses doors. The system uses camera sensors combined with AI technology to make the doors intelligently detect when they clamp passengers. The door will automatically reopen, and an alert will ring to remind the drivers, ensuring the safety of passengers.

B.9 Humanitarian Technology Activities

- Humanitarian Technology related activities supported by the Section including collaboration with other OUs.
- SIGHT Activities
- N/A

B.10 Community Activities

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

➢ **Affinity : Women in Engineering (WiE)**

Affinity : Women in Engineering (WiE)

■ IEEE Taipei chapter, 「**Embracing Your Career Journey**」

■ Time: 19/08/2024

■ Place: Lihpao Resort Furong Hotel – Lily Room

Presentation	Speaker	Speaker's Title
1. The Value of Social Networks 2. How to Enhance Work Efficiency 3. How to Improve Workplace Competitiveness	Brad Peng	CEO of the TSMC Charity Foundation
	Tina Shen	Director of the TSMC Intelligent Manufacturing Center / Vice Chair of Women@TSMC
	Renay Su	Manager of Advanced Circuits and Packaging Applications, DuPont Electronics & Industrial / Chair of the DuPont Taiwan Women's Network
	Julie Chiang	Student, National Yang Ming Chiao Tung University

■ IEEE Taipei chapter, 「**2024 Winter STEM Workshop**」

■ Time: 23/01/2024

■ Place: Room 201 at CPT Building, National Yang Ming Chiao Tung University

➢ **Affinity: Life Member Affinity Group (LMAG):**

◆ **Iridium LEO (Low Eath Orbit) Satellite Network Access Competition Results Presentation, Aug. 15, 2024**

BWant , a leading OTA (over the air) measurement company in Taiwan, organized the event of "Iridium LEO (Low Earth Orbit) Satellite Network Access Competition Results Presentation," and provided various platforms for students, who were as young as the 5th grade elementary school and as old as seniors at university, to compete in fast satellite network connections to Iridium low-earth orbit satellites. Students need to wittily choose, point, the appropriate antenna arrays at hands to make the most reliable, high-data throughputs to a satellite in the sky. Professor Clive Tzuang was invited to provide mentors and comments to the achieved results.

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

IEEE SSCS/CASS Taipei/Tainan Chapters 2024 Annual Meeting

Time	Presentation	Speakers
19:30 - 19:50	Annual Update: SSCS/CASS Taipei/Tainan	Prof. Yu-Te Liao(SSCS Taipei Chair), Dr. Bor-Sung Liang(CASS Taipei Chair),

	Chapter	Prof. Kuang-Wei Cheng(SSCS Tainan Chair), Associate Prof. Cheng-Ta Chiang(CASS Tainan Chair)
19:50 - 20:20	Info Sharing: Taiwan Chip-based Industrial Innovation Program	Prof. Chau-Chin Su(NSTC Taiwan CbI), Prof. Soon-Jyh Chang (NCKUEE)
20:20 - 21:00	Panel Discussion: Experience Sharing for Promoting IEEE academic activities in Taiwan	Prof. Pei-Wen Li(Taipei Section Chair), Pei-Yin Chen(Tainan Section Chair), Director Meng-Fan Chang (TSMC), Prof. Kea-Tiong Tang(IEEE CASS Vice President, RAM), Director Bor-Sung Liang(MediaTek)
21:00	Group Photo	

- **Chapter Name: Photonics Society Taipei Chapter (PHO36)**
  - **IEEE Photonic Society (PHO36) Taipei Chapter Annual Meeting 2024**

- Date: November 28, 2024
- Location: Taipei, Taiwan
- Category: Professional Development
- Host: Taipei Section Chapter, PHO36
- Attendance: IEEE Members Attended: 100; Guests Attended: 950

The IEEE Photonic Society (PHO36) Taipei Chapter Annual Meeting 2024 was successfully held on November 28, 2024, as part of the professional development initiatives of the Taipei Section Chapter, PHO36. The event provided an excellent platform for professional engagement, knowledge sharing, and discussions on key developments within the IEEE Photonic Society and its Taipei Chapter.

  - **Creation and Inheritance of WIO Prosperous Life**

- Date: November 26, 2024
- Location: National Taipei University of Technology, Taipei, Taiwan
- Building: Auditorium
- Room Number: 303
- Category: Social
- Attendance: IEEE Members Attended: 40; Guests Attended: 152
- Host: CH10209 - Taipei Section Chapter, PHO36

This event was successfully organized by the Taipei Section Chapter, PHO36, on November 26, 2024. The program focused on professional development, career growth, financial planning, and wealth inheritance, with insightful talks and discussions led by renowned speakers from academia and industry.

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

SSCS Taipei Chapter Meeting

Title: IEEE SSCS 2024 Annual Member Meeting

Date: July. 31, 2024

Place: Lihpao Resort Fullon Hotel , Taichung , Taiwan

Attendance: 44

PART C - OTHERS

C.1 Special Events

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

C.3 Collaboration with other IEEE Sections

- Support extended to neighboring Sections
- Joint activities with any other Section
- N/A

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

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

C.5 Best Practices of Your Section (which you would like share with other sections for the benefits of members)

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

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

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

PART D - GOALS AND PLANS

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

- **Taipei Section**

  - **Rendering Awards**

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

  - **Membership Development**

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

1. Academic membership development:
   i. Recruit new members in the related fields of researchers and professors through nation-wide conferences or workshop;
   ii. Promote senior members from the qualified IEEE members through the major universities in Taiwan.
2. Industrial membership development:
   Recruit new members in the related fields of engineers in industry through nation-wide conferences or workshop.
3. Student membership development:
   i. Recruit new members in the related fields of Ph.D./master students through the IEEE Student Branches in Taiwan.
   ii. Try to enhance the add-on value of IEEE student membership for membership development.

- **Affinity Name: IEEE Women in Engineering (WiE)**

Moving forward, we will continue to promote interaction between "female engineers in industry and academia," striving to connect female engineers across all fields. To support these activities, we began applying for funding not only from IEEE WiE and Taiwan's government fund from National Science and Technology Council (NSTC). We also received support and assistance from social groups such as the Taiwan association of Women in Science and Technology (Twist) and Chinese Institute of Engineers (CiE). We will continue to promote this model in future events, fostering strong team spirit and collaborative interaction.

On 8th March 2025, we will jointly hold the 2025 Annual Meeting of Taiwan Women in Science and Technology. Also, we will hold a spring workshop (29th May) and an autumn workshop (date to be determined) to invite senior scholars as speakers and female professors and graduate students as audience. Speakers will share their experiences in pursuing success in academia career.

- **Chapter Name: Antennas and Propagation Society Taipei Chapter (AP03)**
  - Continue to recruit members and student members from academia and industries through technical and educational activities (symposiums, seminars, short courses) and via some social networks, such as setting up a club on Facebook or similar. For the year 2024, we have planned one invited talks (distinguished lecturer talk), support 3 local conferences, and technical sponsor 2 international conferences.

- **Chapter Name: Broadcast Technology Society Taipei Chapter (BT02)**
  - Continue to recruit members and student members from academia and industries through technical and educational activities (symposiums, seminars, short courses).
  - Continue to cooperate with China Radio Association (CRA) through joint activities. CRA's two thousand members consist of practical engineers in radio stations and television companies in Taiwan.

- **Chapter Name: Computer Society (C16)**
  - Sponsored several technical meetings
  - IEEE SOCA, VLSI Design/CAD Symposium will be held to encourage the scholar's members.

- **Chapter Name: Circuits and Systems Society Taipei Chapter (CAS04)**
  - Distinguished Lecturer: Plan to invite a researcher to give a technical talk for group members.
  - Cosponsor several technical and educational activities.
    1. 2025 Digital IC Workshop (IEEE CASS Taipei Chapter)
    2. 2025 VLSI/CAS Symposium and Annual CASS Taiwan member meeting.

- **Chapter Name: Council on Electronic Design Automation Chapter (CEDA-44)**
  - Continue to invite CEDA Distinguished lecturer(s) every year.
  - Continue to Sponsor technical and educational activities.
    1. 2025 EDA Summer Camp.
    2. 2025 EDA Workshop.

- **Chapter Name: Communications Society Taipei Chapter (COM19)**
  - Workshops on Information Theory and Communications (a workshop with invited academic and industry speakers) will be held biannually, one in spring and the other in fall.
  - National Symposium on Telecommunications (a local symposium accepting paper submissions) will be held every year to benefit both of academic and industrial members.

- Summer school on Information Theory, Communication Theory and Technologies will be held every August to benefit student members, especially the newly admitted master students.
- Graduate Student Seminar on Information Theory and Communications will be held to benefit Ph.D. student members.
- Information Theory Society and Communications Society Taipei/Tainan Chapter Young Research Best Paper Award will be held every one to two years.

➢ **Chapter Name: Electronic Packing Society Taipei Chapter (EP 21)**

EPS Taipei Chapter will co-organize the following conference:

- International Microsystems, Packaging, Assembly and Circuits Technology Conference (IMPACT) 2025 at Taipei Nangang Exhibition Hall during Oct.22 to 24, 2025.

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

- The CIS Taipei Chapter hosted Prof. Nikhil R. Pal for talks at NYCU, Taipei (June 24, 2024), and NCHU, Taichung (June 25, 2024).
- CIS Taipei Chapter technically co-sponsored:
  2024 International Conference on System Science and Engineering (iFUZZY 2024).
  2024 International Conference on System Science and Engineering (ICSSE 2024).
- CIS Taipei Chapter technically and financially co-sponsored:
  The 32nd Conference on Fuzzy Theory and Its Applications of the Republic of China (FUZZY 2024).
- CIS Taipei Chapter technically co-sponsored competition:
  2024 National AI Creative Project Competition - Quantum AI Experience and Applications.
- CIS will organize iFUZZY 2025 and FUZZY 2025 from November 5 to 8, 2025, in Hsinchu, Taiwan, bringing together global experts to discuss advancements in fuzzy systems, theories, and applications.
- We will actively encourage faculty and students to join CIS.
- We will keep organizing technical talks on AI and industrial topics.

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

To recruit new members for the education society

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

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

The ED Taipei chapter is in the promotion of helping the NCTU ED student branch chapters to recruit more new student members. Also, several members were promoted to senior members in 2024. Several members have been promoted to the senior member through the assistance of the chapter chair and the other ED Taipei fellows/SM.

- In 2025, the chapter members will continue to assist the NCTU EDS student branch in recruiting new student members.
- Need to work more on the promotion of IEEE senior members as well as few to IEEE Fellow.
- Several DL talks will be arranged for 2025 in-person and/or virtual format.

The chapter organized the major event- 2024SNW in Hawaii (in-person) and promote the participation of members/student members for their submission and attendance. Also, a surplus with >28% has been achieved and returned to IEEE EDS (as a core-financial sponsorship). A post-IEDM workshop, has also been organized in 2025.1.23, and similar event for 2026 post-VLSI and/or post-IEDM workshop might be organized as well, for those who will not be able to participate both meetings. These are also events to promote IEEE EDS activities to a majority of non-members, which is helpful in promoting memberships.

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

- To joint Taiwan Space Union (TSU) - TAIWAN International Assembly of Space Science, Technology, and Industry 2024 (TASTI 2024), https://tasti2024.conf.tw/site/page.aspx?pid=901&sid=1584&lang=en from NOV.30 to DEC.04, 2024.
- To hold the IGARSS 2024 Involvement: There were more than 20 papers submitted and presented by IEEE GRSS Taipei Chapter members in IGARSS 2024.
- Membership Development: 2024 IEEE GRSS Taipei Chapter Membership includes 2 Life Fellows, 5 Senior Member, 21 Members, 1 Associate Member, 1 Affiliate and 1 Graduate Student Member. We have action plans to promote our Members to Senior Members and Senior Members to Fellows elevations recently.

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

In 2025, Taipei EMC Chapter will continue to progress in

- holding one EMC technical event per season,
- preparing and holding the 2025 APEMC international symposium in Taipei, May 19-23.

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

To carry out these goals, the chapter has set up the following plans for year 2024.

- To hold at least 5 seminars, talks, or short courses.
- To provide technical sponsorship to at least 2 international activities.
- To strengthen cross-chapter activities by joint visits or activities.
- To promote and attract as many local and international attention as possible to participate in 2024 International Instrumentation and Measurement Technology Conference (I^2MTC)

either physically or virtually.

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

  Forthcoming events in 2025 include:

  - The 2025 Taiwan Telecommunications Annual Symposium will be held at Lunghwa University of Science and Technology, Taoyuan, Taiwan, from January 15 to January 16, 2025.
  - The 2025 IEEE Taiwan Fall Workshop on Information Theory and Communications will be held at Yilan in August, 2025.
  - Summer School on Information/Communication Theory and Technologies will be held for student members in summer.
  - Information Theory Society Taipei Chapter and Communications Society Taipei/Tainan Chapter Young Research Best Paper Award will be held in 2025.

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

  - Continue to invite 2025 IEEE Distinguished Lecturers for on-site presentations.
  - This year (2024) we also supported TAMT and AVS-Taiwan Chapter for several activities such as the Spintronics Symposium at Taiwan Physical Society Annual Meeting. We will continue to work with other local communities for such events.

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

  - We will continue hosting technical talks, summer school, and workshop given by local or international experts.
  - We will also continue to invite IEEE Distinguished Lecturers/Scholars to Taiwan for research interactions and/or possible research collaborations.

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

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

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

  - IEEE SMC Taipei Chapter technically co-sponsored ICSSE 2024 International Conference on System Science and Engineering (ICSSE 2024), National Yang Ming Chiao Tung University, Hsinchu, Taiwan, over June. 26-28, 2024. Prof. Li-Wei Ko,

Taipei Chapter Chair (SMC 28), served as the General Chair of the conference (ICSSE 2024).

- IEEE SMC Taipei Chapter hosted one invited talks delivered by Prof. Nikhil R Pal on Nov. 27, 2024.
- IEEE SMC Taipei Chapter technically sponsored the 2024 U.S.--Taiwan Bilateral Symposium, National Yang Ming Chiao Tung University, Hsinchu, Taiwan, on Nov. 27, 2024. The Chapter Chair, Prof. Li-Wei Ko, also served as the moderator and organizer of this event.
- IEEE SMC Taipei Chapter technically sponsored the 2024 AI Workshop in Quantum Computing and Applications, National Yang Ming Chiao Tung University, Hsinchu, Taiwan, on Dec. 06, 2024. The Chapter Chair, Prof. Li-Wei Ko, also served as the moderator and organizer of this event.
- IEEE SMC Taipei Chapter will keep organizing special sessions in ICBCB 2025.
- IEEE SMC Taipei Chapter will continually sponsored 2025 International Automatic Control Conference (CACS 2025), National Yang Ming Chiao Tung University, Hsinchu, Taiwan, 5-8 Nov, 2025.
- We will continually promote the faculties and students to join the SMCS.
- We will continually organize technical talks on AI and industrial topics.

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

- IEEE SMC Taichung Chapter will organize a special session for 2025 IEEE Int. Conf. on Systems, Man, and Cybernetics (IEEE SMC2025), Vienna , Austria, Oct.5-8, 2025. Prof. Tsai, Taichung Chapter Chair (SMC 28), will serve as a session chair of SMC 2025.
- IEEE SMC Taichung Chapter will technically sponsor the 2025 international conference on Advanced Robotics and Intelligent Systems (ARIS 2025) held at College of Electrical Engineering and Computer Science, National Chung Hsing University, over 17-19 August, 2025. Prof. C. C. Tsai, Taichung Chapter Chair (SMC 28), will serve as the General Chair.
- IEEE SMC Taichung Chapter will technically sponsored the 2025 National conference on Advanced Robotics (Chinese) held at College of Electrical Engineering and Computer Science, National Chung Hsing University, over 17-19 August, 2025. Prof. C. C. Tsai, Taichung Chapter Chair (SMC 28), will serve as the General Chair.
- IEEE SMC Taichung Chapter will technically sponsor the International Conference on System Science and Engineering 2025(ICSSE2025), held in Thailand, 2025. Prof. C. C. Tsai, Taichung Chapter Chair (SMC 28), served as the International Advisory committee.
- IEEE SMC Taichung Chapter will technically sponsored the 2025 National Conference on System Science and Engineering (NSSSE 2025), held at College of Electrical Engineering and Computer Science, National Chung Hsing University, over 16-17 May, 2025. Prof. C. C. Tsai, Taichung Chapter Chair (SMC 28), will serve as a session chair.

- IEEE SMC Taichung Chapter will technically sponsor the CACS 2025 International Automatic Control (CACS 2025), Hsinchu, Taiwan, over 5-8 November, 2025. Prof. C. C. Tsai, Taichung Chapter Chair (SMC 28), served as the international advisory committee.
- IEEE SMC Taichung Chapter technically sponsored the 2025 International Conference on Fuzzy Theory and Its Applications (iFuzzy 2025), Hsinchu, Taiwan, over 5-8 November, 2025. Prof. C. C. Tsai, Taichung Chapter Chair (SMC 28), served as the international advisory committee.

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

- Co-sponsor 2025 VLSI/CAD Symposium and Annual SSCS Taiwan member meeting.
- Sponsor student travel fund for 2025 A-SSCC accepted authors if the situation permitted.
- Create Forums/seminars to promote IC design research toward undergraduate students.
- ISSCC training course to help Taiwan speakers to make good presentations at ISSCC.

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

- Promotion of interactions between members via regular meetings:
- Membership promotion: Increase the member of IEEE PSES
- Recruiting more volunteer meeting organizer to extend the participation numbers
- Design a strategy to demonstrate IEEE technical platform value to encourage the registrations of new members.
- Invite international speakers via online conference to appeal to foreigner potential members.

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

We will continue to do our best in organizing events for our student members, including lectures, laboratory visits, sharing sessions, institution visits, and company visits. Our goal is to introduce more NCU students to IEEE and encourage them to join. This year, we also aim to offer courses that broaden our student members' horizons in their spare time, such as introductions to programming languages and their applications.

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

We will keep working on the study abroad association and also continue collecting alumni's contact information, which we have already collected over 90 outstanding alumni's contact information in our directory now. Besides, we attempt to enlarge the scale of the student branch by recruiting more ECE/CS students to join us. We also plan to get sponsors to help our events to be more popular. This year, we held more virtual events through online platforms and we welcomed not just students in NCTU but also students from NTU, NTHU, NCU or some other prestigious university.

D.2 Goals and Future Plans

- **Affinity Name: IEEE Women in Engineering (WiE)**
  - The generational inheritance of women in the STEM field, dedicated to reducing gender disparities in STEM, promoting a more equitable and inclusive future workplace, while also empowering women workers to have more confidence in their abilities.
  - Raising awareness of organizations that promote women in the STEM field.
  - Inviting female students (including high school students), engineers, researchers to participate in activities, where they can not only learn knowledge in the science field but also develop skills for the STEM career.

- **Chapter Name: Antennas and Propagation Society Taipei Chapter (AP03)**
  - One of our major objectives is to increase the number of AP-S membership by visiting a few universities in Taiwan that have active AP research team/group.
  - We will continue refreshing the AP-S Taipei Chapter website that has been developed by several years ago.
  - The newly elected Chapter chair, Prof. Ding Bin Lin, and his AP-S officers will separately be attending some of the major AP related conferences, which will be held in-person. This includes APS-URSI 2024, EuCAP 2024, ISAP 2025, etc. It is also a good way to meet up with most of the AP-S members from Taipei Chapter and their current or former graduate students.
  - The IEEE MTT-S is initiating a new program called “Distinguished Microwave Instructor”, in which the past AP Taipei Chair Prof. Ma is an organizer. It is said the AP-S is interested in joining the program. If that is the case, we will technical sponsor this event in an annual basis.

- **Chapter Name: Circuits and Systems Society Taipei Chapter (CAS04)**
  - We would like to host a Digital IC Workshop in April. This event aims to strengthen the collaboration and to share experiences for professors and PhD students in the research fields related with digital IC designd.
  - We also plan to organize annual CASS Taiwan member meeting in VLSI/CAD in July.

- **Chapter Name: Communications Society Taipei Chapter (COM19)**
  - 2025-Spring IEEE Workshop on Information Theory and Communications will be held at Lunghwa University of Science and Technology in January 2025.
  - National Symposium on Telecommunications (a local symposium accepting paper submissions) will be held at Lunghwa University of Science and Technology in January 2025.

- 2025-Fall IEEE Workshop on Information Theory and Communications will be held but the date and location are TBD.
- 2025 Summer School on Information/Communications Theory and Technologies will be held at National Yang Ming Chiao Tung University in Hsinchu, Taiwan in August 2025.
- 2025 Information Theory Society and Communications Society Taipei/Tainan Chapter Young Research Best Paper Award will be held in Mid 2025.

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

Our main goal in year 2022 is to promote and recruit more faculty and students to join the CRFID741. Several events will be hosted, such as RFID industrial tour, meetings and lectures based on RFID related topics (such as transponder and tag design). We will also seek further opportunity to host or join local conferences or events that may promote our visibility to the public, as well as the industry in Taiwan.

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

To promote local practice oriented courseware design and teaching:

- The chapter chair will continue to design mobile robots for international contests and educational purposes. The corresponding courseware will also be developed and used in local technical workshops for students ranging from elementary school up to university students. The society will also try to cooperate with the Institute to hold several technical meetings for technical and vocational 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 2025, several major tasks have been planned as below.

- The chapter chair and other members will be actively participated in various IEEE conferences as organizers or TPC members. For example, the chapter chair and several members will continue to support the 30th anniversary in June, Kyoto for the IEEE SNW.
- In the recent 10 years, an international symposium, eMDC, via the help of the chapter has acquired the EDS technical co-sponsorship. Special assistance will be provided in 2025.
- The chapter will regularly invite at least 5 invited speakers or DL speakers in stimulating the academic research, encouraging DL from overseas to give virtual talks. These talks are open to university professors, students and engineers in northern Taiwan.

- Promoting senior members – a target of 5-10 senior members will be targeted for.

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

- The goals of EMC-S 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, the Executive Committee will aggressively participate in accomplishing the activities stated in D.1 to achieve the Chapter goals.

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

- Taipei Chapter of GRS29 hosted 2024 IEEE GRSS Taipei Chapter Best Thesis Award. The goal of 2024 IEEE GRSS Taipei Chapter Best Thesis Award is to increase the number of IEEE GRSS memberships, develop the professional and educational activities, and enhance the engagement and commitment of the local scientific and commercial communities in Taiwan. The target membership includes all the regional IEEE members in Taiwan.

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

I&M Society Taipei Chapter has continuously followed the steps and reached the goals that we set up. In 2024, we reinforced the bridging between the academia and the industries, assisting to create more collaborative opportunities between the two. Marching to our 15th year of establishment, we are not satisfied with what we have made, but need to be much stronger and have made the following goals and plans,

- To continue adding value to existing members and explore the growth of new members.
- To continuously provide local academia and research circles the access to the world's largest research community, and vice versa help to disseminate the research results to the world.
- To enhance the influence of the chapter in relevant research community.
- To participate in relevant international and domestic activities such as conferences and exhibitions to absorb the latest research development, to build up chapter publicity, and to recruit more members joining the chapter.

To serve the research communities related to instrument technology by introducing the latest frontier research progress through organizing seminars, talks, and courses.

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

- Promote international visibility by hosting international summer or winter schools.
- Promote workshop participation by accepting poster submissions from outside of Taiwan in future workshops.
- Promote student networking by adding a student session held in parallel with the panel discussion session in future workshops.

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

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

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

- Organize workshops or tutorials aimed at educating power engineers and graduated students on the fundamental concepts of power market and energy storage for future Taiwan power systems under highly penetrated renewable energy.

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

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

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

Goal:

- Continually promote IEEE SMC visibility.
- Continually promote and recruit the new faculties and students to join the SMCS.
- Help our members upgrade their membership level or participate in more IEEE related activities

Future Plans:

- SMC Taipei Chapter will continue to help sponsor the International Automatic Control Conference (CACS 2025), 2025.
- SMC Taipei Chapter will continue to help co-sponsor 2025 International Conference on Fuzzy Theory and Its Applications (iFUZZY 2025) 2025.
- Continually organize technical talks on AI and industrial topics.
- To cooperate with other organizational units of the IEEE or other organizations.

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

- Goal:
  - Continue to promote IEEE SMC visibility.
  - Recruit more faculty and students to join IEEE SMC Society.

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

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

In 2025, SSCS Taipei Chapter plans on organizing the following events :

- Jan.: organize the 2025 ISSCC Taiwan Speaker Rehearsal.
- March- April: Organize the 2025 ISSCC Highlight/Review Workshop in Taiwan, which will highlight the technical trends and papers presented at the 2025 ISSCC.
- April: co-sponsor the VLSI-Design, Automation, and Testing (VLSI-DAT) Symposium, which is an international symposium held in Hsinchu, Taiwan, every year.
- May-July: organize 1 SSCS Distinguished Lecture event.
- Aug.: co-sponsor the VLSI Design/CAD Symposium, which is a domestic symposium in Taiwan held every year.
- Aug.: Summer chapter meeting, membership drive, and industry outreach events.
- Oct.: organize the A-SSCC Taipei Press Conference to promote the upcoming (2025) Nov. A-SSCC.
- Sep.-Nov.: 1 SSCS Distinguished Lecture

Nov.: organize the 2026 ISSCC Taipei Press Conference to promote the 2026 ISSCC.

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

- In order to promote reliability engineering and management in Taiwan, IEEE Reliability Society Taipei/Tainan Chapter (RL07) will continue to serve its members next year by holding invited lectures, keynote speeches, and seminars.

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

- We will continue to work on membership promotion and encourage more potential researchers to be VTS members in 2025.
- We plan to invite IEEE Distinguished Lecturers/Scholars to Taiwan for research interactions and/or possible research collaborations.

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

The table below shows our future plans.

Date	Event	Content
2025/03/08	Junior EE Alumni Talk (IV)	Discussing
2025/03/11	Going Abroad Seminar	Discussing
2025/03/29	Junior EE Alumni Talk (V)	Discussing

2025/04/01	Lab Visit	Discussing
2025/04/19	Junior EE Alumni Talk (VI)	Discussing
2025/05/06	Company Visit	Discussing
2025/05/10	Junior EE Alumni Talk (VII)	Discussing
2025/05/20	Academic Sharing Session & Kahoot Competition	Discussing
2025/05/24	Junior EE Alumni Talk (VIII)	Discussing

- Encourage more students to join IEEE NCU Student Branch.
- Encourage members to comprehend more knowledge in electronic, computer science, etc. through discussion and participate in all kinds of student activities.
- Encourage more local members to join IEEE student membership.
- Receiving feedback from our members to improve our activities.
- Cooperate with professors and other IEEE student branch.
- Participated in more and more technology discussion.

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

Up coming events:

- Online event about the life of studying in US in spring.
- Online event about how to get an internship in the USA in spring.
- Online event about general application problems of US top universities in spring.
- Others:
- Get sponsors and advertisements to boost and help our activities.
- Keep updating our contact directory which records the contact information of alumni studying abroad.
- Recruit more students from other departments and collect information about not only EECS students but also other areas.

- **Student Branch Name: IEEE National Chung Hsing University Student Branch and Student Branch Name: IEEE National Chung Hsing University SMC Society (SMCS)**

- Invited talk about current development of Broad Learning Systems given by Prof. C. L. Philip Chen from South China University of Technology (distinguish lecture).
- Member gathering, orientation and welcoming event for inviting more students to join this IEEE student branch.
- This branch will encourage more student members to submit and support the 2025 National Conference on Advanced Robotics (NCAR 2025) as part of the conference secretariat team.

- This branch will encourage more student members to submit and support the 2025 international Conference on Advanced Robotics and Intelligent Systems (ARIS 2025) as part of the conference secretariat team.
- More female students would be invited to join this branch.

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

  Five talks of the IEEE SMC Student Branch Chapter at NTUST will be held in 2025.

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

- **Taipei Section**

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

- **Chapter Name: Communications Society Taipei Chapter (COM19)**
  - Hold IEEE initiated training courses for industry members to increase membership from the industry.
  - Local IEEE chapters help match the interests of industry and academia, and initiate industry research projects.

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

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

- **Chapter Name: Information Theory Society Taipei Chapter (IT12)**
  - Local IEEE holds more activities to encourage more students to join IEEE as "Student Member" and emphasize the link between students and companies.

- **Chapter Name: Solid-State Circuits Society Taipei Chapter (SSC37)**
  - Promotion of SSCS educational program for IC designers and students
  - Hold local activities, such as AIC workshops and Forum to attract more attention and increase of members.

- **WiE**
  - Using social software to help link the members tightly. Provide useful interdisciplinary workshop/lecture to help build up the ability in female engineers. Continue run the groups in the social software, make an updated list of all participants (name, affiliation), share timely news, and provide attractive discussion topics.

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

- N/A