2025 · 10 · 31 Fri. — 11 · 02 Sun. NCKU

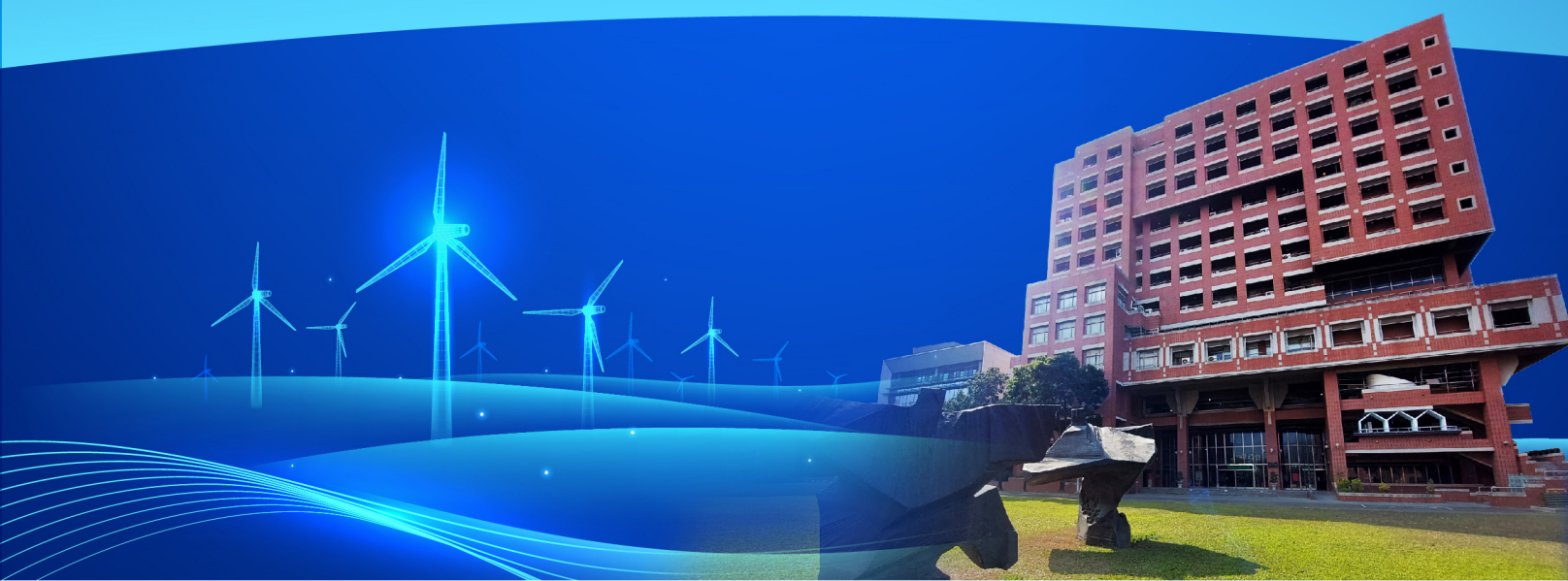
2025 ICGET-TW

2025綠色電化學科技國際學術研討會暨2025台灣電化學學會年會

The 2025 International Conference on Green Electrochemical Technologies & 2025 Annual Meeting of Electrochemical Society of Taiwan

大會手冊

PROGRAM BOOK



Program at a Glance

Program for 2025 ICGET-Tw

Time	October 31 (Friday)
15:00-20:00	**Registration** **@1st floor of Chemical Engineering Building, NCKU**
18:00-20:00	**Welcome Reception** **@5th floor of Chemical Engineering Building, NCKU**

<table>
<tr><th>Time</th><th colspan="5">November 01 (Saturday)</th></tr>
<tr><td>08:00-17:00</td><td colspan="5">Registration</td></tr>
<tr><td>08:40-09:00</td><td colspan="5">Opening Ceremony
@Room 93X57</td></tr>
<tr><td>09:00-09:40</td><td colspan="5">Joseph T. Hupp (Plenary Lecture) Chair: Chung-Wei Kung
@Room 93X57</td></tr>
<tr><td>09:40-10:00</td><td colspan="5">Coffee Break</td></tr>
<tr><td>Time</td><td>Symposium 1 (Batteries) Chair: Hong-Kang Tian @Room 93X57</td><td>Symposium 2 (Photo.) Chair: Chang-Ming Jiang @Room 93406</td><td>Symposium 3 (Basic EChem.) Chair: Yueh-Lien Lee @Room 93152</td><td>Symposium 4 (Conversions) Chair: Masaru Kato @Room 93456</td><td>Symposia 5 & 6 @Rooms 93420/93256</td></tr>
<tr><td rowspan="7">10:00-12:00</td><td>Chi-Chang Hu (KL)</td><td>Ian Sharp (KL)</td><td>Jyh-Wei Lee (KL)</td><td>Jih-Jen Wu (KL)</td><td rowspan="7">Student oral competition</td></tr>
<tr><td>Hiroyuki Fujimoto (IL)</td><td>Mario Hofmann (IL)</td><td>Peng-Wei Chu (IL)</td><td>Yu-Ching Weng (IL)</td></tr>
<tr><td>Randy Jalem (IL)</td><td>Chih-Jung Chen (IL)</td><td>Ying-Sui Sun (IL)</td><td>Shou-Heng Liu (IL)</td></tr>
<tr><td rowspan="2">Che-Ning Yeh (IL)</td><td rowspan="2">Vincent Wing-hei Lau (IL)</td><td>Saranvignesh Alagarsamy</td><td rowspan="2">Chia-Ying Chiang (IL)</td></tr>
<tr><td></td></tr>
<tr><td rowspan="2">Hong-Kang Tian (IL)</td><td rowspan="2">Wen-Hui (Sophia) Cheng (IL)</td><td></td><td>Fitri Nur Indah Sari</td></tr>
<tr><td></td><td>Shih-Ching Huang</td></tr>
<tr><td>12:00-13:00</td><td colspan="5">Lunch</td></tr>
<tr><td>12:00-14:00</td><td colspan="5">Poster Session 1
@2nd&3rd floor of Chemical Engineering Building, NCKU</td></tr>
<tr><td>12:45-14:00</td><td colspan="5">Poster Competition 1</td></tr>
</table>

14:00-14:40	**Li-Chyong Chen (Plenary Lecture) Chair: Yuh-Lang Lee @Room 93X57**					
14:40-14:50	**Short Break (Group Photo) @Room 93X57**					
Time	**Symposium 1 (Batteries) Chair: Han-Yi Chen @Room 93X57**	**Symposium 2 (Photo.) Chair: Wen-Hui (Sophia) Cheng @Room 93406**	**Symposium 3 (Basic EChem.) Chair: Ling-Yu Chang Min-Hsin Yeh @Room 93152**	**Symposium 4 (Conversions) Chair: Shou-Heng Liu @Room 93456**	**Symposia 5 & 6 @Rooms 93420/93256**	
14:50-16:00	Yoshitaka Tateyama (KL)	Benjamin Moss (IL)	Retirement Symposium for Prof. Kuo-Chuan Ho	Hao Ming Chen (KL)	Student oral competition	
		Ying-Chih Pu (IL)	Chun-Ting Li (IL)			
	Chih-Chieh Wang (IL)	Xinyi Zhang	Tzu-Yen Huang (IL)	Chun-Hu Chen (IL)		
		Kaijian Zhu				
	Han-Yi Chen (IL)		Chuan-Pei Lee (IL)	Leigh Aldous (IL)		
16:00-16:20	**Coffee Break**					
Time	**Symposium 1 (Batteries) Chair: Tzu-Ho Wu @Room 93X57**	**Symposium 2 (Photo.) Chair: Wen-Hui (Sophia) Cheng @Room 93406**	**Symposium 3 (Basic EChem.) Chair: Cheng-Lan Lin Chung-Wei Kung @Room 93152**	**Symposium 4 (Conversions) Chair: Leigh Aldous @Room 93456**	**Symposia 5 & 6 @Rooms 93420/93256**	**Symposium 7 @Room 93252**
16:20-18:00	Jeng-Kuei Chang (IL)	Fatwa Abdi (KL)	Kuo-Chuan Ho (KL)	Tomoo Mizugaki (KL)	Student oral competition	ECS-Tw Member Meeting 台灣電化學學會會員大會暨常務理監事選舉
	Watchareeya Kaveevivitchai (IL)					
	Mozaffar Abdollahifar (IL)	Mutsumi Sugiyama (IL)	Lin-Chi Chen (IL)	Steve Sheng-Fa Yu (IL)		
	Tzu-Ho Wu (IL)	Matyas Daboczi (IL)	Lu-Yin Lin (IL)	Omran Moradlou		
				Keseven Lakshmanan		
	Tripti Agnihotri	Kouki Oka (IL)	Retirement Symposium for Prof. Kuo-Chuan Ho	Cong-Siang Huang		
18:00-19-00	**Transportation**					
19:00-21:00	**Banquet** @禧榕軒大飯店(Grand Banyan Hotel)					

<table>
<tr><th>Time</th><th colspan="5">November 02 (Sunday)</th></tr>
<tr><td>08:30-17:00</td><td colspan="5">Registration</td></tr>
<tr><td>09:00-09:40</td><td colspan="5">Bing-Joe Hwang (Plenary Lecture) Chair: Hsisheng Teng
@Room 93X57</td></tr>
<tr><td>09:40-10:00</td><td colspan="5">Coffee Break</td></tr>
<tr><td>Time</td><td>Symposium 1 (Batteries) Chair: Wei-Ren Liu @Room 93X57</td><td>Symposium 2 (Photo.) Chair: Chieh-Ting Lin @Room 93406</td><td>Symposium 3 (Basic EChem.) Chair: Ching-Chou Wu Shih-Han Wang @Room 93152</td><td>Symposium 4 (Conversions) Chair: Yan-Gu Lin @Room 93456</td><td>Symposia 5 & 6 @Rooms 93420/93256</td></tr>
<tr><td rowspan="8">10:00-12:00</td><td rowspan="2">Hsisheng Teng (KL)</td><td>Di-Yan Wang (IL)</td><td rowspan="2">Ching-Chou Wu (KL)</td><td rowspan="2">Kazuhiro Takanabe (KL)</td><td rowspan="8">Student oral competition</td></tr>
<tr><td>Tzu-Ying Lin (IL)</td></tr>
<tr><td>Soorathep Kheawhom (IL)</td><td>Yu-Ching Huang (IL)</td><td>Liu-Wen Chang (IL)</td><td rowspan="2">Wei-Nien Su (KL)</td></tr>
<tr><td>Wei-Ren Liu (IL)</td><td>Chieh-Szu Huang (IL)</td><td>Tso-Fu Mark Chang (IL)</td></tr>
<tr><td rowspan="2">Tetsu Yonezawa (IL)</td><td>Nideesh Perumbalathodi</td><td rowspan="2">Hsiu-Wei Cheng (IL)</td><td rowspan="2">Cheng-Lan Lin (IL)</td></tr>
<tr><td>Thangavelu Sakthi Priya</td></tr>
<tr><td rowspan="2">Orapa Tamwattana (IL)</td><td></td><td>Thi Kim Anh Nguyen</td><td rowspan="2">Yi-Hsuan Lai (IL)</td></tr>
<tr><td></td><td>Wei-Li Shih</td></tr>
<tr><td></td><td></td><td></td><td rowspan="2">Sung-Fu Hung (IL)</td></tr>
<tr><td></td><td></td><td></td></tr>
<tr><td>12:00-13:00</td><td colspan="5">Lunch</td></tr>
<tr><td>12:00-14:00</td><td colspan="5">Poster Session 2
@2nd&3rd floor of Chemical Engineering Building, NCKU</td></tr>
<tr><td>12:45-14:00</td><td colspan="5">Poster Competition 2</td></tr>
</table>

Time	Symposium 1 (Batteries) Chair: Fu-Ming Wang @Room 93X57	Symposium 2 (Photo.) Chair: Tzu-Ying Lin @Room 93406	Symposium 3 (Industry) Chair: Chia-Chin Chang @Room 93152	Symposium 4 (Conversions) Chair: Yi-Hsuan Lai @Room 93456	
14:00-15:30	Chun-Chen Yang (KL)	Chu-Chen Chueh (KL)	Nan Hung Lester Yeh (KL)	Yung-Jung Hsu (KL)	
	Seongmin Bak (IL)	Robert J. E. Westbrook (IL)	Jin-Ming Chen (IL)	Yan-Gu Lin (IL)	
	Hui-Chia Yu (IL)	Luis Lanzetta (IL)	Wei-Ting Yeh (IL)	Masaru Kato (IL)	
	Fu-Ming Wang (IL)	Chih-Ping Chen (IL)	Shih-Chieh Liao (IL)	Mia Rinawati	
15:30-15:50	**Coffee Break**				
Time	**Symposium 1 (Batteries) Chair: Yu-Sheng Su @Room 93X57**	**Symposium 2 (Batteries) Chair: Sheng-Heng Chung @Room 93406**	**Symposium 3 (Industry) Chair: Chia-Chin Chang @Room 93152**	**Symposium 4 (Basic EChem.) Chair: Hsiu-Wei Cheng @Room 93456**	
15:50-17:00	Kuan-Zong Fung (IL)	Sheng-Heng Chung (IL)	Chih-Yuan Chen (IL)	Tomoyuki Kurioka (IL)	
	Yu-Sheng Su (IL)	Sang-Ok Kim (IL)	Meng-Lun Lee (IL)	Huan-Chang Liang (IL)	
	Manojkumar Seenivasan	Teng-Hao Chen (IL)	William Hwang (IL)	Chia-Yu Ma	
17:00-17:40	**Joel W. Ager III (Plenary Lecture) Chair: Wen-Hui (Sophia) Cheng @Room 93X57**				
17:40-18:30	**Closing and awarding ceremony @Room 93X57**				

Contents

I. Welcome Message

On behalf of the organizing committee, it is our great pleasure to cordially invite you to join the 2025 International Conference on Green Electrochemical Technologies (2025 ICGET-Tw) & The 2025 Annual Meeting of Electrochemical Society of Taiwan (ECS-Tw) held on October 31-November 2, 2025. The venue of 2025 ICGET-Tw is the building of Department of Chemical Engineering at National Cheng Kung University (NCKU), located in Tainan City, Taiwan.

2025 ICGET-Tw and the 2025 ECS-Tw Meeting aims to bring together international active scholars, professional researchers, industrial experts, and students to share and discuss innovations in the areas of green electrochemistry. The conference covers five major topics including batteries & storage devices, conversions, photoelectrochemistry & solar cells, basic electrochemistry & electroplating, and industry & management, with broad interest from fundamental science to cutting edge technologies and future applications.

Tainan City is in the southwestern part of Taiwan and the ancient capital of Taiwan with the history and culture of more than 400 years, and NCKU is one of the top Universities in Taiwan with the history of more than 90 years. We look forward to your participation in 2025 ICGET-Tw. Please join us in Tainan City for an enriching and unforgettable conference experience!

Prof. Chung-Wei Kung
Conference Chair
Department of Chemical Engineering, NCKU

Prof. Hong-Kang Tian
Conference co-Chair
Department of Chemical Engineering, NCKU

Prof. Chi-Chang Hu
Conference co-Chair & Chairman of ECS-Tw
Department of Chemical Engineering, National Tsing Hua University, Taiwan

II. Committees

1. Advisory Committee

Prof. Hsisheng Teng
Chair Professor
Department of Chemical Engineering,
National Cheng Kung University, Taiwan

Prof. Yuh-Lang Lee
Chair Professor
Department of Chemical Engineering,
National Cheng Kung University, Taiwan

2. Executive Committee

Prof. Chung-Wei Kung (*Conference chair*)
Associate Professor
Department of Chemical Engineering
National Cheng Kung University, Taiwan

Prof. Chi-Chang Hu (*Conference vice chair*)
Chair Professor
Department of Chemical Engineering
National Tsing Hua University, Taiwan

Prof. Hong-Kang Tian (*Conference vice chair & Coordinator of Batteries and Storage Devices session*)
Associate Professor
Department of Chemical Engineering
National Cheng Kung University, Taiwan

Prof. Wen-Hui Cheng (*Coordinator of Photoelectrochemistry & Solar Cells session*)
Assistant Professor
Department of Materials Science and Engineering
National Cheng Kung University, Taiwan

Prof. Shih-Han Wang (*Coordinator of Basic Electrochemistry & Electroplating session*)
Associate Professor
Department of Chemical and Materials Engineering
National Yunlin University of Science and Technology, Taiwan

Prof. Chia-Yu Lin (*Coordinator of Conversions session*)
Professor
Department of Chemical Engineering
National Cheng Kung University, Taiwan

Prof. Chia-Chin Chang (*Coordinator of Industry & Management session*)
Distinguished Professor
Graduate Institute of Energy and Sustainability Technology
National Taiwan University of Science and Technology, Taiwan

Prof. Sheng-Heng Chung (*Committee member of Batteries and Storage Devices session*)
Associate Professor
Department of Materials Science and Engineering
National Cheng Kung University, Taiwan

Prof. Wei-Ren Liu (*Committee member of Batteries and Storage Devices session*)
Professor
Department of Chemical Engineering
Chung Yuan Christian University, Taiwan

Prof. Tzu-Ho Wu (*Committee member of Batteries and Storage Devices session*)
Associate Professor
Department of Chemical and Materials Engineering
National Yunlin University of Science and Technology, Taiwan

Prof. Chieh-Ting Lin (*Committee member of Photoelectrochemistry & Solar Cells session*)
Associate Professor
Department of Chemical Engineering
National Chung Hsing University, Taiwan

Prof. Chang-Ming Jiang (*Committee member of Photoelectrochemistry & Solar Cells session*)
Assistant Professor
Department of Chemistry
National Taiwan University, Taiwan

Prof. Tzu-Ying Lin (*Committee member of Photoelectrochemistry & Solar Cells session*)
Associate Professor
Department of Materials Science and Engineering
National Tsing Hua University, Taiwan

Dr. Yan-Gu Lin (*Committee member of Conversions session*)
National Synchrotron Radiation Research Center, Taiwan

Prof. Shou-Heng Liu (*Committee member of Conversions session*)
Professor
Department of Environmental Engineering
National Cheng Kung University, Taiwan

Prof. Min-Hsin Yeh (*Committee member of Basic Electrochemistry & Electroplating session*)
Associate Professor
Department of Chemical Engineering
National Taiwan University of Science and Technology, Taiwan

Prof. Yueh-Lien Lee (*Committee member of Basic Electrochemistry & Electroplating session*)
Professor
Department of Engineering Science and Ocean Engineering
National Taiwan University, Taiwan

III. Sponsors

IV. Conference Information

➢ Registration

Registration fee for the conference includes admission to all Sessions, Conference kit, and Refreshments.

➢ Registration Hour

Date	October 31 (Fri.)	November 01 (Sat.)	November 02 (Sun.)
Time	15:00-20:00	08:00-17:00	08:30-17:00
Location	Floor 1	Floor 1	Floor 1

➢ Registration Fee

Online Registration			
Identity	**Category**	**Early Bird**	**Standard**
Student	Domestic Oral & Poster	NT $2,000	NT $2,500
	International Oral & Poster	USD $150	USD $200
	Domestic Audience	NT $2,300	NT $2,800
	International Audience	USD $200	USD $250
Regular	Domestic Oral & Poster	NT $3,000	NT $3,500
	International Oral & Poster	USD $300	USD $350
	Domestic Audience	NT $3,300	NT $3,800
	International Audience	USD $350	USD $400

On-site Registration/Payment for domestic attendee		
Student	Oral & Poster	NT $2,700
	Audience	NT $3,000
Regular	Oral & Poster	NT $3,700
	Audience	NT $4,000

Banquet	
Plenary/Keynote/Invited Speakers	Free
Oral/Poster/Audience	NT $1,500; USD$ 50

V. Plenary Speakers

Dr. Joel W. Ager III

Adjunct Professor, Materials Science and Engineering, UC Berkeley
Senior Staff Scientist, Materials Sciences Division, Lawrence Berkeley National Laboratory
Address: 1 Cyclotron Rd, 2-205, Berkeley, California 94720, United States
Tel: +1-(510) 486-6715
Email: jwager@lbl.gov
Webpage: https://ager.mse.berkeley.edu/

Education:

- Ph.D. in Chemical Physics, University of Colorado, USA (1986)
- A.B. in Chemistry, Harvard College, USA (1982)

Experience:

- 2015-present: Adjunct Professor/ Materials Science and Engineering, UC Berkeley, USA
- 2015-present: Associate Program Leader/ Singapore Berkeley Research Initiative for Sustainable Energy, UC Berkeley, USA
- 2020-present: Senior Staff Scientist/ Materials Sciences Division, Lawrence Berkeley Laboratory, USA
- 2023-present: Project Leader/ Liquid Sunlight Alliance, Lawrence Berkeley Laboratory, USA
- 1990-2020: Staff Scientist/ Materials Sciences Division, Lawrence Berkeley Laboratory, USA
- 2010-2019: Project Leader/ Joint Center for Artificial Photosynthesis, Lawrence Berkeley Laboratory, USA
- 2015: Visiting Professor, Nanyang Technological University, Singapore
- 1989-1990: Postdoctoral Researcher, Lawrence Berkeley Laboratory, USA
- 1987-1988: Postdoctoral Researcher, Universität Heidelberg, Germany

Selective Honors & Awards:

- 2023: Fellow of the Royal Society of Chemistry

Research Areas:

Photoelectrochemistry, electronic materials, electrochemistry, sustainable energy.

Selective Publications: (h-index = 115, citations = 51890 per Google Scholar)

1. Kim, C.; Govindarajan, N.; Hemenway, S.; Park, J.; Zoraster, A.; Kong, C. J.; Prabhakar, R. R.; Varley, J. B.; Jung, H.-T.; Hahn, C.; Ager, J. W. Importance of Site Diversity and Connectivity in Electrochemical CO Reduction on Cu. *ACS Catal.* **2024**, 14 (5), 3128–3138.
2. Jung, H.; Ager, J. W. A Tipping Point for Solar Production of Hydrogen? *Joule* **2023**, *7* (3), 459–461.
3. Ren, H.; Kovalev, M.; Weng, Z.; Muhamad, M. Z., Ma, H., Sheng, Y.; Sun, L.; Wang, J.; Rihm, S.; Yang, W.; Lapkin, A. A.; Ager, J. W. Operando proton-transfer-reaction time-of-flight mass spectrometry of carbon dioxide reduction electrocatalysis. *Nat. Catal.* **2022**, 5(12), 1169-1179.
4. Lum, Y.; Ager, J. W. Evidence for product-specific active sites on oxide-derived Cu catalysts for electrochemical CO_2 reduction. *Nat. Catal*. **2019**, 2(1), 86-93.
5. Lum, Y.; Cheng, T.; Goddard, W. A.; Ager, J. W. Electrochemical CO Reduction Builds Solvent Water into Oxygenate Products. *J. Am. Chem. Soc*. **2018**, 140(30), 9337-9340.
6. Lum, Y.; Ager III, J. W. Sequential Catalysis Controls Selectivity in Electrochemical CO_2 Reduction on Cu. *Energy Environ. Sci.* **2018**, 11(10), 2935-2944

Materials for a Sustainable Energy Future

Joel W. Ager

Department of Materials Science & Engineering, University of California Berkeley

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Much of the current experimental research in electrochemical CO2 reduction (EC-CO2R) focuses on crafting active sites that will lower the overpotential and improve selectivity to two-electron products (CO or formate/formic acid) or to specific C2+ products such as ethylene. Focusing on active site(s) has yielded valuable insights, but the EC-CO2R reaction environment is more diverse than can be captured with this approach alone [1-3]. Moreover, the environment is highly dynamic, both at the atomic level driven by adsorbate-mediated surface reconstruction [4] and at the macro-scale due to non-linear coupling of mass transfer and pressure [5].

I will show that adapting experimental methods used to study heterogeneous and bio-enzymatic catalysis for use in EC-CO2R can yield key insights into these complex systems. For example, chemical transient kinetics measurements show that the activity of Cu-based EC-CO2R electrocatalysts is strongly associated with reservoir sites which store the crucial CO intermediate [6]. Time-resolved adsorption/desorption of intermediates reveals the distribution of their binding energies on CO2R electrocatalysts. Tracking the 13C/12C isotope fractionation though the chemical network of EC-CO2R enables key intermediate species to be identified [7].

Looking to the future, we see that despite the progress in laboratory-scale CO2 electrolysis, it is not yet directly competitive with existing, petroleum-based production methods. However, integration of CO2 conversion into existing petrochemical plants is an attractive alternative. On-site CO2 recycling (CCSR) in ethylene oxide production has a projected economic payback time as short as 1-2 years, depending on the availability of low-cost electricity and the applicable carbon taxes [8]. The CCSR approach is applicable to other large-scale chemical production processes including ammonia production. Wide-scale adoption of CCSR in chemical manufacturing has the potential to recycle between 4-10 Gta CO2 annually by 2050, representing ca. 50% of this industry's carbon neutrality goal [9].

References

[1] B. Xu et al., Nat. Catal. 2023, 6, 885.
[2] J. M. Mayer, J. Catal., 2024, 439, 115725.
[3] Wang, Lum, et al., Nature Chem. 2025 17, 334–343.
[4] Buonsanti et al., Nature Cat. 2024, 7 89
[5] Ager, Fujii, et al., ACS Energy Lett. 2024, 4225.
[6] Ager at al., ACS Catal. 2024, 14 3128.
[7] Lapkin, Ager, et al., Nature Catal. 2022 5 1169.
[8] Barecka, M. H.; Ager, J. W.; Lapkin, A. A. Energy Environ. Sci. 2021, 14, 1530–1543.
[8] Barecka, M. H.; Ager, J. W.; Lapkin, A. A. iScience 2021, 102514

Dr. Li-Chyong Chen

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Email: chenlc@ntu.edu.tw
Webpage: https://www.phys.ntu.edu.tw/enphysics/chenlc.html

Education:

(1) B. S. in Physics, National Taiwan University, Taipei, Taiwan (1977-1981)
(2) Ph. D. in Applied Physics, Harvard University, Cambridge, MA, USA (1983-1989)

Experience:

(1) Teaching Assistant (1981-1983), Jointly-appointed Professor (2021-2023), **University Chair Professor (2023-present)**, Department of Physics, National Taiwan University (NTU)
(2) Technical Member: Materials Scientist (1989-1994), General Electric, Corporate Research and Development, Materials Research Center, Schenectady, NY, USA
(3) Associate Research Fellow (1994-2000), Research Fellow (2000-2007), Distinguished Research Fellow (2007-2023), Director (2012-2018), **Jointly-appointed Distinguished Research Fellow (2023-present)**, Center for Condensed Matter Sciences, NTU
(4) **Director (2018-present)**, Center of Atomic Initiative for New Materials, NTU

Selective Honors & Awards:

(1) Academia Sinica Young Scholar Research Award (2000)
(2) Fellow: the Taiwan Physical Society (2006); the Materials Research Society, USA (2010); the Taiwan Vacuum Society (2018)
(3) Outstanding Research Award, National Science and Technology Council (2007 and 2010)
(4) Honorary Doctor, Linköping University, Sweden (2007)
(5) Distinguished Visiting Research Fellow, Royal Academy of Engineering, UK (2008)
(6) Laureate of the Khwarizmi International Award (2009)
(7) Outstanding Scholar Award, Foundation for the Adv. of Outstanding Scholarship (2010)
(8) Ho Chin-Tui Outstanding Scholar Award, Ho Chin-Tui Foundation (2012)
(9) Academician of Asia-Pacific Academy of Materials (2015)
(10) Taiwan Outstanding Women in Science (2017)
(11) Academic Award, Ministry of Education (2018)
(12) Y. Z. Hsu Scientific Chair Professor _Nano Science & Technology (2020)
(13) Academician: Academia Sinica (2022); the World Academy of Science (TWAS) (2024)
(14) National Chair Professor, Ministry of Education (2025)

Research Areas: Nanomaterials, Thin Film Technologies, Energy, Optoelectronics, and Sensing

Asymmetric Single Atom Catalysts for Highly Efficient and Selective Electrochemical CO_2 Reduction Reaction

Li-Chyong Chen[1,2,3,*], Mengstu Etay[2,4,5], Osama Nasr[2,4,5], Kuei-Hsien Chen[2,4]

[1]*Department of Physics, National Taiwan University, Taipei, 10617, Taiwan*

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[3]*Center of Atomic Initiative doe New Materials, National Taiwan University, Taipei 10617, Taiwan*

[4]*Institute of Atomic and Molecular Sciences, Academia Sinica, Taipei 10617, Taiwan*

[5]*Department of Applied Chemistry, National Yang Ming Chiao Tung University, Hsinchu 30010, Taiwan*

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NSTC 113-2639-M-002-004-ASP and **NSTC 112-2113-M-001-023**

The catalytic conversion of CO_2 to fuels or valuable chemical products provides a carbon-neutral cycle that can mitigate the rapid consumption of fossil resources and increasing CO_2 emissions. While new electrocatalysts have been rapidly developed, the conversion efficiency and product selectivity remain inadequate for this system to become a viable technology for industrial applications. Among the studied catalytic materials, single-atom catalysts (SACs) have shown some promise owing to their high atomic efficiency with tunable coordination environments, which play a vital role in boosting the reaction kinetics in many emerging electrocatalytic systems. Meanwhile, the existence of multi-paths during CO_2 reduction reaction (CO_2RR) and high competition between CO_2RR and hydrogen evolution reaction, especially in the proton-rich environment, impose significant challenges.

In this presentation, the design concepts and fabrication techniques of asymmetric Ni-based SACs will be introduced. Especially, two cases will be illustrated as model systems: (i) in situ phosphatization technique to form Ni–N_3PC, and (ii) combining metal–ligand pre-coordination with a self-sacrificing template to tune the local environment of Ni–N–C. High-angle annular dark-field scanning transmission electron microscopy, X-ray absorption spectroscopy, and X-ray photoelectron spectroscopy, were employed to confirm the atomic dispersion of Ni and the engineered coordination geometry. Importantly, these designs lead to ligand field asymmetry and modulation of the electronic structure for optimal intermediate adsorption, which delivers outstanding CO selectivity (over 90%) and accelerated CO_2RR kinetics. Compared to the symmetric SACs, the asymmetric SACs possess a lower charge-transfer resistance as revealed by electrochemical impedance spectroscopy and a much greater intrinsic activity as shown by turnover frequency analysis. Density functional theory calculations offer mechanistic clarity, indicating that Ni–N_3PC reduces the energy barrier for forming the vital *COOH intermediate, a key step in CO_2RR. Moreover, these asymmetric SACs show good operational stability (100 h at 100 mA cm^{-2} for Ni–N_3PC and 50 h at 200 mA cm^{-2} for Ni–N–C).

Reference

[1] Etay Mengstu, Sabhapathy Palani, Nasr Osama, et al. Electronic structure engineering of nickel single-atom catalyst by phosphorous for efficient CO_2 electroreduction in a proton-rich microenvironment. Chem. Engineering J. 2025; 509, 161319.

Dr. Joseph T. Hupp

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2145 Sheridan Road, Evanston, IL 60208-3113

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Email: j-hupp@northwestern.edu
Webpage: https://sites.northwestern.edu/huppgroup/

Professional Preparation:

Houghton College	Chemistry	B.S. 1979
Michigan State University	Chemistry	Ph.D. 1983
University of North Carolina	Res. Assoc., Chemistry	1984-1986

Appointments:

2000-present	Morrison Professor of Chemistry, Northwestern University
2008-2019	Senior Science Fellow, Materials Science Division, Argonne National Lab
1998-2000	Dow Professor of Chemistry, Northwestern University
1993-present	Professor, Department of Chemistry, Northwestern University
1990-1993	Associate Professor, Department of Chemistry, Northwestern University
1986-1990	Assistant Professor, Department of Chemistry, Northwestern University

Selective Honors & Awards:

- Allen J. Bard Award, The Electrochemical Society, 2023
- Fellow of the American Academy of Arts and Sciences, 2021
- Clarivate Analytics/Thomson-Reuters ISI "Highly Cited Researcher" in Chemistry, 2023, 2022, 2021, 2020, 2019, 2018, 2017, 2016, 2015, 2014
- Chair (2019-2022) and member (2017-2022) of Editorial Board, *Energy & Environmental Science*, a Royal Society of Chemistry journal (impact factor ~ 40)
- Scientific Advisory Board, Institute of Chemistry, Academica Sinica, Taiwan (2017-2025)
- Associate Editor of *Journal of the American Chemical Society* (2003-2014)

Research Areas: Design, synthesis, characterization, and exploitation of materials and molecules relevant to energy and defense problems, including carbon capture, light-to-chemical and light-to-electrical energy conversion, chemical separations, and chemical catalysis.

Selective Publications:

~690 peer-reviewed papers published, in press, or submitted; ~50 un-refereed or marginally refereed papers, conference proceedings, or book chapters; 31 awarded patents.
Google Scholar: ~125,000 citations. Hirsch-index = 175. For publication list see:
http://scholar.google.com/citations?hl=en&user=dWUKoZUAAAAJ&view_op=list_works

MOF-enabled Synthesis and Use of Arrays of Cluster-based Electrocatalysts for Reactions Relevant to Decarbonization

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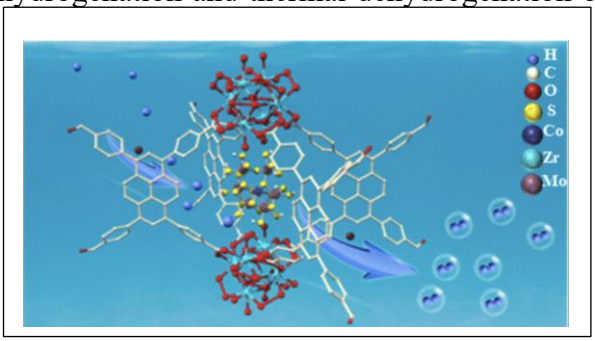
Global decarbonization as a counter measure against global warming entails a pivot away from fossil fuels and toward renewable H_2 and NH_3 as energy vectors, as direct-use sources of stored chemical energy (for example, in fuel cells). Decarbonization also entails negative carbon emission, *e.g.*, capture and utilization of atmospheric CO_2 as a source of carbon for chemical and materials manufacturing. Potentially relevant to these efforts are electrochemical production of green hydrogen via water electrolysis, electrochemical production of ammonia from water and atmosphere-derived N_2, storage and release of hydrogen via electrochemical hydrogenation and thermal dehydrogenation of liquid organic hydrogen carriers (LOHCs), and electrochemical formation of carbon-carbon bonds from CO or CO_2. Central to each of these transformations are electrocatalysts – ideally based on elements other than precious metals.



Taking a cue from Nature and her use of transition-metal sulfide dyads and clusters as enzyme cofactors for catalysis of reduction reactions, we are devising and evaluating cluster@MOF arrays as electrocatalysts for reactions relevant to decarbonization. The catalysts are obtained by first size-matching and grafting POMs (polyoxometalates) to MOFs pores that present partially exposed $Zr_6O_4(OH)_4^{8+}$ node cores. Thermal treatment with H_2S then converts POMs to PTMs (poly***thio***metalates). Example PTMs include disk-like $M'Mo_6S_{24}^{n-}$ (M = Co, Mo, Fe), analogous to Anderson POMs, [1] and $Mo_{12}PO_4S_{36}^{m-}$, analogous to Keggin POMs. This presentation will touch on the design, synthesis, characterization, electrocatalytic (or photocatalytic) application, and structural & compositional evolution of porous PTM@MOF arrays for a few of the above-mentioned reactions.

Reference

[1] J. Duan, et al. "Synthetic access to a framework-stabilized and fully sulfided analogue of an Anderson polyoxometalate that is catalytically competent for reduction reactions," *J. Am. Chem. Soc.*, 2023, 145, **13**, 7268-7277. **DOI:** 10.1021/jacs.2c12992.

Dr. Bing-Joe Hwang

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1977~1981 BS；1981~1984 MS；1984~1987 Ph.D. in Chemical Engineering, National Cheng Kung University

Current Positions:

Chair Professor, Taiwan Tech (2006.8~present); **Founder & Director,** Sustainable Energy Development Center, Taiwan Tech (2012.2~present); **Adjunct Researcher,** National Synchrotron Radiation Research Center, Taiwan (2005~); **Associate Editor,** American Chemical Society Sustainable Chemistry & Engineering (2015~); **President,** Taiwan Institute of Chemical Engineers (TwIChE) (2025.1~)

Experience:

Founder & President, The Electrochemical Society of Taiwan (ECSTw) (2013.8~2017.12); **Coordinator,** Program of Chemical Engineering, MOST, Taiwan (2008.12~2011.12); **President,** Chinese Association for Chemical Sensors and Technology in Taiwan (2002.9~2004.8); **President,** The Society of Hydrogen and Fuel Cells of Taiwan (2010.1~2013.12)

Selective Honors & Awards:

Chemical Engineering Medal, Taiwan Institute of Chemical Engineers (2023), Clarivate Analytics Highly-cited Researcher (2022, 2023, 2024), ISE-Elsevier Prize for Experimental Electrochemistry (2022); Humboldt Research Award (2020); National Chair Professorship in Engineering and Applied Science, Ministry of Education (2018-2020, lifetime afterward); Academician of Asian Pacific Academy of Materials (APAM) (2017); Fellow of International Society of Electrochemistry (FISE) (2014); Academician of the Academy of Sciences of Lisbon (2011)

Research Areas:

Electrochemistry; Interfacial Phenomena; In-situ Techniques; Electrochemical Energy Materials

Selective Publications:

1. M.A. Weret, W.N. Su, B.J. Hwang et al., Reviving Inactive Lithium and Stabilizing Lithium Deposition for Improving the Performance of Anode-Free Lithium-Sulfur Batteries, ***ACS Energy Letters 2023***, doi: 10.1021/acsenergylett.3c00622.
2. Y Nikodimos, WN Su, BJ Hwang et al.," Moisture Robustness of Li6PS5Cl Argyrodite Sulfide Solid Electrolyte Improved by Nano-Level Treatment with Lewis Acid Additives," ***ACS Energy Letters*., 9, 1844, 2024**, https://doi.org/10.1021/acsenergylett.4c00500.

Li Metal Deposition and Stripping for Electrochemical Energy Storage Systems

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Due to the high energy density of Li metal batteries, it is possible to develop energy storage systems tailored to various applications using Li metal. However, the mechanisms of Li metal deposition and dissolution—such as nucleation, growth, dendrite formation, dead metal formation, interfacial reactions, and interphase formation—vary significantly depending on the electrolyte. Controlling Li metal deposition and stripping across diverse electrolyte systems remains a critical yet challenging task for realizing high-performance anode-free Li metal batteries (AFLMBs)[1-3]. In this talk, I will present the underlying mechanisms of Li metal deposition and stripping, along with interfacial reactions between Li metals and electrolytes. These will be examined across both liquid and solid-state electrolyte systems using advanced in-situ spectroscopic and imaging techniques, as well as computational modeling. Based on insights gained from these investigations, I will also discuss strategies based on the mechanism understandings to enhance the performance of Li metal-based energy storage systems.

References

[1] B. Thirumalraj et al., Nucleation and Growth Mechanism of Lithium Metal Electroplating, Journal of the American Chemical Society 2019, doi: 10.1021/jacs.9b10195.

[2] C.J. Huang et al., Decoupling the origins of irreversible coulombic efficiency in anode-free lithium metal batteries, Nature Communications 2021, doi: 10.1038/s41467-021-21683-6.

[3] G.G. Serbessa et al., Stabilizing the interface between Li_6PS_5Cl argyrodite sulfide solid electrolyte and Li via in situ formed LiF-Li_3Bi lithiophobic-lithiophilic bifunctional layer, Energy Storage Materials 2025, doi.org/10.1016/j.ensm.2025.104103.

VI. Keynote Speakers

A. Batteries and Storage Devices

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B. Photoelectrochemistry & Solar Cells

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C. Basic Electrochemistry & Electroplating

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E. Industry & Management

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VII. Invited Speakers

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E. Industry & Management

Chih-Yuan Chen President Hephas Energy Corporation
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Meng-Lun Lee Chief Executive Officer New Bettery Energy Co.
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Wei-Ting Yeh Deputy Director Advanced Battery Materials Division, BenQ Materials Corporation
William Hwang Suppy Chain Director Long Time Tech. Co.

VIII. Technical Program

- **Information for Oral Session**

✓ The speaker should arrive at the session room 15 minutes before the speech.

✓ The speaker could bring your own laptop for speech.

✓ Mac user: Bring your own Mac-to-VGA adapter, please.

✓ Backup your files: Bring your PowerPoint presentation files on USB memory sticks AND also back up your file on google cloud or other cloud drives, please.

- **Guideline for Oral and Invited Presentation**

✓ The allocation for Plenary presentation is 40 minutes. The presenters will have:

a. 40 minutes for the presentation
b. No Q & A

✓ The allocation for Keynote presentation is 30 minutes. The presenters will have:

a. 25 minutes for the presentation
b. 5 minutes for Q & A

✓ The allocation for Invited presentation is 20 minutes. The presenters will have:

a. 17 minutes for the presentation
b. 3 minutes for Q & A

✓ The allocation for Oral presentation is 15 minutes. The presenters will have:

a. 12 minutes for the presentation
b. 3 minutes for Q & A

- **Information for Poster Session**

✓ Size：A0 portrait format (841 mm wide × 1189 mm high)

Please find details regarding poster session in page 65.

Oral Session

Oral Session

Plenary Speakers

Time	November 01, 2025 (B1, Room 93X57)	
09:00-09:40	**Plenary Speaker** **Joseph T. Hupp** **Department of Chemistry, Northwestern University** MOF-enabled Synthesis and Use of Arrays of Cluster-based Electrocatalysts for Reactions Relevant to Decarbonization	Chaired by: Chung-Wei Kung
14:00-14:40	**Plenary Speaker** **Li-Chyong Chen** **Department of Physics, National Taiwan University** Asymmetric Single Atom Catalysts for Highly Efficient and Selective Electrochemical CO_2 Reduction Reaction	Chaired by: Yuh-Lang Lee

Time	November 02, 2025 (B1, Room 93X57)	
09:00-09:40	**Plenary Speaker** **Bing-Joe Hwang** **Department of Chemical Engineering,** **National Taiwan University of Science and Technology** Li Metal Deposition and Stripping for Electrochemical Energy Storage Systems	Chaired by: Hsisheng Teng
17:00-17:40	**Plenary Speaker** **Joel W. Ager III** **Department of Materials Science and Engineering,** **UC Berkeley** Materials for a Sustainable Energy Future	Chaired by: Wen-Hui (Sophia) Cheng

Oral Session (A) Batteries and Storage Devices (1/2)

Time	November 01, 2025 (B1, Room 93X57)	
10:00-10:30	Keynote Speaker **Chi-Chang Hu** **Department of Chemical Engineering, National Tsing Hua University** Hard Carbon Designs for Promoting the Lithium-ion Storage Capacity for Lithium-ion-based Energy Storage Devices	Chaired by: Hong-Kang Tian
10:30-10:50	Invited Speaker **Hiroyuki Fujimoto** **Office of Institutional Advancement and Communications, Center for Advanced Science and Innovation, Kyoto University** Charge–discharge Performances and Mechanisms of Zn-ion Batteries with MnO_x positive electrodes	
10:50-11:10	Invited Speaker **Randy Jalem** **Research Center for Energy and Environmental Materials, National Institute for Materials Science** Computational Design of Solid Electrolytes and Their Atomistic Insights for Advancing All-Solid-State Batteries	
11:10-11:30	Invited Speaker **Che-Ning Yeh** **Department of Materials Science and Engineering, National Tsing Hua University** Morphology and Architecture Engineering for Enhanced Bifunctional Electrocatalysts in Zinc-Air Batteries	
11:30-11:50	Invited Speaker **Hong-Kang Tian** **Department of Chemical Engineering, National Cheng Kung University** Advancing Solid-State Battery Design through Multi-scale Modeling and Machine Learning Interatomic Potential	
12:00-13:00	**Lunch**	
14:50:15:20	Keynote Speaker **Yoshitaka Tateyama** **Laboratory for Chemistry and Life Science, Institute of Science Tokyo** Computational Exploration of Ion Transport Issues in Batteries	Chaired by: Han-Yi Chen
15:20-15:40	Invited Speaker **Chih-Chieh Wang** **Department of Materials & Optoelectronic Science, National Sun Yat-sen University** Surface Modification for Interface Stability in Garnet-Type Solid-State Li Batteries	
15:40-16:00	Invited Speaker **Han-Yi Chen** **Department of Materials Science and Engineering, National Tsing Hua University** In-situ Studies of Cathode Materials for Sodium-ion Batteries	
16:00-16:20	**Coffee Break**	

Time	November 01, 2025 (B1, Room 93X57)	
16:20-16:40	**Invited Speaker** **Jeng-Kuei Chang** **Department of Materials Science and Engineering, National Yang Ming Chiao Tung University** Quasi-Solid-State Lithium Batteries with High Energy Density Enabled by Ionic Liquids	Chaired by: Tzu-Ho Wu
16:40-17:00	**Invited Speaker** **Watchareeya Kaveevivitchai** **Department of Chemical Engineering, National Cheng Kung University** Material-Level Engineering of Sustainable Organic Electrode Materials for Ultrahigh-Performance Energy Storage Systems	
17:00-17:20	**Invited Speaker** **Mozaffar Abdollahifar** **Department of Materials Science, Kiel University** Fast-Charging Lithium–Sulfur Batteries	
17:20-17:40	**Invited Speaker** **Tzu-Ho Wu** **Department of Chemical and Materials Engineering, National Yunlin University of Science and Technology** Designing Vanadium Oxide Positive Electrodes for High-Rate and High-Areal-Capacity Zinc-Ion Batteries	
17:40-17:55	**Oral** **Tripti Agnihotri** **Graduate Institute of Applied Science and Technology, National Taiwan University of Science and Technology** Fluoro-phosphonate-additive-based electrolyte to enhance the safety and performance of Li-metal batteries	

Oral Session (A) Batteries and Storage Devices (2/2)

Time	November 02, 2025 (B1, Room 93X57)	
10:00-10:30	**Keynote Speaker** **Hsisheng Teng** **Department of Chemical Engineering, National Cheng Kung University** Ceramic-Induced Li^+-Transport Pathway in Composite Polymer Electrolytes for Lithium Batteries	Chaired by: Wei-Ren Liu
10:30-10:50	**Invited Speaker** **Soorathep Kheawhom** **Department of Chemical Engineering, Faculty of Engineering, Chulalongkorn University** Toward High-Performance Zinc–Bromine Flow Batteries: Addressing Key Technical Challenges with Innovative Solutions	
10:50-11:10	**Invited Speaker** **Wei-Ren Liu** **Division of Chemical Engineering, Chung Yuan Christian University** $Li_{1.3}Al_{0.3}Ti_{1.7}(PO_4)_3$ Solid Electrolytes Synthesized by a Microwave-assisted Hydrothermal Reaction for Li all-solid-state Battery Applications	
11:10-11:30	**Invited Speaker** **Tetsu Yonezawa** **Division of Materials Science and Engineering, Faculty of Engineering, Hokkaido University** Noble-Metal Free Hybrid Catalysts for High-Performance Zinc–Air Batteries: From Nanostructure Design to Practical Implementation	
11:30-11:50	**Invited Speaker** **Orapa Tamwattana** **Department of Physic, Faculty of Science, Khon Kaen University** Tailored Dual-layer SEI Interface for Dendrite-Free and Stable Anode-Free Battery	
12:00-13:00	**Lunch**	
14:00-14:30	**Keynote Speaker** **Chun-Chen Yang** **Department of Chemical Engineering, Ming Chi University of Technology** Synthesis and Characterization of Next Generation Ni-rich Full-Concentration Gradient Cathode Materials	Chaired by: Fu-Ming Wang
14:30-14:50	**Invited Speaker** **Seongmin Bak** **Department of Materials Science and Engineering, Yonsei University** Advanced Characterization Studies on Next-Generation Batteries via Synchrotron Tender X-ray Spectro-Microscopy	
14:50-15:10	**Invited Speaker** **Hui-Chia Yu** **Department of Computational Mathematics, Science and Engineering, Michigan State University** High-Throughput Style Screening for Desired Material Microstructures	

Time	November 02, 2025 (B1, Room 93X57)	
15:10-15:30	**Invited Speaker** **Fu-Ming Wang** **Graduate Institute of Applied Science and Technology, National Taiwan University of Science and Technology** Localized entropy-driven full deprotonations of ethylene carbonate by a porous coverage of cis isomerism oligomer on layered Ni-rich oxide cathode material	Chaired by: Fu-Ming Wang
15:30-15:50	**Coffee Break**	
15:50-16:10	**Invited Speaker** **Kuan-Zong Fung** **Department of Materials Science and Engineering, National Cheng Kung University** Modification of All Dry Single Crystal Process of Ni-Rich Layered $Li(Ni_xCo_yMn_z)O_2$ Cathode when [Ni] increasing from 0.8 toward 1.0	Chaired by: Yu-Sheng Su
16:10-16:30	**Invited Speaker** **Yu-Sheng Su** **International College of Semiconductor Technology, National Yang Ming Chiao Tung University** Aromatic Hydrocarbon Strategies for Advanced Lithium Batteries: From Prelithiation Chemistry to High-Performance Electrode Materials	
16:30-16:45	**Oral** **Manojkumar Seenivasan** **Battery Research Center of Green Energy, Ming Chi University of Technology** Structural evolution and transition mechanics of Ni-rich Co-free cathode materials: A detailed study using in-operando transmission X-Ray analysis	

Time	November 02, 2025 (Floor 4, Room 93406)	
15:50-16:10	**Invited Speaker** **Sheng-Heng Chung** **Department of Materials Science and Engineering, National Cheng Kung University** Electroless Metal Plated Sulfur Cathodes for High Energy Density Applications	Chaired by: Sheng-Heng Chung
16:10-16:30	**Invited Speaker** **Sang-Ok Kim** **Energy Storage Research Center, Korea Institute of Science and Technology** Heterostructured Alloy-Based Composite Anodes Enabling High-Energy, Long-Life Sodium-Ion Batteries	
16:30-16:50	**Invited Speaker** **Teng-Hao Chen** **School of Pharmacy, National Cheng Kung University** Elucidating the Structure-Performance Relationships of Benzoquinoid Cathode Materials for Electrochemical Energy Storage	

Oral Session (B) Photoelectrochemistry & Solar Cells (1/2)

Time	November 01, 2025 (Floor 4, Room 93406)	
10:00-10:30	**Keynote Speaker** **Ian Sharp** **Walter Schottky Institute and Physics Department, Technical University of Munich** Transition Metal Nitride Semiconductors for Photoelectrochemical Energy Conversion	Chaired by: Chang-Ming Jiang
10:30-10:50	**Invited Speaker** **Mario Hofmann** **Department of Physics, National Taiwan University** Understanding Photocatalysis at 2D Materials Interfaces	
10:50-11:10	**Invited Speaker** **Chih-Jung Chen** **Graduate School of Advanced Technology, National Taiwan University** Chemical Fuel Production through Solar Flow Batteries	
11:10-11:30	**Invited Speaker** **Vincent Wing-hei Lau** **Department of Chemistry, National Cheng Kung University** Analytical methodology for evaluating the intermolecular interactions between hole-transport molecules and organic perovskite	
11:30-11:50	**Invited Speaker** **Wen-Hui (Sophia) Cheng** **Department of Materials Science and Engineering, National Cheng Kung University** Effectively Transparent Catalysts for Solar Fuels Applications via Mesoscale Photonic Design	
12:00-13:00	**Lunch**	
14:50-15:10	**Invited Speaker** **Benjamin Moss** **Department of Chemistry and Chemical Engineering, California Institute of Technology** Towards guided photoelectrocatalyst discovery using high throughput operando spectroscopy	Chaired by: Wen-Hui (Sophia) Cheng
15:10-15:30	**Invited Speaker** **Ying-Chih Pu** **Department of Materials Science, National University of Tainan** Charge Carrier Dynamics of Semiconductor Nanoheterostructures by Time-Resolved Spectroscopies for the Application in Photocatalysis	
15:30-15:45	**Oral** **Xinyi Zhang** **School of Energy and Environment, City University of Hong Kong** Life cycle analysis of sustainable H_2 production and hydrogenation of chemicals in a large-scale coupled photoelectrochemical system	
15:45-16:00	**Oral** **Kaijian Zhu** **School of Energy and Environment, City University of Hong Kong** Electrochemical formation of $BiVO_4/BiPO_4$ photoanodes for enhanced selectivity towards H_2O_2 generation	
16:00-16:20	**Coffee Break**	

Time	November 01, 2025 (Floor 4, Room 93406)	
16:20-16:50	**Keynote Speaker** **Fatwa Abdi** **School of Energy and Environment, City University of Hong Kong** Coupled Photoelectrochemical H_2 Production and Synthesis of Valuable Chemicals	Chaired by: Wen-Hui (Sophia) Cheng
16:50-17:10	**Invited Speaker** **Mutsumi Sugiyama** **Department of Electrical Engineering, Tokyo University of Science** Development of Chalcogenide-Based Photoelectrodes and Monolithic Integration for Solar Water Splitting Application	
17:10-17:30	**Invited Speaker** **Matyas Daboczi** **Nanostructures Department, Institute of Technical Physics and Materials Science, HUN-REN Centre for Energy Research** Towards Efficient and Stable Solar Water Oxidation by Perovskite and Organic Semiconductor Photoanodes	
17:30-17:50	**Invited Speaker** **Kouki Oka** **Institute of Multidisciplinary Research for Advanced Materials, Tohoku University** High-Purity Organic Polymers as a Photoelectrochemical Catalyst towards Water-Splitting	

Oral Session (B) Photo-electrochemistry & Solar Cell (2/2)

Time	November 02, 2025 (Floor 4, Room 93406)	
10:00-10:20	**Invited Speaker** **Di-Yan Wang** **Department of Chemistry, National Taiwan Normal University** Highly active thin-layer 2D materials for photoelectrochemical value-added electrolysis systems	Chaired by: Chieh-Ting Lin
10:20-10:40	**Invited Speaker** **Tzu-Ying Lin** **Department of Materials Science and Engineering, National Tsing Hua University** Robust Chalcopyrite Thin Film Solar Cells: Self-Healing and Monovalent Metal Doping Effects	
10:40-11:00	**Invited Speaker** **Yu-Ching Huang** **Department of Materials Engineering, Ming Chi University of Technology** Advancing the Commercialization of 4-Terminal Perovskite/Si Tandem Solar Cells	
11:00-11:20	**Invited Speaker** **Chieh-Szu Huang** **Department of Chemical Engineering and Biotechnology, University of Cambridge** Amphiphilic Polymer Conetworks for Light Harvesting	
11:20-11:35	**Oral** **Nideesh Perumbalathodi** **Department of Chemical Engineering, National Tsing Hua University** In Situ Formation of Cu-Based Metal–Organic Framework/CuSCN Hybrid Hole Transport Layer Enables Highly Efficient and Stable Perovskite Solar Cell	
11:35-11:50	**Oral** **Thangavelu Sakthi Priya** **Department of Chemical Engineering and Biotechnology, National Taipei University of Technology** Machine Learning-Driven Electrochemical Detection of Pesticide Using Biomass-Derived Carbon/Metal Oxide Hybrids	
12:00-13:00	**Lunch**	

Time	November 02, 2025 (Floor 4, Room 93406)	
14:00-14:30	**Keynote Speaker** **Chu-Chen Chueh** **Department of Chemical Engineering, National Taiwan University,** Interface Design for Efficient Organic, Perovskite and Perovskite/Organic Tandem Solar Cells	Chaired by: Tzu-Ying Lin
14:30-14:50	**Invited Speaker** **Robert J. E. Westbrook** **Department of Chemical Engineering and Biotechnology, University of Cambridge** Local Composition Drives Photophysics in Mixed-Metal Halide Perovskites	
14:50-15:10	**Invited Speaker** **Luis Lanzetta** **Institute of Advanced Materials, Universitat Jaume I** Iodine Chemistry in Narrow-Bandgap Perovskite Solar Cells: from Oxidative Degradation to Bias Stress	
15:10-15:30	**Invited Speaker** **Chih-Ping Chen** **Department of Materials Engineering, Ming Chi University of Technology** Optimizing Carrier-Selective Layers to Boost Indoor Perovskite Photovoltaic Efficiency	

Oral Session (C) Basic Electrochemistry & Electroplating (1/2)

Time	November 01, 2025 (Floor 1, Room 93152)	
10:00-10:30	**Keynote Speaker** **Jyh-Wei Lee** **Department of Materials Engineering, Ming Chi University of Technology** Research and Development of Protective Anti-corrosion Coatings	Chaired by: Yueh-Lien Lee
10:30-10:50	**Invited Speaker** **Peng-Wei Chu** **Department of Engineering and System Science, National Tsing Hua University** Comparing the Corrosion Behavior and Microstructure of a Biodegradable WE43 Mg Alloy in Hanks' Balanced Salt Solution under Different CO_2 Conditions	
10:50-11:10	**Invited Speaker** **Ying-Sui Sun** **School of Dental Technology, Department of Dentistry, Taipei Medical University** Corrosion Behavior and Bone Regeneration Response of Atmospheric Plasma Surface-Treated Dental Titanium Implants in Arecoline and Lime-Containing Environment	
11:10-11:25	**Oral** **Saranvignesh Alagarsamy** **Department of Chemical Engineering, National Taiwan University** Plasma-Enhanced g-C_3N_4/BC-Derived LIG Electrodes for AChE-Assisted Pesticide Detection	
12:00-13:00	**Lunch**	

Time	November 01, 2025 (Floor 1, Room 93152)	
14:50-15:00	**Retirement Symposium for Prof. Kuo-Chuan Ho** **Opening: Chung-Wei Kung & Chi-Chang Hu**	
15:00-15:20	**Invited Speaker** **Chun-Ting Li** **Department of Chemistry, National Taiwan Normal University** Efficient Suppression of Core-aggregation in Phenyl Viologens by Weak Intermolecular Interaction for High-Performance Electrochromic Devices	Chaired by: Ling-Yu Chang Min-Hsin Yeh
15:20-15:40	**Invited Speaker** **Tzu-Yen Huang** **Neutron Group, National Synchrotron Radiation Research Center** Unveiling Interfacial Morphology Evolution in Organic Solar Cells via Neutron Reflectometry	
15:40-16:00	**Invited Speaker** **Chuan-Pei Lee** **Department of Applied Physics and Chemistry, University of Taipei** Synthesis of Nitrogen-Doped Carbon Dot/Tin Disulfide Nanosheet Composite Electro-catalysts for Dye-sensitized Solar Cells	
16:00-16:20	**Coffee Break**	
16:20-16:50	**Keynote Speaker** **Kuo-Chuan Ho** **Department of Chemical Engineering, National Taiwan University** Electrochromic Devices Based on Fluorinated Benzyl Viologens for Enhanced Electrochromism and Stability	Chaired by: Cheng-Lan Lin Chung-Wei Kung
16:50-17:10	**Invited Speaker** **Lin-Chi Chen** **Department of Biomechatronics Engineering, National Taiwan University** Basic Electrochemistry and Electroplating Studies for Developing Real-time Ion and Phenol Profiling Techniques toward AI-driven Bioprocesses	
17:10-17:30	**Invited Speaker** **Lu-Yin Lin** **Department of Chemical Engineering and Biotechnology, National Taipei University of Technology** Enhancing Photoelectrochemical Water Oxidation via Cobalt Tellurium Oxide-Modified Bismuth Vanadate: Redox-Driven Charge Transport Revealed by Experiment and DFT	
17:30-18:00	**Closing**	Chaired by: Min-Hsin Yeh

Oral Session (C) Basic Electrochemistry & Electroplating (2/2)

Time	November 02, 2025 (Floor 1, Room 93152)	
10:00-10:30	**Keynote Speaker** **Ching-Chou Wu** **Department of Bio-industrial Mechatronics Engineering, National Chung Hsing University** Affinity Biosensing Devices Enhanced by Electric/Magnetic Field Modulation: Breakthroughs in Rapid Reaction and Ultrasensitive Detection	Chaired by: Ching-Chou Wu Shih-Han Wang
10:30-10:50	**Invited Speaker** **Liu-Wen Chang** **Department of Materials and Optoelectronic Science, National Sun Yat-sen University** Electro-epitaxial deposition of Zn on Cu and Cu alloy substrates	
10:50-11:10	**Invited Speaker** **Tso-Fu Mark Chang** **Institute of Integrated Research, Institute of Science Tokyo** Atomic- to Nanoscale Electrodeposition of Heterogenous Functional Materials	
11:10-11:30	**Invited Speaker** **Hsiu-Wei Cheng** **Department of Chemistry, National Taiwan University** The Confined Chemistry: Touch the Unseen	
11:30-11:45	**Oral** **Thi Kim Anh Nguyen** **Department of Internal Medicine, Chang Gung Memorial Hospital** Constructing an ultrasensitive electrochemical sensor based on N, S-codoped graphene quantum dots decorated ZIF-67@$Co(OH)_2$ core-shell for hepatocellular carcinoma diagnostic	
11:45-12:00	**Oral** **Wei-Li Shih** **Department of Biomechatronics Engineering, National Taiwan University** Cobalt Hexacyanoferrate-based Electrochemical Sensing of Theophylline	

Time	November 02, 2025 (Floor 4, Room 93456)	
15:50-16:10	**Invited Speaker** **Tomoyuki Kurioka** **Institute of Integrated Research, Institute of Science Tokyo** Fabrication of Au/Polythiophene Derivatives via Simultaneous Electrodeposition of Au and Electrochemical Doping toward Electrochemical Sensing Applications	Chaired by: Hsiu-Wei Cheng
16:10-16:30	**Invited Speaker** **Huan-Chang Liang** **Mechanical and Electro-Mechanical Engineering Department, National Ilan University** The effect of Ag and Mn addition on the corrosion behavior of TiB_2 reinforcing Al-5Cu-0.4Mg alloy	
16:30-16:45	**Oral** **Chia-Yu Ma** **Department of Biomechatronics Engineering, National Taiwan University** Fabrication of CuHCF Films by Electrochemical Substitution of Prussian Blue	

Oral Session (D) Conversions (1/2)

Time	November 01, 2025 (Floor 4, Room 93456)	
10:00-10:30	**Keynote Speaker** **Jih-Jen Wu** **Department of Chemical Engineering, National Cheng Kung University** Bifunctional Nanostructures for Catalytic Hydrogen Evolution and Biomass Valorization	Chaired by: Masaru Kato
10:30-10:50	**Invited Speaker** **Yu-Ching Weng** **Department of Chemical Engineering, Feng Chia University** Comparison of the electrocatalytic performance of $Pd_2Co_6Au_2$ and Pd_8Zr_2 electrocatalysts for formic acid oxidation	
10:50-11:10	**Invited Speaker** **Shou-Heng Liu** **Department of Environmental Engineering, National Cheng Kung University** Photoelectrocatalytic H_2O_2 fuel cells for wastewater purification with power generation	
11:10-11:30	**Invited Speaker** **Chia-Ying Chiang** **Department of Chemical Engineering, National Taiwan University of Science and Technology** Electrochemical Valorization of the Biodiesel Waste, Glycerol, under Industrial Relevant Current Densities	
11:30-11:45	**Oral** **Fitri Nur Indah Sari** **Department of Chemical Engineering, National Cheng Kung University** Iodide-Mediated Electroreduction of Carbon Dioxide for Efficient and Selective Electrosynthesis of Multicarbon Products over Copper Iodide Microcrystals	
11:45-12:00	**Oral** **Shih-Ching Huang** **National Synchrotron Radiation Research Center** Interface-engineered electrocatalysts for neutral seawater splitting: Strategies for enhanced activity and durability	
12:00-13:00	**Lunch**	

Time	November 01, 2025 (Floor 4, Room 93456)	
14:50-15:20	**Keynote Speaker** **Hao Ming Chen** **Department of Chemistry, National Taiwan University** Understanding Dynamic Behavior of Molecular Electrocatalyst	Chaired by: Shou-Heng Liu
15:20-15:40	**Invited Speaker** **Chun-Hu Chen** **Department of Chemistry, National Sun Yat-Sen University** Synthesis and Structural Doping of 3D Crumpled Graphene Spheres	
15:40-16:00	**Invited Speaker** **Leigh Aldous** **Department of Chemical Engineering, National Taiwan University** Using Electrochemistry to Convert Waste Heat to Electricity: Efficiency, Electrocatalysis and Gelled Electrolytes	
16:00-16:20	**Coffee Break**	
16:20-16:50	**Keynote Speaker** **Tomoo Mizugaki** **Department of Materials Engineering Science, Graduate School of Engineering Science, The University of Osaka** Transformation of Biomass-derived Platform Chemicals using Metal Carbide Nanoparticle Catalysts	Chaired by: Leigh Aldous
16:50-17:10	**Invited Speaker** **Steve Sheng-Fa Yu** **Institute of Chemistry, Academia Sinica** Efficient Catalytic Electrochemical CO_2 Reduction Reactions to $HCOO^-$/HCOOH over Porous BiOCl Materials	
17:10-17:25	**Oral** **Omran Moradlou** **Institute of Atomic and Molecular Sciences, Academia Sinica** Bimetallic CuSn Alloy Catalysts for Stable, High-Current-Density Formate Production in Electrochemical CO_2 Reduction Reaction	
17:25-17:40	**Oral** **Keseven Lakshmanan** **National Taiwan University of Science and Technology** Mechanistic Insights into *CO Intermediate Modulation and C–C Coupling over Dual-Metal Active Sites for Multi-carbon Production in CO_2RR	
17:40-17:55	**Oral** **Cong-Siang Huang** **Department of Chemical Engineering, National Taiwan University** Measuring the True Efficiency of Thermogalvanic Cells for Waste Heat Conversion	

Oral Session (D) Conversions (2/2)

Time	November 02, 2025 (Floor 4, Room 93456)	
10:00-10:30	**Keynote Speaker** **Kazuhiro Takanabe** **Department of Chemical System Engineering, School of Engineering, The University of Tokyo** Revolutionizing Water Electrolysis with Electrolyte Engineering	Chaired by: Yan-Gu Lin
10:30-11:00	**Keynote Speaker** **Wei-Nien Su** **Graduate Institute of Applied Science and Technology, National Taiwan University of Science and Technology** From Waste to Watt: Electro-Oxidative Routes for Green Hydrogen and Chemical Valorization	
11:00-11:20	**Invited Speaker** **Cheng-Lan Lin** **Department of Chemical and Materials Engineering, Tamkang University** Platinum–Silica/Carbon Nanocomposites with Improved Methanol Oxidation Reaction Activity and Carbon Monoxide Tolerance	
11:20-11:40	**Invited Speaker** **Yi-Hsuan Lai** **Department of Materials Science and Engineering, National Cheng Kung University** Earth-Abundant Materials for the Co-Production of Hydrogen and Value-added Chemicals through (Photo)Electrochemical Biomass Valorization	
11:40-12:00	**Invited Speaker** **Sung-Fu Hung** **Department of Applied Chemistry, National Yang Ming Chiao Tung University** Unveiling the Synergies of Sulfur-Containing Single-Atom Catalysts via Model Thiophene-Decorated Nickel Porphyrins for Tandem CO_2 Reduction Reaction	
12:00-13:00	**Lunch**	

Time	November 02, 2025 (Floor 4, Room 93456)	
14:00-14:30	**Keynote Speaker** **Yung-Jung Hsu** **Department of Materials Science and Engineering, National Yang Ming Chiao Tung University** Core@Shell and Yolk@Shell Nanocrystals for Hydrogen Production	Chaired by: Yi-Hsuan Lai
14:30-14:50	**Invited Speaker** **Yan-Gu Lin** **Scientific Research Division, National Synchrotron Radiation Research Center** Synchrotron Based Analyses for Studying Electrochemical Interfaces	
14:50-15:10	**Invited Speaker** **Masaru Kato** **Faculty of Environmental Earth Science, Hokkaido University** Nitrate and Nitrous Oxide Reduction Reactions at Multimetallic PtPdSn Electrocatalysts	
15:10-15:25	**Oral** **Mia Rinawati** **Department of Chemical Engineering, National Taiwan University of Science and Technology** Tandem Electrocatalyst for Efficient Nitrate Electroreduction via Immobilization of the Molecular Cu on Fe Single Atom Catalysts	

Oral Session (E) Industry & Management (1/1)

Time	November 02, 2025 (Floor 1, Room 93152)	
14:00-14:30	Keynote Speaker **Nan Hung Lester Yeh** **E-ONE MOLI ENERGY CORP.** Revolutionary Innovations in Ultra-High-Power Cells by Molicel	Chaired by: Chia-Chin Chang
14:30-14:50	Invited Speaker **Jin-Ming Chen** **LARGAN Energy Material Co.** High-rate Charge Lithium Battery Anode Materials	
14:50-15:10	Invited Speaker **Wei-Ting Yeh** **Advanced Battery Materials Division, BenQ Materials Corporation** Safety, Safety and Safety - Separator Armarator	
15:10-15:30	Invited Speaker **Shih-Chieh Liao** **Material and Chemical Research Laboratories, Industrial Technology Research Institute** LMFP and LMFP-NMC Composite Cells	
15:30-15:50	**Coffee Break**	
15:50-16:10	Invited Speaker **Chih-Yuan Chen** **Hephas Energy Corporation** Technical Overview of Fuel Cells and Electrolyzer Systems: From Materials to Applications	Chaired by: Chia-Chin Chang
16:10-16:30	Invited Speaker **Meng-Lun Lee** **New Bettery Energy Co., Ltd** Material tests and Applications of Na-ion Batteries and Battery Packs	
16:30-16:50	Invited Speaker **William Hwang** **Long Time Tech. Co.** Why there is >95% LiB use graphite mad in China, and what's the silver lining?	

Student Oral Presentation Competition

Student Oral Presentation Competition

Topic

(A) Batteries and Storage Devices
(B) Photoelectrochemistry & Solar Cells
(C) Basic Electrochemistry & Electroplating
(D) Conversions

About Oral

1. Oral Presentation (5 min) + Q&A (4 min)
2. The oral presentation must be presented in English.
3. Location & Time: Check the schedule below, please.

Require Registration and Payment

1. Registration and payment: Each student should complete the registration and payment for the Conference.
2. Show up: Each student must show up in your oral session.

Best Oral Awards and Honorable Mention Oral Awards

1. Join the Closing ceremony: Awards will all be rewarded in the closing ceremony.
2. Closing Ceremony: at 17:40, November 2, 2025 (Sunday).
3. Certificate of Merit: Please make sure all your personal information is correct on-site.

Schedule

#	Location	Time
Topic (A), #1~#13	Room 93420	11/1 (Sat.) 10:00-12:00
Topic (A), #14~#25	Room 93256	11/1 (Sat.) 10:00-12:00
Topic (A), #26~#32	Room 93420	11/1 (Sat.) 14:50-16:00
Topic (A), #33~#39	Room 93256	11/1 (Sat.) 14:50-16:00
Topic (B)	Room 93256	11/1 (Sat.) 16:20-18:00
Topic (D)	Room 93420	11/1 (Sat.) 16:20-18:00
Topic (C), #1~#10	Room 93420	11/2 (Sun.) 10:00-12:00
Topic (C), #11~#19	Room 93256	11/2 (Sun.) 10:00-12:00

Student Oral Presentation Competition

(A) Batteries and Storage Devices

#	Abstract No.	Title	Presenter	Institution / Organization	Authors
1	0214	Fast Statistical Tuning of Carbon-Shelled $Na_3V_2(PO_4)_3$ Cathodes Yields 85 % Capacity Retention after 3500 Cycles at 3C	Arshid Numan	Sunway University	Hafiz Kashif razzaq, Kainat Darwaishb, Chun-Chen Yangb, Arshid Numan
2	0280	Deciphering the Role of Fe^{2+} vs. Fe^{3+} Oxidation States: Coordination Engineering of Single-Atom Catalysts for Stable Li–S Batteries	Ashok vallal saravanan	National Taiwan University of Science and Technology	Ashok vallal Saravanan, Keseven Lakshmanan, Wei-Nien Su, She-Hwang Wu, Chun-Chen Yang, Bing Joe Hwang
3	0074	Ultrahigh High Mass Loading CoNi-LDH @Cu foam as Cathode for Zinc Ion Alkaline Aqueous Battery	Cheng-Hong Du	National Dong Hwa University	Cheng-Hong Du, Yu-Kuei Hsu
4	0084	Operational strategy for capacity retention in VRFB based on standing time adjustment	Cheng-Pang Chen	National Chin-Yi University of Technology	Tien-Fu Yang, Cheng-Pang Chen
5	0262	In-situ Formation of Phosphide-rich SEI Layer on Three-dimensional Carbon Nanotube Aerogels for Highly Stable Lithium	Chi-Wei Wu	National Tsing Hua University	Che-Ning Yeh, Chi-Wei Wu
6	0167	Emergent Lithium Storage in Metal-Organic Frameworks Driven by Electrochemically Structural Transformation	Chun-Yen Yang	National Taiwan University	Chun-Yen Yang, Gang Wan, Chia-Chin Chen
7	0246	Tuning Lithium-Ion Solvation Structure with Fluorinated Esters for Enhanced Interfacial Stability in Wide-Temperature Lithium-Ion Capacitors	Cing-Yu Hu	National Cheng Kung University	Cing-Yu Hu, Hsisheng Trng
8	0273	Effect of Dopant-induced Residual Stress on Fast-charging Performance of Silicon Anodes for Lithium-ion Batteries	Han-Shiuan, Lin	National Tsing Hua University	Han-Shiuan, Lin, Che-Ning, Yeh
9	0172	Small Molecule Derived Self-Assembled layer for Enhancing Kinetics and Stability of NCM811 Cathodes in Lithium-Ion Batteries	Hany Khammar	National Taiwan University	Hany Khammar, Ibrahim Habib, Chia-Chin Chen
10	0206	Multi-Electron Transfer Enabled by Interhalogen Chemistry for High Energy Density Zinc-Iodine Batteries	Jian-Zhi Hong	National Taipei University of Technology	Jian-Zhi Hong, Ying-Chu Chen*
11	0118	Exploring Surface Stability of Li-Argyrodite Solid Electrolytes Using First-principles Calculations Combined with Machine-learning Interatomic Potentials	Jing-Yan Wu	National Cheng Kung University	Jing-Yan Wu, Hong-Kang Tian,
12	0157	Synergistic Interface Strategy of in-situ Formed 3D Lithiophilic Oxide Layer Integrated with "Retention and Restoration" Buffer Layer on Copper Foil for Stable Lithium Metal Batteries	Kainat Darwaish	Ming Chi University of Technology	Kainat Darwaish, Chun-Chen Yang

(A) Batteries and Storage Devices

#	Abstract No.	Title	Presenter	Institution / Organization	Authors
13	0232	Electrochemically Modified Interface Promoting the Oxygen-Electrocatalytic Kinetics in Near-Neutral Zinc-Air Batteries	Kai-Yu Tseng	National Tsing Hua University	Chi-Chang Hu, Kai-Yu Tseng,
14	0170	Bridging Theory and Reality: Predicting Mixed Ion-Electron Transport Phenomena in Actual Battery Electrodes	Le-Yen Lin	National Taiwan University	Le-Yen Lin, Meng-Hua Lin, Chia-Chin Chen
15	0111	A Computational Method for Simulating PEO-Based Electrolyte Oxidation on NMC Cathodes and Predicting CEI Components	Liang-Ting Wu	National Taiwan University of Science and Technology	Liang-Ting Wu, Jyh-Chiang Jiang
16	0151	Uncovering Dopant-Induced Modulation of Na-Ion Dynamics in $Na_5Y_{1-x}La_xSi_4O_{12}$ solid electrolyte via First-Principles and Machine Learning Interatomic Potentials	Li-Lun Lin	National Cheng Kung University	Li-Lun Lin, Hong-Kang Tian
17	0148	Microwave-Assisted Synthesis and Characterizations of Nitrogen-Doped Carbon-Coated $Na_4Fe_3(PO_4)_2P_2O_7$ Cathode for Sodium-Ion Batteries	Manoj Kumar Senniyappan	Ming Chi University of Technology	Manoj Kumar Senniyappan, Tai-Feng Hung
18	0184	The Effect of WO_3 Coating Layer on the High-Voltage LNMO Cathodes in Lithium-Ion Batteries	Nikholas Kukuh Pambudi	National Taiwan University	Nikholas Kukuh Pambudi, Chen-Hao Wang, Heng-Liang Wu
19	0213	High-Performance Sb/Cu Anode with Exceptional Rate Capability and Areal Capacity for Aqueous Alkaline Batteries	Pei-Rong Chen	National Taipei University of Technology	Pei-Rong Chen
20	0211	Stable Mn Anode Enabled by Stearic Acid-Copper Interfacial Layer	Pei-Teng Chou	National Taipei University of Technology	Pei-Teng Chou, Ying-Chu Chen
21	0212	Oxygen-rich Interface Enables Long-Lasting Zinc–Iodine Batteries with Ultrahigh Areal Capacity	Ping-Hung Chen	National Taipei University of Technology	Ping-Hung Chen, Ting-Yi Tsai
22	0257	Intra-Shell Interactions Revolutionizing Electrolyte Development for Lithium-Ion Batteries in Harsh Conditions	Po Wei Huang	National Cheng Kung University	Po Wei Huang, Hsisheng Teng
23	0173	Synergistic Enhancement of Structural Stability and Electrochemical Performance in NMC811 via Na^+/Al^{3+} Co-Doping	Ru-Hong Chiu	National Tsing Hua University	Ru-Hong Chiu, Che-Ya Wu, Tzu-Ying Lin
24	0041	Rational Design of $MnFe_2O_4$@$Ti_3C_2T_X$ MXene Heterostructures from Bimetallic MOFs for High-Capacity Li/Na-Ion Batteries	S Kishore Babu	Chung Yuan Christian University	S Kishore Babu, Wei-Ren Liu
25	0259	All-solid-state lithium sulfur batteries with tin/sulfur cathode	Shih Lun Yang	National Cheng Kung University	Shih Lun Yang, Sheng-Heng Chung
26	0282	Investigation of Electrochemical Reaction Mechanism Inside Zinc-Sulfur Batteries Using Ethaline-Based Deep Eutectic Solvent Electrolytes	Shih-Ming Lin	National Tsing Hua University	Shih-Ming Lin, Shu-Chi Wu, Bing-Ni Gu, Hsuan-Yu Lee, Wei-Hsiang Huang, Hsueh-Shih Chen, Yu-Lun Chueh

(A) Batteries and Storage Devices

#	Abstract No.	Title	Presenter	Institution / Organization	Authors
27	0194	Heteroatom-doped ZnFe PBA as An Efficient Electrocatalyst Enabling Bifunctional Electrocatalyst for High Value-added Rechargeable $2e^-$ ORR/Zn–Air Battery	Sofiannisa Aulia	National Taiwan University of Science and Technology	Sofiannisa Aulia, Tzu-Ting Liu, Mia Rinawati, Min-Hsin Yeh
28	0274	Autogenous Phase Conversion of VOOH into $V_{10}O_{24}\cdot nH_2O$: A Strategy for High-Performance Lithium-Ion Electrodes	Soumallya Banerjee	Academia Sinica	Soumallya Banerjee, Hong-Cheu Lin, Chih-Wei Chu
29	0221	Two-Step Desolvation in Defect-Engineered MOF-801 Enables Highly Reversible Zn Electroplating under Highly Acidic Solution	Ting-Yu Wang	National Tsing Hua University	Ting-Yu Wang, Chi-Chang Hu
30	0189	Porous Hard Carbon/Silicon Composite Derived from Biowaste for High-Performance Lithium-Ion Battery Anodes	Tsung-Ying Yang	National Tsing Hua University	Tsung-Ying, Yang, I-Hua, Kao, Che-Ya, Wu, Tzu-Ying, Lin
31	0124	MIL-88 as a Self-Templated to Cobalt Ion Layered Double Hydroxide as Anode Materials for Sodium-ion Battery.	Wei-Cheng Chen	National Taipei University of Technology	Lu-Yin Lin, Wei-Cheng Chen
32	0267	Metal Oxide-Modified Carbon Nanotube Aerogel as a Functional Host for High-Loading Lithium–Sulfur Batteries	Wen Sun	National Tsing Hua University	Wen Sun, Yi-Jhe Jhou, Che-Ning Yeh
33	0049	Derivation of Sulfide–Carbon Composites from Octahedral CuBTC for Application in Sodium-Ion Battery Anodes	Yen-Yu Liu	National Taipei University of Technology	Yen-Yu Liu, LuYinLin
34	0174	Frequency-Specific Modeling for Battery Parameter Identification Under Battery Aging	Ying Kung	NTUIAM	Ying Kung, Cheng-Hsi Tien, Chi-Jyun Ko, Kuo-Ching Chen
35	0193	Spherulitic vs. Amorphous Domains: Probing Ionic Transport in Polymer Solid Electrolyte	Yu-Chi Wang	National Taiwan University	Yu-Chi Wang, Shun-Jhih Yang, Chia-Chin Chen
36	0122	2D Continuum Modeling to Predict Lithium-Ion Conductivity and Transport Pathways in Ceramic-Polymer Hybrid Solid Electrolytes	Yu-Hsuan Lin	National Cheng Kung University	Yu-Hsuan Lin, Hong-Kang Tian
37	0225	Poly(acrylic acid)-Regulated Crosslinked Gel Electrolytes with Self-Healing Properties for Potential Flexible Supercapacitor Applications	YUN KU	National Tsing Hua University	YUN KU, Yi-An Chen, Hung-Yi Huang, Rou-Han Lai, Yi-Heng Tu, Ho-Hsiu Chou, Chi-Chang Hu
38	0132	A Nitrogen- and Carbonyl-rich Supramolecular Layered Compound as Sustainable Cathode Material for Magnesium-ion Batteries	Yu-Tien Chen	National Cheng Kung University	Watchareeya Kaveevivitchai, Yu-Tien Chen
39	0236	Modified Layered Double Hydroxide Electrodes: Controlling Interlayer Spacing and Interfacial Performance for Highly Efficient and Stable Oxygen Evolution in Seawater Electrolysis	Zih-You Chen	National Taipei University of Technology	Ling-Yu Chang, Zih-You Chen

(B) Photoelectrochemistry & Solar Cells

#	Abstract No.	Title	Presenter	Institution / Organization	Authors
1	0005	Engineering an advanced NH_2-functionalized MOF/$NiIn_2S_4$/phosphorene hybrid for high performance photoelectrocatalytic hydrogen evolution reaction	Deblina Roy	National Tsing Hua University	Deblina Roy, Ruey-An Doong
2	0021	Revealing light intensity effect on the selectivity of photoelectrochemical glycerol oxidation	WEN Lan	City University of Hong Kong	WEN Lan, Kaijian Zhu, Xinyi Zhang, WU Hao, Songying Qu, Fatwa F. ABDI
3	0027	In-Situ Formation of NiFe Coordination Layers on $BiVO_4$ for Boosting Photoelectrochemical Water Splitting	Chuang Kai Jie	National Taipei University of Technology	Lu-Yin Lin, Chuang Kai Jie
4	0083	Fabrication of 2D/3D Perovskite Heterostructure Films via Aqueous Lead Nitrate Precursors	Kerstien Eunike Rupidara	National Taiwan University of Science and Technology	Kerstien Eunike Rupidara, Tzu-Sen Su
5	0105	Manipulating Phosphorus-Doped Cobalt-Iron Oxide Heterojunction Photoanode for Photoelectrochemical Water Oxidation	Zher Yu You	National Taipei University of Technology	Zher Yu You, Lu Yin Lin
6	0153	Visible-Light-Driven Degradation of Organic Dyes Using Spinel $CoCr_2O_4$ Prepared via Hydrothermal Method	YuHao Chen	Institute of Science Tokyo	YuHao Chen, Tomoyuki KURIOKA, Chun-Yi Chen, Yung-Jung Hsu, Masato Sone, Tso-Fu Mark Chang, Xinyu Jin
7	0169	Single-Crystal Precursor Engineering for Enhanced Performance and Stability in $MAPbI_3$ Perovskite Solar Cells	Shafna Kunnathum Peedika	National Tsing Hua University	Shafna Kunnathum Peedika, Tzu-Chien Wei
8	0200	Efficient Ta_3N_5 Photoanodes via Interface Engineering of Bixbyite-Type Ta_2N_3 Precursors	Chia-Wei Chang	National Taiwan University	Chia-Wei Chang, Chang-Ming Jiang
9	0237	Morphology-Controlled Tube-Array PEDOT-MeOH Films for High-Performance Photoelectrochromic Devices	Ya-Lun Wu	National Taipei University of Technology	Ya-Lun Wu, Lin-Yu Chang

(C) Basic Electrochemistry & Electroplating

#	Abstract No.	Title	Presenter	Institution / Organization	Authors
1	0244	Twin spacing manipulation of (111)-oriented nanotwinned copper via aeration flow control in a high-speed direct-current electroplating system with thiol organic additives	H. Tsou	National Tsing Hua University	H. Tsou, Hsiang-Sheng Wei, Chi-Chang Hu
2	0180	Tuning the Interlayer Spacing of $Ti_3C_2T_x$ MXene via Cation-Sized Ionic Liquids for Enhanced Electrochemical Energy Storage	Jeremiah Hao Ran Huang	National Cheng Kung University	Jeremiah Hao Ran Huang, I-Wen Peter Chen

(C) Basic Electrochemistry & Electroplating

#	Abstract No.	Title	Presenter	Institution / Organization	Authors
3	0201	Design Graphene Quantum Dots modified CuFe Prussian Blue Analogues for Highly Sensitivity Nitrate Sensors	Jing-Ju Ho	National Taiwan University of Science and Technology	Chieh Li, Mia Rinawati, Kuan-Jung Chen, Min-Hsin Yeh, Pin-Hsuan Lin, Jing-Ju Ho
4	0196	Molecularly Dispersed Zinc on Graphene Quantum Dots as an Efficient Electrocatalyst for the Two-Electron Oxygen Reduction to Hydrogen Peroxide	Kuan-Ling Liu	National Taiwan University of Science & Technology	Kuan-Ling Liu, Tzu-Ting Liu, Mia Rinawati, Min-Hsin Yeh
5	0113	Mo-Modified High Entropy Prussian Blue analogues as a Highly Efficient Cathode Material for Water Splitting	Ping-Chen Shi	National Taipei University of Technology	Ping-Chen Shi, Ling-Yu Chang
6	0215	Direct Hydrogen Peroxide Formation Induced by Contact Electrification at the Water–Solid Interface and Its Role in Silver Nanoparticle Synthesis	Po-Rong Lin	National Taiwan University of Science and Technology	Min-Hsin Yeh, Po-Rong Lin
7	0144	Morphologies Control of Electrodeposited Polypyrrole in Supercritical Carbon Dioxide and Water Emulsion with Various Volume Ratios	Punvinai Vinaisurtern	Institute of Science Tokyo	Punvinai Vinaisurtern, Tomoyuki Kurioka, Tso-Fu Mark Chang, Masato Sone
8	0149	Mechanistic Insights into Electrochemical Growth of $Cu_3(HHTP)_2$ Thin Films: Unraveling Dual-Site Nucleation and Potential-Governed Morphology	Sarin Sajjadu Krishna	National Tsing Hua University	Sarin Sajjadu Krishna, Vidya Kattoor, Kala Kannankutty, Tzu Chein Wei
9	0183	Synthesis of Imprinted Poly(ENA-co-EGDMA) Modified Au Electrode for Determination of Urinary Uric Acid	Sheng-Fu Wu	National Cheng Kung University	Sheng-Fu Wu, Mei-Jywan Syu
10	0192	Ultrasensitive Electrochemical Oxalic Acid Sensors Based on PEDOT-Modified Screen-Printed Carbon Electrodes by Using Multiple-Pulse Amperometric Detection	Sheng-Shin Wu	Tunghai University	Sheng-Shin Wu, Yesong Gu, Ching-Chou Wu
11	0109	Charge Storage and Transport in Electronic, Ionic, and Mixed Conductors	Shu-Han Chen	National Taiwan University	Shu-Han Chen, Chia-Chin Chen
12	0085	ZIF-8-Derived ZnFe–LDH and ZnFe–Phosphide Materials as Efficient Electrocatalysts for Water Splitting	Shun-Feng Kuan	National Taipei University of Technology	Shun-Feng Kuan, Lu-Yin Lin
13	0044	Magnetic Field-Driven Spin Polarization in Co-Doped MoS_2 for Efficient N_2 to NH_3 Conversion	Tsung-Min Tsai	National Taipei University of Technology	Tsung-Min Tsai, Yang-Sheng Lu, I-Yu Cheng, Chao-Yao Yang, Hsin-An Chen, Shao-Sian Li
14	0253	Confinement-Driven Hydrogen Evolution Reaction on Gold Surface	Tzu-Hsuan Huang	National Taiwan University	Tzu-Hsuan Huang, Valentina Wieser, Dominik Dworschak, Hsiu-Wei Cheng

(C) Basic Electrochemistry & Electroplating

#	Abstract No.	Title	Presenter	Institution / Organization	Authors
15	0199	Molecular Fe Conjugated F-doped Graphene Quantum Dots Decorated Carbon Nanotubes as a Bifunctional Electrocatalyst for High Value-added Rechargeable 2e⁻ ORR/Zn–Air Battery	Yu-Hua Chen	National Taiwan University of Science and Technology	Yu-Hua Chen, Tzu-Ting Liu, Sofiannisa Aulia, Mia Rinawati, Min-Hsin Yeh
16	0156	Engineering Porous Nanofiber Structures via Chaotropic Salt Inclusion for Enhanced Organic Electrochemical Transistor Performance	Yi-Hsaun Tung	National Cheng Kung University	Yi-Hsaun Tung, Tzu-Yen Huang, Yan-Cheng Lin
17	0198	TiO_2/g-C_3N_4 Heterostructure enhanced PVDF for High-performance Wearable Triboelectric Pressure Sensors	Yin-Chun Chen	National Taiwan University of Science and Technology	Yin-Chun Chen, Mia Rinawati, Min-Hsin Yeh, Yen-Shuo Chiu
18	0119	A Scalable Simulation Framework for Die-Scale Prediction of Copper Pillar Co-planarity in Wafer-Level Packaging	Yu-Cheng Kuo	National Cheng Kung University	Yu-Cheng Kuo, Hong-Kang Tian
19	0275	Fe Molecular Catalysts immobilized Graphene Quantum Dot for Hydrogen Evolution Reaction in Alkaline Water Splitting	Zhi-Yu Jiang	National Taiwan University of Science and Technology	Zhi-Yu Jiang, Mia Rinawati, Ling-Yu Chang, Wei-Nien Su, Min-Hsin Yeh

(D) Conversions

#	Abstract No.	Title	Presenter	Institution / Organization	Authors
1	0013	A hierarchical transparent nanostructured bifacial photocatalyst synthesized with hydrogenated titanium dioxide nanotubes and sculptured nickel oxide thin film for enhanced CO_2 conversion	Tarek Fawzi	National Sun Yat-Sen University	Tarek Fawzi, Xu Teng Ke, Hsueh Chien Liu, Hyeonseok Lee
2	0063	Spatial Confinement Effect of SnO_2 Nanospheres Catalysts Enables Ampere-Level CO_2 Reduction to Formic Acid and Artificial Photosynthesis system	Chi Kang	National Yang Ming Chiao Tung University	Chi Kang, Sung-Fu Hung*,
3	0068	One-dimensional Ag Nanowire for Industrial Electrocatalytic Carbon Dioxide Reduction to Carbon Monoxide	Shuo-Peng Lin	National Yang Ming Chiao Tung University	Shuo-Peng Lin, Sung-Fu Hung
4	0097	Electrodeposited Cu/Polyaniline Composites as High-Performance Glucose Catalytic Electrodes	Runze Huang	Institute of Science Tokyo	Runze Huang, Tomoyuki Kurioka, Chun-Yi Chen, Hwai En Lin, Yung-Jung Hsu, Tso-Fu Mark Chang, Masato Sone
5	0127	Predicting Optimal OER Activity of 2D Bimetallic Metal–Organic Frameworks with Varying Metal Center Combinations Using First-Principles Calculations	Kuan-Lun Chen	National Cheng Kung University	Hong-Kang Tian, Kuan-Lun Chen

(D) Conversions

#	Abstract No.	Title	Presenter	Institution / Organization	Authors
6	0146	Boosting Acidic OER: Zn and Sn Synergy Unlocks High-Performance Ru Catalysts	CHIEN YU CHEN	National Tsing Hua University	CHIEN YU CHEN, Lu-Yu Chueh, Yung-Tin Pan
7	0155	High-Performance and Long-Lasting PEM Water Electrolysis Anode via Strategic Catalyst Layer Positioning	Yu Wei Hsu	National Tsing-Hua University	Yu Wei Hsu, Hsiang-I Chang, Yung-Tin (Frank) Pan
8	0163	In situ visualization of local electrochemical activity at low-dimensional electrocatalysts	Septia Kholimatussadiah	National Taiwan University	Septia Kholimatussadiah, Mohammad Qorbani, Kuei-Hsien Chen, Li-Chyong Chen
9	0181	Nickel-based Porous Metal-organic Materials for Carbon Dioxide Adsorption and Catalyzed Electrochemical Reduction of Carbon Dioxide	Ching-yu Chen	National Cheng Kung University	Mei-Jywan Syu, Ching-yu Chen, Pei-Cheng Lin
10	0209	Unleashing the potential of capacitive deionization via surface engineering of Ti_3C_2 MXene nanosheets by Mo_{132} polyoxometalate (Mo_{132}-MX) for ammonium capture	Van Thanh Nguyen	National Tsing Hua University	Van Thanh Nguyen, Ruey - an Doong

Poster Session and Poster Competition

Poster Session and Student Poster Competition

About Poster

1. Poster format: A0 portrait format (1189 mm high × 841 mm wide).
2. Hang your poster: before 9:00 AM on the date of presentation.
3. Poster sessions: from 12:00 to 14:00 on each date; please check the program.
4. Student poster competition: from 12:45 to 14:00 on each date.
5. The poster presentation and Q&A discussion are all in English.
6. Location: 2F&3F, Department of Chemical Engineering, National Cheng Kung University.
7. Remove your poster: Please remove your poster by yourself after the poster session on each date at the latest by 16:30.

Topic

(A) Batteries and Storage Devices
(B) Photoelectrochemistry & Solar Cells
(C) Basic Electrochemistry & Electroplating
(D) Conversions
(E) Industry and management

Require Registration and Payment

1. Registration and payment: Each presenter should complete the registration and payment for the Conference.
2. For student poster competition, each presenter must show up in front of your poster during **12:45-14:00** and explain your work to the referees.

Best Poster Awards

1. Join the Closing ceremony: Awards will all be rewarded in the closing ceremony.
2. Closing Ceremony: at 17:40, November 2, 2025 (Sunday).
3. Certificate of Merit: Please make sure all your personal information is correct on-site.

November 1, Saturday (12:00-14:00)

"-S": Student poster competition

Poster Session (A) Batteries and Storage Devices

#	Abstract No.	Title	Presenter	Institution / Organization	Authors
A1	0014-S	Formation of An Ultrathin Li4Ti5O12 Interlayer on Garnet Solid-State Electrolytes via ALD TiO2 for Enhanced Electrochemical Stability and Performance	Chang Chia Yu	National Sun Yat-sen University	Chang Chia Yu, Wang Chih Chieh
A2	0033-S	Ordered Macro–Microporous ZIF-67 derived composite for electrochemical application	HUNG-HSIEN WU	National Yunlin University of Science and Technology	Pei-Hsin Young, HUNG-HSIEN WU
A3	0034-S	Synthesis of Hierarchical Porous Ni-SOM-ZIF-8 Derived Metal Oxides for Electrochemical Application	Fu-Yao,Xu	National Yunlin University of Science and Technology	Fu-Yao,Xu, Christine (Pei-Hsin) Young
A4	0040-S	Study on the mechanism of the BiOCl cathode in the chloride-ion battery	Pandeeswari Jayaraman	Mingchi University of technology	Pandeeswari Jayaraman, Masashi Kotobuki
A5	0069-S	Enhanced Lithium–Sulfur Battery Catholytes Enabled by Arene-Assisted Lithium Dissolution for High Sulfur Solubility and Long Cycle Life	Feng-Chieh Chou	National Yang Ming Chiao Tung University	Feng-Chieh Chou, Ngoc Long Le, Yu-Sheng Su
A6	0076-S	Dual-Salt Polymer and LATP Ceramics Synergy for Superior Solid-State Li-Na Hybrid ion Batteries	Jenisha Gunamony	Ming Chi University of Technology	Masashi Kotobuki, Jenisha Gunamony
A7	0082-S	Preparation of Zinc–Manganese Oxide/Carbon Nanocomposite Electrodes on Electrochemical Performance for Supercapacitors	Jia-Jun Ye	National United University	Jia-Jun Ye, Han-Wei Chang
A8	0126-S	Recovery of Nickel from Waste NFM111 Cathodes of Sodium-Ion Batteries	Ching-Yu Hou	National Chung Hsin University	Ching-Yu Hou, Fan-Wei Liu
A9	0130-S	In Situ Synthesized Supramolecular Organic Network/Carbon Nanotubes Composite as Sustainable Cathode Material for Lithium-ion Batteries	Hao-Wei Chang	National Cheng Kung University	Hao-Wei Chang, Watchareeya Kaveevivitchai
A10	0133-S	Closed-Loop Recycling and Recovery of Vanadium Cathodes from Waste Aqueous Zinc-Ion Batteries	Hsing-Kai Tseng	National Chung Hsing University	Hsing-Kai Tseng, Fan-Wei Liu
A11	0135-S	Enhancing Zinc-Ion Battery Performance via Additive Engineering in Amide-Based Deep Eutectic Solvent Electrolytes	Ming-chin Hsieh	National Tsing Hua University	Ming-chin Hsieh, Shih-Ming Lin, Yu-Ting Chen, Bing-Ni Gu, Yu-Lun Chueh
A12	0139-S	Performance Optimization of Mechanochemically Synthesized Na3PS4-xOx Glassy Solid Electrolyte for Na-ion Batteries	Sen-Ping Hu	National Cheng Kung University	Watchareeya Kaveevivitchai, Sen-Ping Hu
A13	0145-S	Synergistic Pore Design in Sulfur/Carbon Composite as cathode materials for Next-Generation Lithium–Sulfur Batteries	Ching-Lun Chen	National Cheng Kung University	Ching-Lun Chen, Sheng-Heng Chung

November 1, Saturday (12:00-14:00)

Poster Session (A) Batteries and Storage Devices

A14	0177-S	Enhancing Thermal Stability in All-Vanadium Redox Flow Batteries through Electrolyte Additives	Cen-Fang Cheng	National Tsing Hua University	Cen-Fang Cheng, Hong-Yu Lin, Jui-Hsiung Huang, Han-Yi Chen
A15	0185-S	Synthesis Optimization of $LiTa_2PO_8$ for Enhanced Lithium-Ion Conductivity	miki shibasaki	Nagoya institute of Technology	miki shibasaki, hayami takeda, masanobu nakayama
A16	0187-S	Electrochemical Behavior and Charge Storage Mechanism of NiCo@3D-Ni for High-Performance Supercapacitors	Chia-Hsiang Lee	National Chung-Hsing University	Chia-Hsiang Lee, Han-Wei Cheng, Yu-Chen Tasi, Yung-Chuan Tseng, Wei-Lu Wu, Sheng-Han Zheng
A17	0230-S	Novolak-Derived Hard Carbon Negative Electrodes for Lithium-Ion Batteries: Closed Pore Engineering via Cross-linking Density of Precursors	Liang-Chieh Tseng	National Tsing Hua University	Liang-Chieh Tseng, Yu-Chun Chen, Yi-Cheng Liao, Chi-Chang Hu
A18	0231-S	Achieving Efficient Sodium Plating and Stripping Performances with a Carbon-Coated Layer	Sheng-Ming Chang	Ming Chi University of Technology	Sheng-Ming Chang, Tai-Feng Hung
A19	0234-S	Dual Filler(MOFs/AL-LLZO) Double Layer Solid State Electrolyte Based on PVDF-HFP	Ming Hui Wang	Ming Chi University of Technology	Ming Hui Wang, Chun-Chen Yang
A20	0242-S	A Zero-Strain and Self-Healing Anode Material for All-Solid-State Sodium Batteries	Qi-Hong Chen	National Cheng Kung University	Qi-Hong Chen, Shin-kang Lin
A21	0249-S	Improving lithium plating and stripping on (220)-orientation nanotwinned copper foils for lithium metal batteries	Hsiang-Sheng Wei	National Tsing Hua University	Hsiang-Sheng Wei, Hao-Yu Ku, Ai-Ling Huang, Hsu Tsou, Chi-Chang Hu
A22	0254-S	The Impact of Electrolyte Additives on Vanadium Redox Flow Battery Performance and Stability	Huai-Wei Pai	National Tsing Hua University	Huai-Wei Pai, Hong-Yu Lin, Jui-Hsiung Huang, Han-Yi Chen
A23	0077	Development and Evaluation of a High-Power Domestic Vanadium Redox Flow Battery	Chien-Hong Lin	National Atomic Research Institute	Chien-Hong Lin, Ning-Yih Hsu, Yi-Hsing Yeh, Ting-Yu Liu
A24	0087	Enhanced Mechanical Strength in Composite Polymer Electrolytes with Inorganic Nanoparticles	Keng-Hao Cheng	CPC Corporation	Keng-Hao Cheng
A25	0150	One-step Hydrothermal Synthesis of Manganese Molybdate@Cobalt Tungstate Nanosheets Hybrid as Advanced Materials for Supercapacitor Applications	Chelliah Koventhan	National Taiwan Normal University	Chelliah Koventhan, AN-Ya Lo
A26	0154	Tantalum-Modified NCMA Cathodes: Dual Functionality for Improved Structural and Interfacial Stability	Juliya Jeyakumar	Ming Chi University of Technology	Juliya Jeyakumar, Manojkumar Seenivasan, Yi-Shiuan Wu, Chun-Chen Yang
A27	0248	Porous structural Li-Na Alloy Anode with Mg doping in the Lithium Metal Batteries	Ciou-Ren Lee	National Cheng Kung University	Ciou-Ren Lee, Chang-Tsun Lee, Pin-Ching Huang, Pei-I Wei, Ying-Da Luo, Yu-Hsiu Chang, Shih-Kang Lin

November 1, Saturday (12:00-14:00)

Poster Session (A) Batteries and Storage Devices

A28	0264	Effect of Li/TM variation on High Nickel Cobalt Less NCMA89 Cathodes via Solid State Reaction	Kuan-Zong Fung	National Cheng Kung University	Ying-Yi Chen, Kuan-Zong Fung, Shu-Yi Tsai
A29	0266	Structural and Electrochemical Impacts of Lithium Substitution in P2-Type Na0.67MnO2 Cathode Materials for Sodium-Ion Batteries	JHUO,SYUN-YA	National Cheng Kung University	JHUO,SYUN-YA, Kuan-Zong Fung, Shu-Yi Tsai
A30	0272	Fabrication of High-Mass-Loading Ni-Rich Cathodes Using Electrophoretic Deposition on 3D Structured Current Collectors	Chun-Ying Chen	National Cheng Kung University	Chun-Ying Chen, Kuan-Zong Fung, Shu-Yi Tsai

Poster Session (B) Photoelectrochemistry & Solar Cells

#	Abstract No.	Title	Presenter	Institution / Organization	Authors
B1	0036	Evaluation of the optoiontronic dynamics at photoelectrode/electrolyte interface using electrochemical impedance spectroscopy	Kana Ueda	Tokyo University of Science	Kana Ueda, Mutsumi Sugiyama
B2	0050	Decoration of Novel Molybdenum-based Bimetallic Oxide on Bismuth Vanadate as Photoelectrochemical Catalysts for Efficient Water Oxidation	Chang-Yan Hsieh	National Taipei University of Technology	Chang-Yan Hsieh, Lu-Yin Lin
B3	0100	Surface Plasmon-Assisted Antimony Nanoparticle-Based Photoelectrochemical Sensor for H2O2 Detection	Chih Kuang, Lee	National Dong Hwa University	Chih Kuang, Lee, Yu Kuei, Hsu

Poster Session (C) Basic Electrochemistry & Electroplating

#	Abstract No.	Title	Presenter	Institution / Organization	Authors
C1	0035-S	Metal–Organic Framework-Derived Bimetallic Oxides as Electrocatalysts for Water Splitting	MU-HAO-TSAI	National Yunlin University of Science and Technology	MU-HAO-TSAI, Pei-Hsin Young
C2	0045-S	Preparation of transition metal molybdenum carbide on three-dimensional porous nickel foam composite as electrode material for hydrogen evolution reaction	Jia-Yu Li	National Chung Hsing University	Yu-Chen Tsai, Han-Wei Chang, Jia-Yu Li, Chao-Pei Chen
C3	0046-S	Preparation of γ-graphyne for Electrochemical Sensor Applications	Mei-I-Wu	National Chung Hsing University	Mei-I-Wu, Yi-Chun Lin, Han-Wei Chang, Yu-Chen Tsai
C4	0065-S	Iron-Modified Two-Dimensional Metal–Organic Framework as an “Initiator” for Synthesizing Polypyrrole toward Electrochemical Dopamine Sensing.	Hsin-Ya Tsai	National Cheng Kung University	Hsin-Ya Tsai, Cheng-Hui Shen, Meng-Dian Tsai, Yu-Na Chang, You-Chi Liang, Kuan-Chu Wu, Chung-Wei Kung

November 1, Saturday (12:00-14:00)

Poster Session (C) Basic Electrochemistry & Electroplating

C5	0121-S	2D Continuum Modeling with a Kinetic Degradation Framework for Predicting the Long-Term Stability of OER Electrocatalysts	Bing-Xun Zhong	National Cheng Kung University	Bing-Xun Zhong, Hong-Kang Tian
C6	0165-S	Selective Dispersion of Semiconducting Single-Walled Carbon Nanotubes Using Polythiophene Derivatives for Nanohybrid Channel Materials in Organic Electrochemical Transistors	Guo-Hao Jiang	National Cheng Kung University	Guo-Hao Jiang, Shang-Wen Su, Yan-Cheng Lin
C7	0176-S	Engineered Defect Sites in Mo2TiC2Tx MXene Enable Strong Platinum Anchoring for Enhanced Electrocatalytic Activity	Bo Heng Huang	National Cheng Kung University	Bo Heng Huang, I-Wen Peter Chen
C8	0186-S	Deciphering π–π Interactions in Binder-Free Flexible B-Doped Graphene Paper for High-Performance Supercapacitor Applications	Jia-Yu Ji	National Cheng Kung University	Jia-Yu Ji, I-Wen Peter Chen
C9	0207-S	High-capacitance Tungsten Oxide Composite Film for High-Performance Dye-Sensitized Photo-Rechargeable Ion Capacitors	Kai-Xiang Shi	National Taiwan University of Science and Technology	Kai-Xiang Shi, Li-Xin Huang, An Hsueh, Mia Rinawati, Min-Hsin Yeh
C10	0208-S	Highly Selective Nitrate Sensing at Trace Levels in Neutral Medium Using a Synergistic Cu Nanowires/Fe Graphene quantum dots.	Jung-Hsin Jen	National Taiwan University of Science and Technology	Jung-Hsin Jen, Chieh Li, Pin-Hsuan Lin, Kuan-Jung Chen, Mia Rinawati, Min-Hsin Yeh
C11	0250-S	Highly efficient electroplating of (220)-oriented nano-twinned copper in methanesulfonic copper baths	Chia-Yen Chang	National Tsing Hua University	Chia-Yen Chang, Hsiang-Sheng Wei, Chi-Chang Hu
C12	0297-S	Engineering Cobalt-Based Bimetallic Compounds via NH4F-Directed ZIF67 Transformation for Battery–Supercapacitor Hybrids with Enhanced Energy Storage Performance	I-An Lu	National Taipei University of Technology	I-An Lu, Lu-Yin Lin
C13	0158	Using the Proton/Hydrogen Redox Couple for Thermogalvanic Waste Heat Harvesting	Thanaphoom Yindeesuk	National Taiwan University	Thanaphoom Yindeesuk
C14	0202-S	Localized Microstrain-Induced Lattice Distortion in High-Entropy Prussian Blue Analogues via Graphene Quantum Dots for Enhanced Alkaline Hydrogen Evolution Electrocatalysis	Chen Hsu	National Taiwan University of Science and Technology	Chen Hsu, Yu-Ru Liu, Mia Rinawati, Ling-Yu Chang, Wei-Nien Su, Min-Hsin Yeh

November 1, Saturday (12:00-14:00)

Poster Session (D) Conversions

#	Abstract No.	Title	Presenter	Institution / Organization	Authors
D1	0048-S	Enhanced Hydrogen Evolution in Alkaline Seawater Using Pulsed-Electrodeposited P-Doped NiMo Alloy	Berhanu Telay Mekonnen	National Taiwan University of Science and Technology	Berhanu Telay Mekonnen, Chen-Hao Wang, Guan-Cheng Chen
D2	0052-S	Designing Binary Transition Metal Alloys and Carbon Nanotube Composites for Urea Electrolysis	Ming-Jie Zhang	National Yunlin University of Science and Technolog	Chih-Ning Hsieh, Tzu-Ho Wu, Ming-Jie Zhang
D3	0056-S	Non-Equivalent Iodide Ions Boosting the Bismuth-Based Catalysts to Achieve Industrial Carbon Dioxide Reduction to Formic Acid	Ming- Hsuan Li	National Yang Ming Chiao Tung University	Sung-Fu Hung, Ming- Hsuan Li
D4	0057-S	Metallic Copper Electrocatalysts on Aerogel-Modified Hydrophobic Carbon Paper Enables Efficient CO_2 Electroreduction	Ya-Ching Chang	National Yang Ming Chiao Tung University	Ya-Ching Chang, Sung-Fu Hung
D5	0062-S	Electronic Structure Engineering of Nickel Single-Atom Catalyst by Phosphorus for Efficient Electrocatalytic CO2 Reduction Reaction in a Proton-Rich Microenvironment	Mengstu Etay	Academia Sinica	Mengstu Etay, Li-Chyong Chen, Kuei-Hsien Chen
D6	0066-S	One-dimensional Ag Nanowire for Industrial Electrocatalytic Carbon Dioxide Reduction to Carbon Monoxide	Shuo-Peng Lin	National Yang Ming Chiao Tung University	Shuo-Peng Lin, Sung-Fu Hung
D7	0067-S	Spatial Confinement Effect of SnO_2 Nanospheres Catalysts Enables Ampere-Level CO_2 Reduction to Formic Acid and Artificial Photosynthesis system	Chi Kang	National Yang Ming Chiao Tung University	Chi Kang, Sung-Fu Hung
D8	0104-S	Enhanced Electrochemical CO2 Reduction to HCOOH via Mn-Doped Cu6Sn5 Catalysts Prepared by Electrodeposition	Dang Manh Phuc	Academia Sinica	Dang Manh Phuc, Kuei-Hsien Chen, Li-Chyong Chen, Chih-Hao Lee
D9	0162-S	Can Phase-Change Electrolytes Boost Thermogalvanic Efficiency?	Ting-Ruan,Liao	National Taiwan university	Ting-Ruan,Liao, Cong-Siang Huang, Leigh Aldous
D10	0164-S	Microwave-Assisted Waste PET for Dual Electrochemical Applications in Catalyst and Fuel Development	Wei-Chin Chien	National Taiwan University of Science and Technology	Tzu-Sen Su, Wei-Chin Chien
D11	0179-S	Ce-MOF Derived Phosphide Catalysts for Overall Water Splitting Application	Yin-An Yang	National Cheng Kung University	Yin-An Yang, I-Wen Peter Chen
D12	0251-S	Ligand Precoordination and Self-Sacrificing Template Enable Accessible Asymmetric Ni–N–C Sites for High-Rate CO_2-to-CO Conversion	Osama Nasr	National Yang Ming Chiao Tung University	Osama Nasr, Varad Modak, Mengstu Etay, Ching-An Chang, Li-Chyong Chen, Kuei-Hsien Chen

November 1, Saturday (12:00-14:00)

Poster Session (E) Industry & Management

#	Abstract No.	Title	Presenter	Institution / Organization	Authors
E1	0070	Microwave Chemistry Enables Green and Rapid Polishing of SiC	Li-Wen Wang	National Central University	Li-Wen Wang, Chun-Huang Wu, Hsueh-Wen Chang, Zhang-Wan Wu, Ai-Hsi Hsu, Benjamin Tien-Hsi Lee

November 2, Sunday (12:00-14:00)

"-S": Student poster competition

Poster Session (A) Batteries and Storage Devices

#	Abstract No.	Title	Name	Institution / Organization	Authors
A31	0011-S	Highly Asymmetrically Configured Single Atoms Anchored on Flame-Roasting Deposited Carbon Black as Cathode Catalysts for Ultrahigh Power Density Zn-Air Batteries	Yu-Chieh Ting	National Tsing Hua University	Yu-Chieh Ting, Chih-Chieh Cheng, Fan-Yu Yen, Guan-Ru Li, Shao-I Chang, Chih-Heng Lee, Hsin-Yi Tiffany Chen, Shih-Yuan Lu
A32	0032-S	MoS_2@CoS_2 derived from ZIF-67 for supercapacitors	Yu-Xuan Lai	National Yunlin University of Science and Technology	Yu-Xuan Lai, Pei-Hsin Young
A33	0051-S	Electroless Nickel/Tin Plating Surface Modification of Sulfur to Enable High Sulfur Loading in Lithium–Sulfur Batteries	Yu-Pei Chiang	National Cheng Kung University	Yu-Pei Chiang, Sheng-Heng Chung
A34	0053-S	Pore Engineering of Zirconium-Based Metal–Organic Framework for In-Situ Polymerization of Aniline toward High-Performance Supercapacitors with Superior Rate Capability	Tsan-Yu Chuang	National Cheng Kung University	Tsan-Yu Chuang, Chen-Hui Shen, Hsin-Ya Tsai, You-Chi Liang, Kuan-Chu Wu, Chung-Wei Kung
A35	0079-S	Studying the effects of electrolyte additives on the Mn^{4+}/Mn^{2+} redox behaviors in Zn-MnO_2 aqueous batteries	Syu-Jin Liao	National Yunlin University of Science and Technology	Syu-Jin Liao, Tzu-Ho Wu, Cheng-Han Cai
A36	0178-S	High-Yield One-Pot Synthesis of Phosphorus-Grafted MXene: Unveiling Phosphate–MXene Interactions through In Situ Structural Monitoring for Energy Storage Enhancement	Yu Hsuan Chang	National Cheng Kung University	Yu Hsuan Chang, I-Wen Peter Chen
A37	0205-S	Synthesis of Inorganic Li6PS5Br Sulfides-Based Solid Electrolytes by High Energy Ball Milling for All-Solid-State Lithium Batteries	Yu Lo	Chung Yuan Christian University	Yu Lo, Yin-Chen Hsu, Wei-Ren Liu
A38	0210-S	Exploring Anisotropic Ion Conduction in Solid Polymer Electrolytes	Shun-Jhih Yang	National Taiwan University	Shun-Jhih Yang, Yu-Chi Wang, Chia-Chin Chen
A39	0223-S	Standard Coin Cell Integration for Aluminum–Sulfur Batteries via Corrosion-Resistant Coatings	Ying-Ching Yang	National Cheng Kung University	Ying-Ching Yang, Sheng-Heng Chung,
A40	0233-S	Interfacial Engineering of a Conductive and Sodiophilic Nucleation Layer for Uniform Sodium Plating and Stripping	Yi-Yang Xu	Ming Chi University of Technology	Yi-Yang Xu, Sheng-Ming Chang, Tai-Feng Hung

November 2, Sunday (12:00-14:00)

Poster Session (A) Batteries and Storage Devices

A41	0055	Reduced graphene oxide/NiO/Co_3O_4/cellulose composite film with excellent flexibility and electrochemical performance for supercapacitor electrodes	Wei Jia Wu	National University of Tainan	YANG-MING LU, Wei Jia Wu
A42	0072	Facile Synthesis of Trimetallic Compounds Based on Cobalt and Nickel with Ammonium Fluoride-Based Complex for Energy Storage Applications	Pei-Chen Kuo	National Taipei University of Technology	Lu-Yin Lin, Pei-Chen Kuo
A43	0075	Enhanced sodium-ion conductivity in doped $Na_5YSi_4O_{12}$: An electrochemical study	Mohamed M. Abdelaal	Ming Chi University of Technology	Mohamed M. Abdelaal, Vinoth Packianathan Thangam, Masashi Kotobuki
A44	0080	Development of Novel Iron Oxide/Fe-MOF Composites via In-situ Growth for High-Efficiency Battery Supercapacitor Hybrids	Yu-Min Wang	National Taipei University of Technology	Yu-Min Wang
A45	0101	A Study of Developing the Structural, Thermal, and Electrochemical Properties of Plasticized Chitosan/ZnO-based Nanocomposite Polymer Electrolyte membranes	Qamber Ali	Chulalongkorn University	Qamber Ali, Kanoktip Boonkerd
A46	0102	Electrochemical Performance of $BiVO_4$ Nanostructures as Photo Supercapacitor Electrode Material by Crystal Facet and Morphology Regulation Using pH-dependent	Muhammad Asim Abbas Khan	Chulalongkorn University	Muhammad Asim Abbas Khan, Prasit Pattananuwat
A47	0110	Can Thermogalvanic Cells Be Used to Co-Generate Electricity During Heat Transfer?	Pin-Ruei Li	National Taiwan University	Pin-Ruei Li, Cong-Siang Huang, Ting-Ruan Liao, Leigh Aldous
A48	0129	Enhancing the Supercapacitor Performance of β-$Ni(OH)_2$ through Co/Mn Co-doping	WEI-CHENG HUANG	National University of Tainan	YANG-MING LU, WEI-CHENG HUANG
A49	0136	Novel Design of NiS_2 and $V_3Ni(SO_4)_4 \cdot 24H_2O$ Composites with Controllable Synthetic Temperature and Duration as an Efficient Active Material for Battery Supercapacitor Hybrids	Min-Hua Tsai	National Taipei University of Technology	Min-Hua Tsai, Lu-Yin Lin
A50	0191	A synergistic ternary hydrated eutectic electrolyte strategy realizes high reversibility and high cyclability of zinc metal anodes	Ming-Hsien Lin	National Defense University	Hsiao-Chun Huang, Yu-Chun Huang, Ming-Hsien Lin
A51	0238	First-Principles Investigation of V-Doped MoO_3 Anodes for Enhanced Zn-Ion Battery Performance	Thanh Tuan Nguyen	National Cheng Kung University	Thanh Tuan Nguyen, Ngoc Thanh Thuy Tran

November 2, Sunday (12:00-14:00)

Poster Session (A) Batteries and Storage Devices

A52	0255	Investigation of the effect of SO_4^{2-},PO_4^{3-} and Zinc acetate for suppression of water evaporation, lowering of corrosiveness, and expansion of electrochemical stability window	Yu-Chun Fu	National Chung Cheng University	Yu-Xiang Huang, Yu-Chun Fu
A53	0261	Preparation of high-voltage solid-state lithium-ion batteries and measurement of electrochemical properties	Yi-Qi Chen	Yuan Ze University	Yi-Qi Chen, I-Ming Hung, Debabrata Mohanty, Meng Chiao Ku, Ting-Ya Yang, Jui-Yun Lin, Shu-Min Lin, Tzu Chi Chang, Yun-Chieh Chang
A54	0265	Suppression of Carbonate Decomposition for Better Crystallization and Microstructural Evolution of $Li_7La_3Zr_2O_{12}$ Garnet Solid Electrolytes	Kuan-Zong Fung	National Cheng Kung University	Chi-Hsiang Shih, Kuan-Zong Fung, Shu-Yi Tsai
A55	0268	Impact of Lithium Extraction on Structure and Impedance Behavior of NCM811 Cathodes	Yu-Hsuan Chen	National Cheng Kung University	Yu-Hsuan Chen, Shu-Yi Tsai, Kuan-Zong Fung
A56	0270	Synthesis of Single-Crystal Ni-Rich Layered Oxide Cathodes for Lithium-Ion Batteries	Kuan-Zong Fung	National Cheng Kung University	Cheng-Kai Huang, Kuan-Zong Fung, Shu-Yi Tsai
A57	0256-S	Selective lithium capture from brines with δ-MnO2 MXene composite with NH2 – functionalized graphene oxide through hybrid CDI	Joemer Jr Adorna	National Tsing Hua University	Joemer Jr Adorna, Keng-ku Liu, Ruey-an Doong

Poster Session (B) Photoelectrochemistry & Solar Cells

#	Abstract No.	Title	Presenter	Institution / Organization	Authors
B4	0061-S	Feasibility and Process Parameter Analysis of Using Cystine in Hydrothermal Synthesis of CZTS	Mei-Chen Lin	National Tainan University	Mei-Chen Lin, Yun-Wu Wang, Zhi-Xiang Liang, Ting-Wei Hsu, Wen-Rui Xie
B5	0086-S	Crumpled Reduced Graphene Oxide/$CsPbBr_3$ Nanoheterstructure for Efficiency Improvement in Photocatalytic CO_2 Photoreduction	Hao-Wen Tan	National University of Tainan	Hao-Wen Tan, Yuta Nishina, Chun-Hu Chen, Ying-Chih Pu
B6	0106-S	Mitigating Pinholes on Water-Processed Lead Nitrate Perovskites Film via Eco-Friendly Additive Engineering	Wen-Ting Wu	National Taiwan University of Science and Technology	Wen-Ting Wu, Tzu-Sen Su
B7	0116-S	The Effects of Shell Coating on Indium Phosphide Quantum Dots: Impact on Interfacial Charge Carrier Dynamics and Application in Photocatalytic Hydrogen Evolution	Yu-Xiang,Yu	National University of Tainan	Yu-Xiang,Yu, Ying-Chih,Pu

November 2, Sunday (12:00-14:00)

Poster Session (B) Photoelectrochemistry & Solar Cells

B8	0120-S	Ni Doping and Defects in $ZnIn_2S_4$ Photocatalysts: Insights into Piezoelectric Response and Hydrogen Evolution via Multi-scale Simulations and Machine Learning Interatomic Potentials	Wei-Xiang Zhou	National Cheng Kung University	Wei-Xiang Zhou, Ming-Yuan Hung, Jih-Jen Wu, Hong-Kang Tian
B9	0123-S	Surface Oxygen Vacancies Engineering on $BiVO_4$ Photoanodes for Enhanced Efficiency in Photoelectrochemical Glycerol Oxidation	Hsiao Po-Keng	National University of Tainan	Hsiao Po-Keng, Ying-Chih Pu
B10	0137-S	Efficiency and Stability Improvement of $BiVO_4$ via Modified with Cobalt - Manganese Oxyhydroxide (CMOH) Co-catalyst in Photoelectrochemical Water Oxidation	Yen-Lun Kung	National University of Tainan	Yen-Lun Kung, Chun-Hu Chen, Ying-Chih Pu
B11	0159-S	2D $ZnIn_2S_4$ Nanosheets Coupled with 1D SnO_2 Nano-architectures for Superior Solar-Driven CO_2 Photoconversion	Jamil K. Jadoon	National Sun Yat-sen University	Jamil K. Jadoon, Hyeonseok Lee
B12	0161-S	Sustainable Fabrication of Perovskite Solar Cells Using Recovered Lead Iodide	Jin-Wei Chang	National Chung Hsing University	Jin-Wei Chang, Yu-Kai Chen, Fan-Wei Liu, Chieh-Ting Lin
B13	0168-S	Investigation of Surface Moisture Stability in Cation-Doped $FA_xMA_{1-x}SnI_3$ Perovskites through Machine Learning Interatomic Potentials and First-Principles Calculations	Yu-Ting Tai	National Cheng Kung University	Yu-Ting Tai, Hong-Kang Tian
B14	0182-S	Recovery of Metal Iodides from Waste Polarizer Films and Lead-Acid Batteries for Refabrication of Perovskite Solar Cells	Jun An-Su	National Chung Hsing University	Jun An-Su, Yu-Kai Chen, Fan-Wei Liu, Chieh-Ting Lin
B15	0293-S	Conductive Polymers as Photo/Electrocatalysts for O_2 Reduction/H_2O_2 Production	Riku Sawada	Tohoku University	Riku Sawada, Hitoshi Kasai, Kouki Oka

Poster Session (C) Basic Electrochemistry & Electroplating

#	Abstract No.	Title	Presenter	Institution / Organization	Authors
C15	0016-S	AFM-SECM Insights into the Interfacial Reactivity of 2D TMDC Electrocatalysts	Sumangaladevi Koodathil	National Taiwan University	Sumangaladevi Koodathil, Mohammad Qorbani, Sankar Raman, Li-Chyong Chen, Kuei-Hsien Chen
C16	0024-S	Evolution of Ultrathin CoFe-Nanomesh for Oxygen Evolution Reaction: From Slit Pores to Ink-Bottle Pores	Shashank Sharma	Indian Institute of Science Education and Research Bhopal	Shashank Sharmam, Amit Paul
C17	0038-S	Enhancing the Performance of Photo-patternable Organic Electrochemical Transistors via Photocrosslinking Hydrophilic Side Chains	Yun-Cheng Guo	National Cheng Kung University	Yun-Cheng Guo, Jung-Yao Chen, Sin-Rong Huang, Gu-Hao Cai

November 2, Sunday (12:00-14:00)

Poster Session (C) Basic Electrochemistry & Electroplating

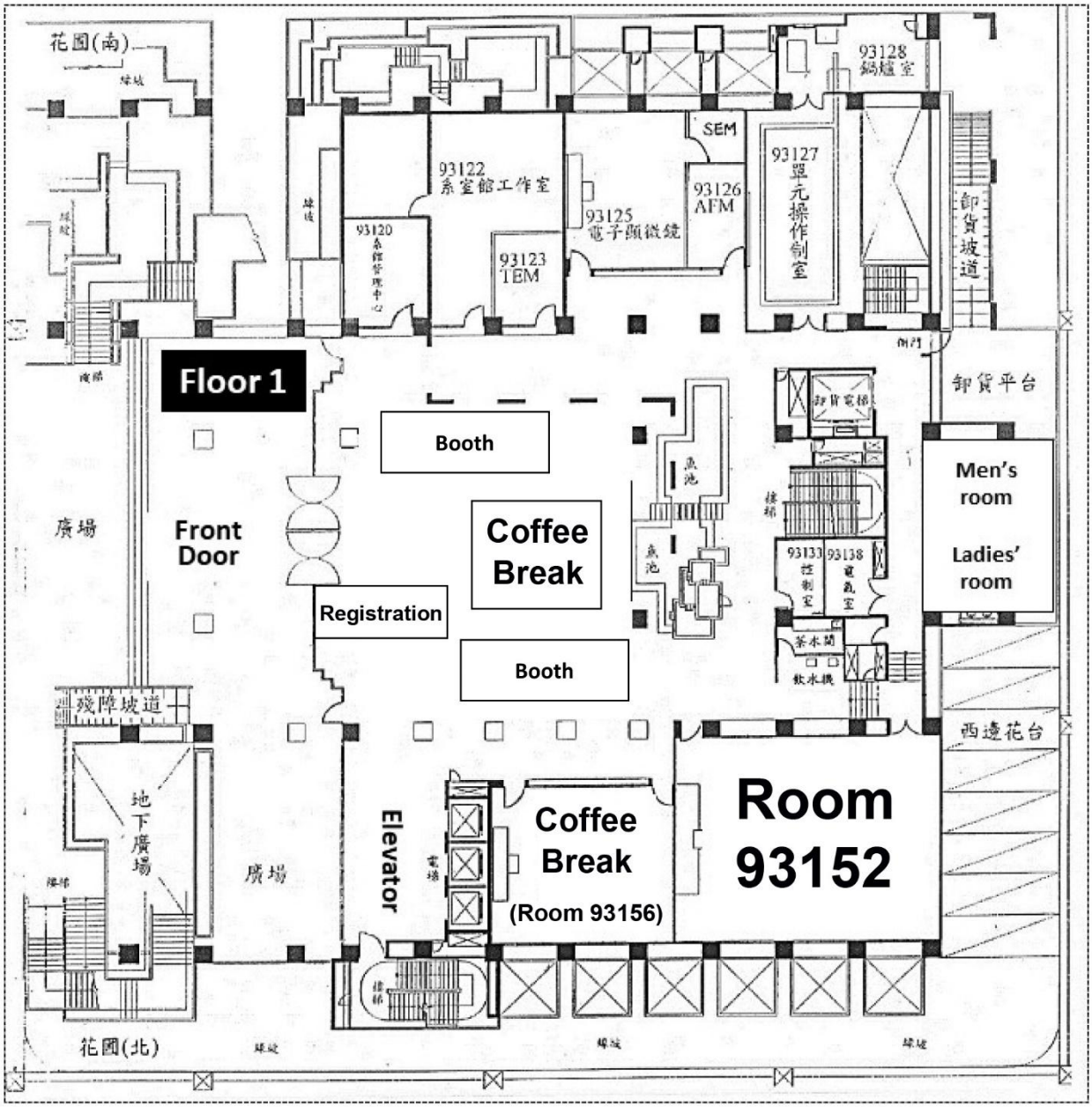
C18	0039-S	Effect of Halogen Atoms on the Electrocatalytic Activity of Iridium-Functionalized Metal–Organic Frameworks for Water Oxidation	Yu-Chi Wang	National Cheng Kung University	Yu-Chi Wang, Shang-Cheng Yang, Cheng-Hui Shen, Tzu-Hsien Yang, Chung-Wei Kung
C19	0071-S	Dual-Function Etching for SiC Thinning and Graphene Quantum Dot Synthesis	Pei-Ju Lin	National Central University	Pei-Ju Lin, Chun-Huang Wu, Rong Chen, Tien-Chiang Liu, Ai-Hsi Hsu, Benjamin Tien-Hsi Lee
C20	0099-S	Sonoelectrochemical Nitrided Graphene Nanosheets as Electrocatalysis for Hydrogen Peroxide Sensing	Shi-Zhe Chen	National Kaohsiung University of Science and Technology	Tzu-Chen Huang, Ying-Lung Chen, Shi-Zhe Chen, Chien-Liang Lee
C21	0103-S	Electrodeposited FeCoNiMoW High Entropy Alloy for Electrochemical Nitrate Reduction Reaction (NO_3RR)	Wei-Jun Lin	National Taiwan University of Science and Technology	Wei-Jun Lin, Tzu-Sen Su
C22	0141-S	A Study on the Synthesis of CuO–ZnO Nanocomposites via a Simple Aqueous Solution Plasma Process	Pei-Yu Shih	National Chung Hsin University	Pei-Yu Shih, Fan-Wei Liu
C23	0197-S	Tailoring High-Entropy Prussian Blue Analogue-Derived Multimetallic Phosphides on CNTs for Efficient Alkaline Hydrogen Evolution	Rais Fakhrirazin	National Taiwan University of Science and Technology	Rais Fakhrirazin, Yu-Ru Liu, Mia Rinawati, Wuttichai Tanmathusorachai, Ling-Yu Chang, Wei-Nien Su, Wei-Hsiang Huang, Min-Hsin Yeh
C24	0204-S	Comparing Electrodeposited Mg Layers in Phenyl- and Phenolate-Based Electrolytes for Rechargeable Mg Batteries	Yu-Chen Chen	National Tsing Hua University	Yu-Chen Chen, Ying-Chen Wu, Yu-Shan Huang, Peng-Wei Chu
C25	0258-S	Anodizing n-type Si in the Dark by Detachable pn Junction Approach	Rong Chen	National Central University	Rong Chen, Chun-Huang Wu, Hsueh-Wen Chang, Tien-Chiang Liu, Benjamin Tien-Hsi Lee
C26	0026	Plating mode of bimetallic Cu-Sn and Zn-Sn electrodes for enhancing selectivity of electrochemical denitrification toward gaseous nitrogen	Zhi-Lun Wu	National Sun Yat-sen University	Yu-Jen Shih, Zhi-Lun Wu
C27	0089	Enhancing Cu_2O Reactivity for Neutral CO_2-to-Ethylene Conversion via Pd and Ag Interfacial Promotion	Zhuo-Wen Yang	National Dong Hwa University	Zhuo-Wen Yang, Yu-Kuei Hsu
C28	0175-S	Study on Three-Dimensional Porous $MoS_2/Ti_3C_2T_x$ Heterostructure for High-Performance Non-Enzymatic Electrochemical Uric Acid Sensing	Yung-Chun Kao	National Yunlin University of Science and Technology	Yung-Chun Kao, Yun-Cih Cai, Shih-Han Wang

November 2, Sunday (12:00-14:00)

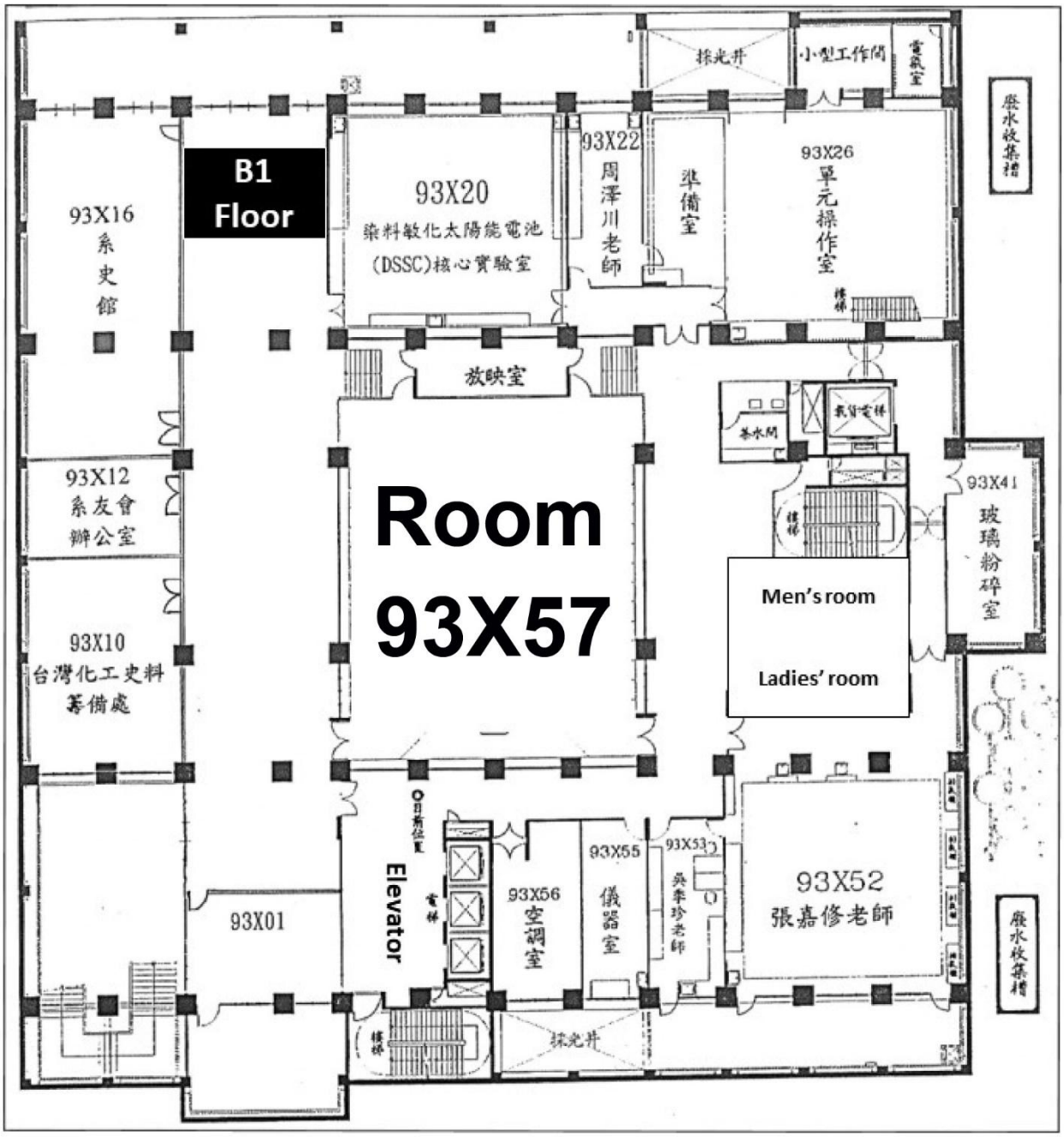
Poster Session (D) Conversions

	Abstract No.	Title	Presenter	Institution / Organization	Authors
D13	0143	Ru Nanoparticles Anchored on Graphene Oxide/$MoSe_2$ Aerogels for Synergistic Water Splitting and Pollutant Degradation	Da-Ren Hang	National Sun Yat-sen University	Pei-Chen Lee, Hui-Chun Huang, Mitch M. C. Chou, Da-Ren Hang
D14	0220	Au Nanoparticle-Modified Bi2Se3 Nanosheets for Improved Charge Dynamics and Photoelectrocatalytic Water Splitting	Da-Ren Hang	National Sun Yat-sen University	Ting-Yu Chen, Hui-Chun Huang, Mitch M. C. Chou, Da-Ren Hang
D15	0235	Machine Learning-Driven Composition Optimization of High-Entropy LDHs for Electrocatalytic OER	Chandrasekaran Pitchai	National Chung Hsing University	Chandrasekaran Pitchai, Chao-Fang Huang, Chih-Ming Chen
D16	0239	Harnessing Ni SACs on cogently designed nanofiber-based catalysts for CO_2 electroreduction	Varad Modak	Academia Sinica	Varad Modak, Osama Nasr, Prof. Li-Chyong Chen, Prof. Kuei-Hsien Chen
D17	0240	Investigation and Optimization of Conversion Processes in Modified Strontium Vanadate Oxide Anodes for Solid Oxide Fuel Cells	Shu-Yi Tsai	National Cheng Kung University	Shu-Yi Tsai, Chi-Yang Liu, Kuan-Zong Fung
D18	0285	Tuning Pd and Cu Molecular Catalysts through Pull–Push and Push–Push Pathways for Selective Chemical Valorization	Endalkachew Asefa Moges	National Taiwan University of Science and Technology	Endalkachew Asefa Moges, Bing Joe Hwang

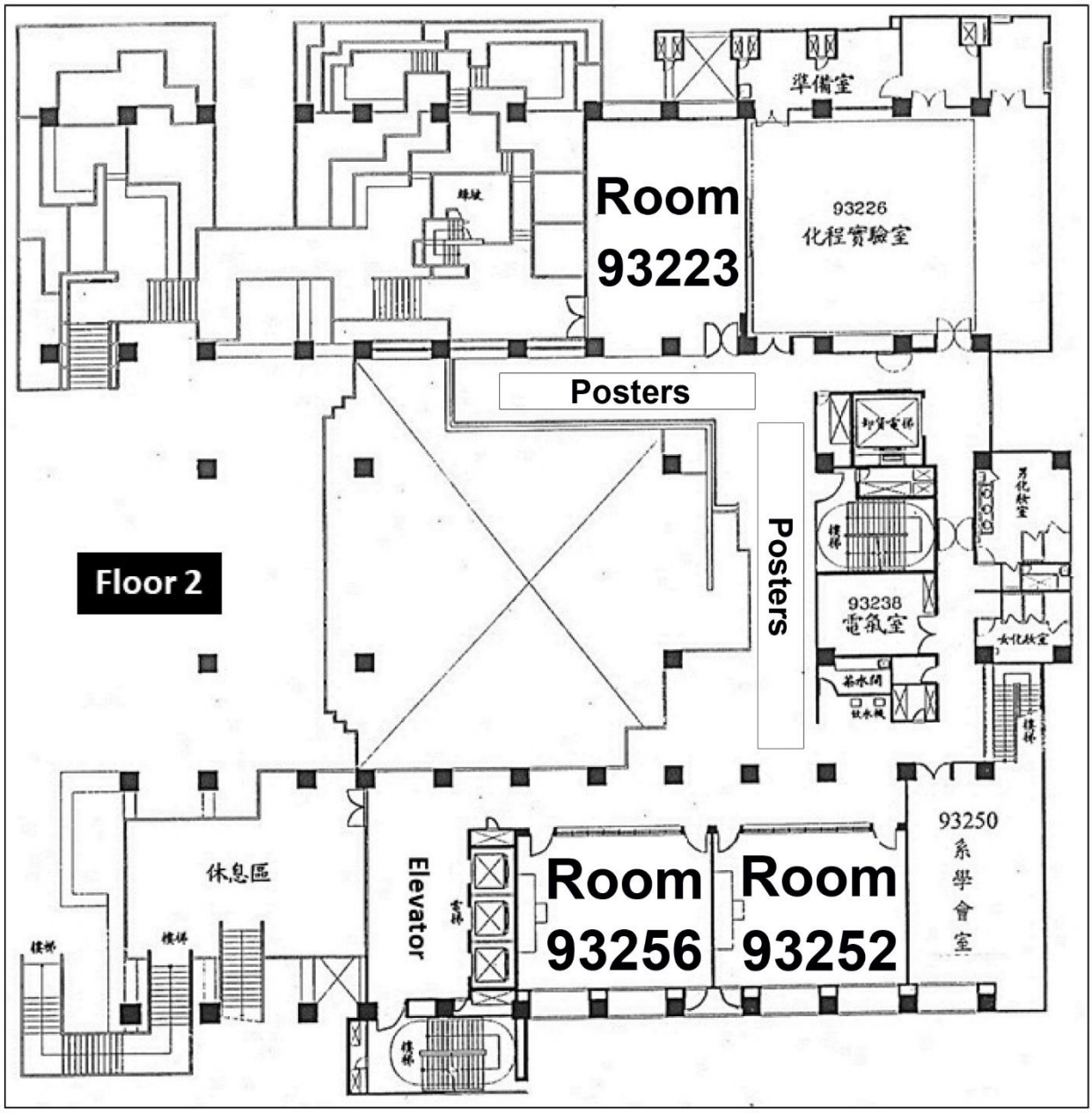
IX. Floor Plan – Floor 1



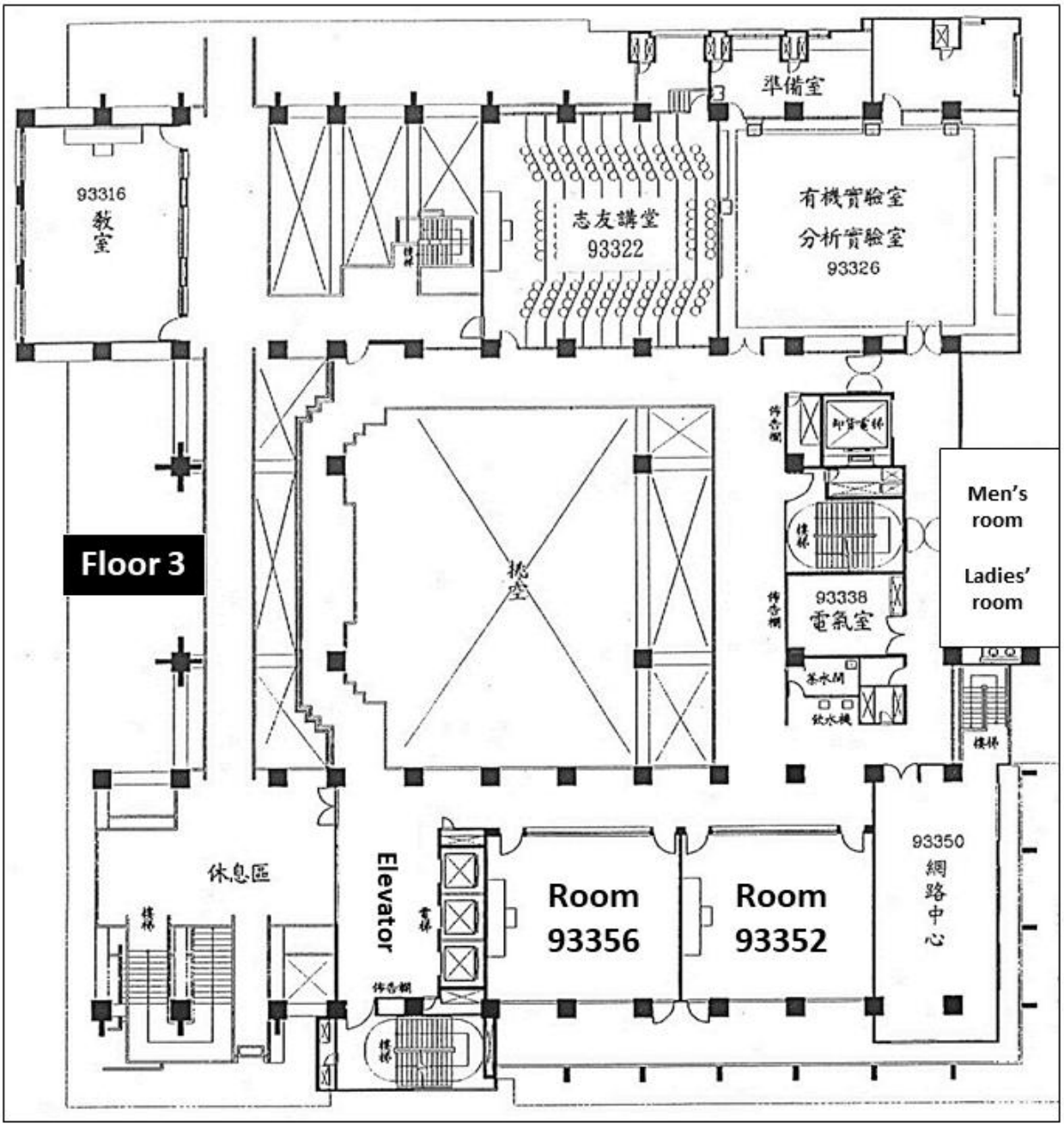
IX. Floor Plan – B1 Floor



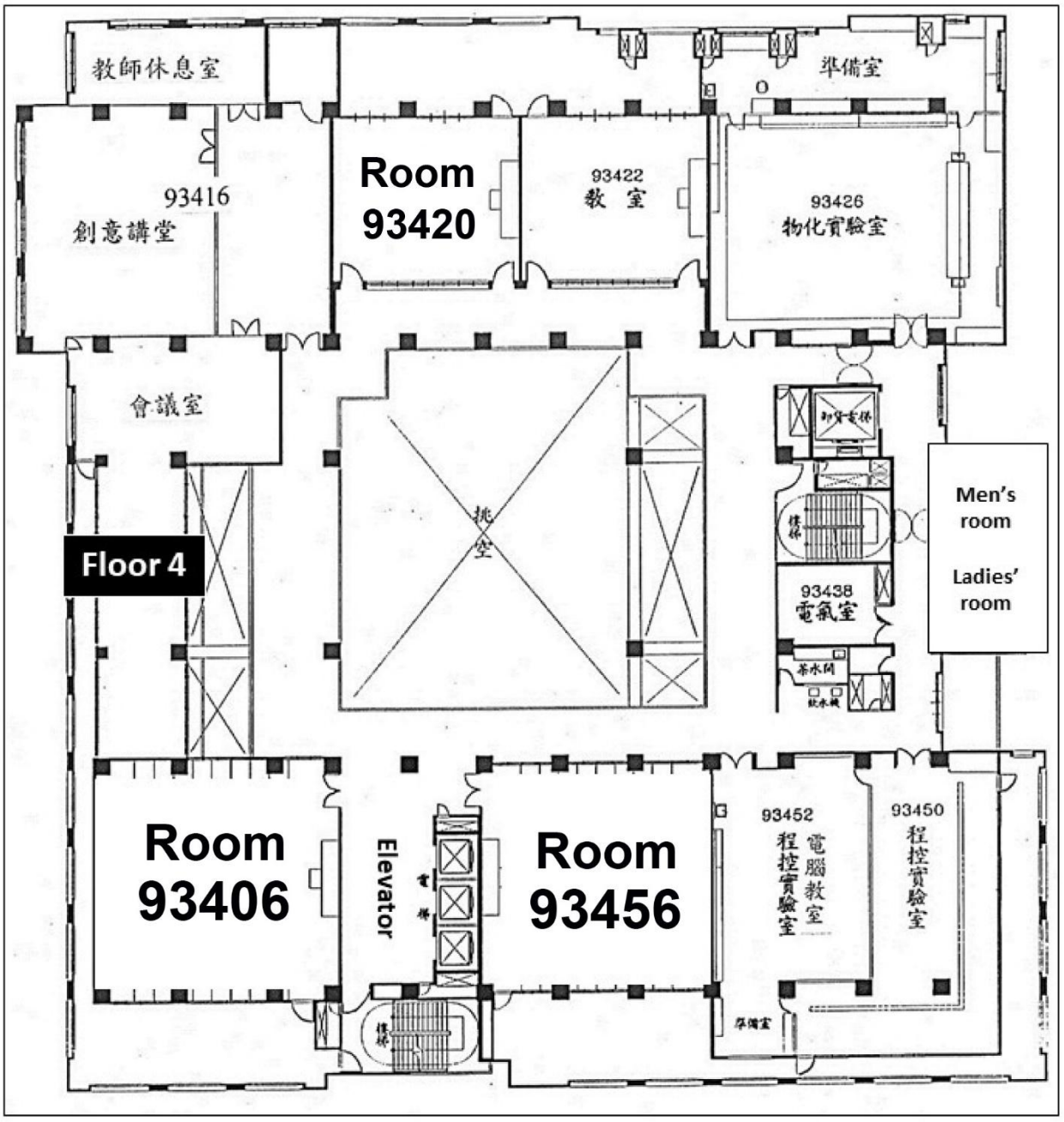
IX. Floor Plan – Floor 2



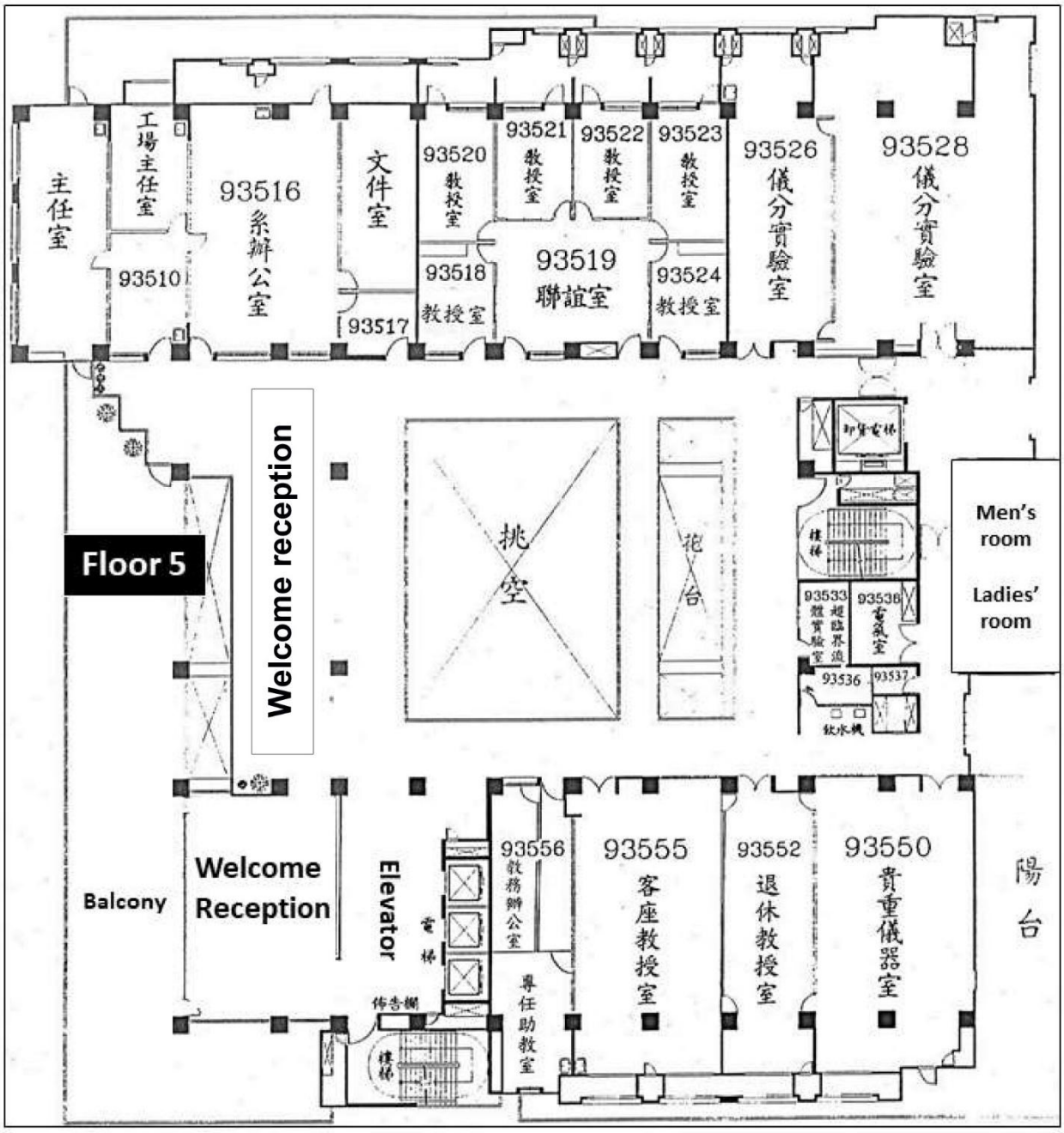
IX. Floor Plan – Floor 3



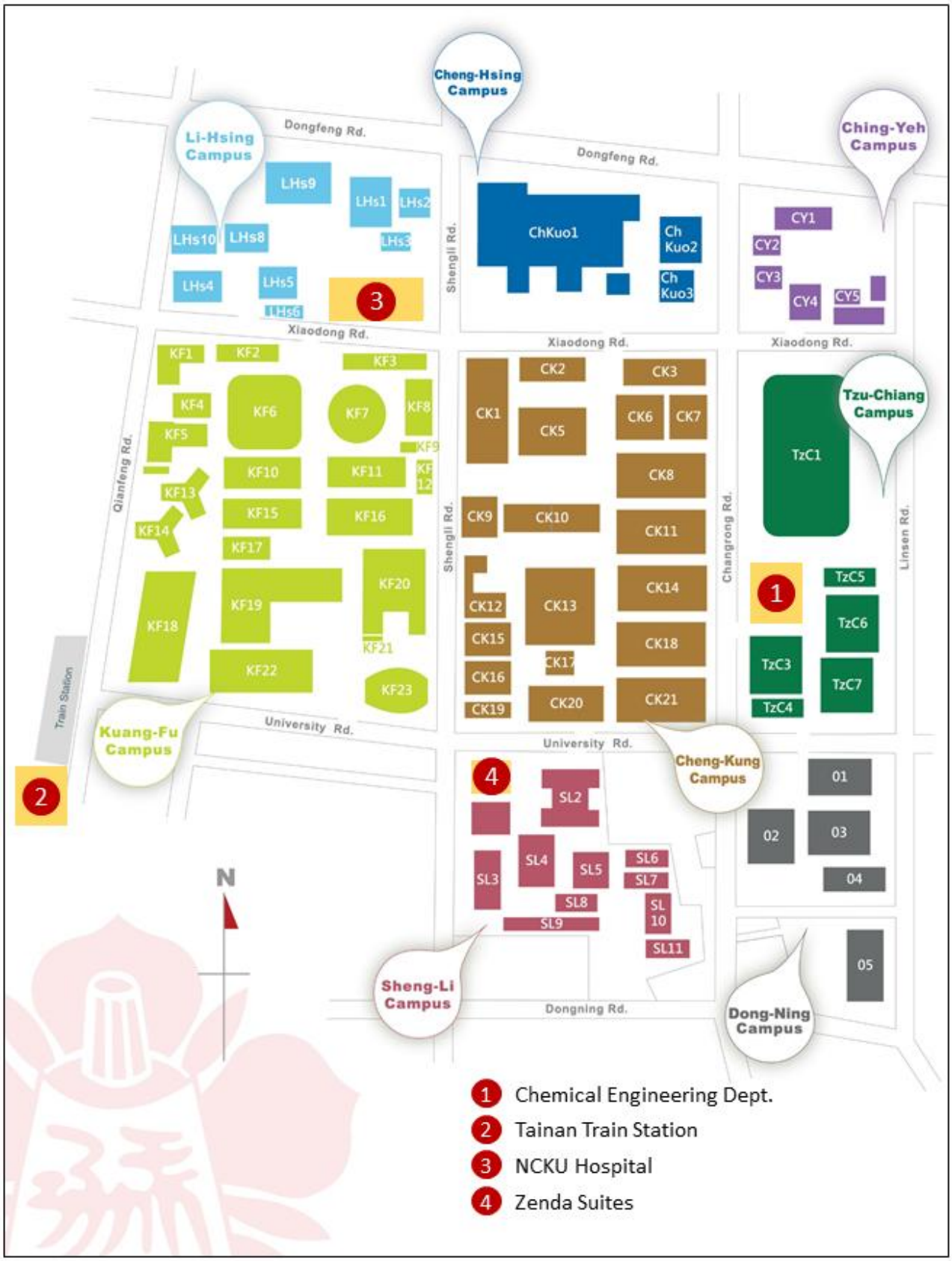
IX. Floor Plan – Floor 4



IX. Floor Plan – Floor 5



X. Campus Map


Cheng-Hsing Campus
Li-Hsing Campus
Ching-Yeh Campus
Tzu-Chiang Campus
Kuang-Fu Campus
Cheng-Kung Campus
Sheng-Li Campus
Dong-Ning Campus
Dongfeng Rd.
Xiaodong Rd.
University Rd.
Dongning Rd.
Shengli Rd.
Qianfeng Rd.
Changrong Rd.
Linsen Rd.
Train Station
N
1 Chemical Engineering Dept.
2 Tainan Train Station
3 NCKU Hospital
4 Zenda Suites

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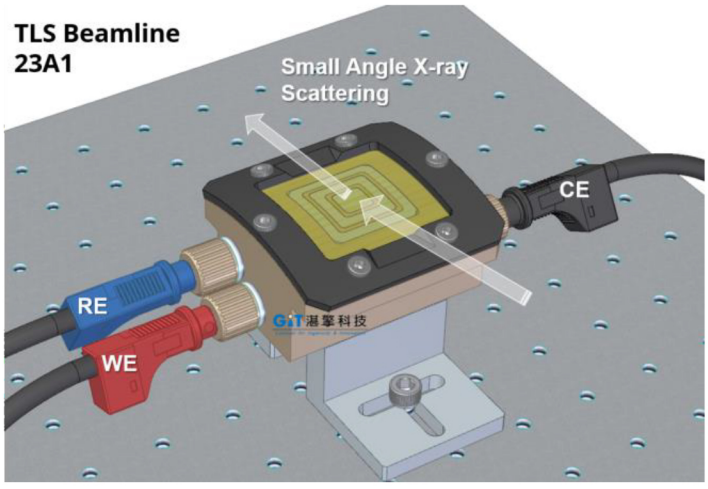
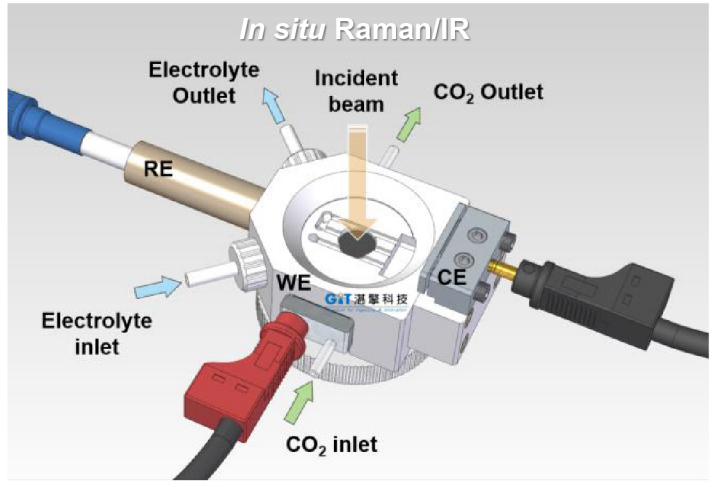
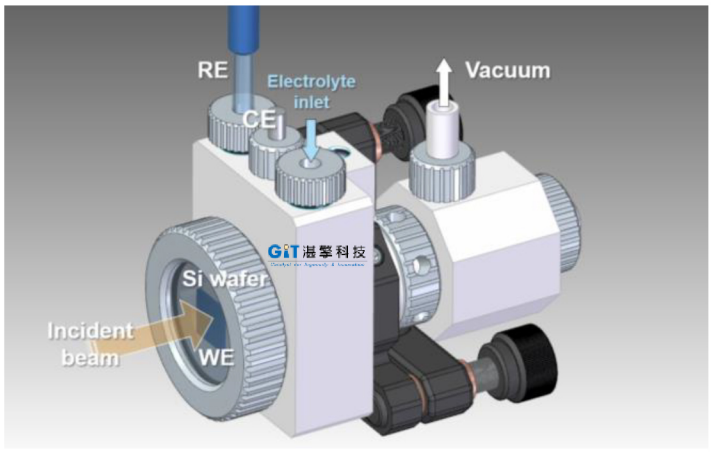
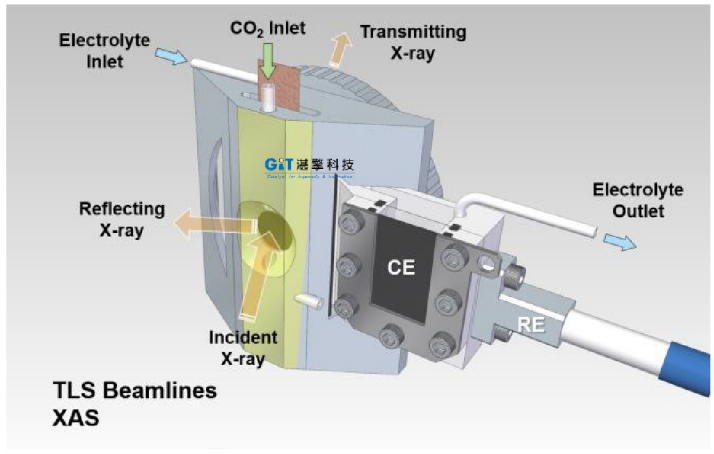
客製 電化學反應器

GiT electrochemical









- ✓ 三極式鋰電池反應器/兩極式固態電解質電池
  Split Cells for LIBs/ Simulated Batteries
- ✓ 雙槽式CO_2還原電化學反應器
  H-shaped Electrochemical Cells for CO_2 Reduction
- ✓ 同步輻射研究-臨場光譜電化學
  In situ Cells for Synchrotron XAS/XRD/TXM studies)
- ✓ 液流電化學/金屬-空氣電池
  Redox Flow Cells/ Metal-Air Cells

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