Advancing Clean Energy in Taiwan: Prof. Cheng-Hao Chuan, Asst. Prof. Hsiao-Tsu Wang Lead 4 Students to Australia for Experimental Learning

During the winter break, Department of Physics Chair Prof. Cheng-Hao Chuang and Assistant Professor Hsiao-Tsu Wang led 4 students — first-year Ph.D. student Zong-Jhe Hsieh from the Ph.D. Program in Applied Sciences, and senior undergraduates Chi-Feng Lee, Szu-Yu Chen, and Chieh-Kai Hsu from the Bachelor's Program in Advanced Materials Science — to Australia for a 5-week international internship and research visit at the Centre for Catalysis and Clean Energy (CCCE), Griffith University (GU). Prof. Chuang noted that the students received funding from the Ministry of Education's Subsidy Project for Encouraging Domestic Colleges and Universities to Send Students Abroad for Study or Professional Internships. This exchange enhanced students' research perspectives, experimental skills, English communication, and international collaboration experience, laying the groundwork for future Taiwan-Australia research cooperation in clean energy development.

Griffith University ranks among the world's top 300 universities, according to the 2022 Times Higher Education (THE) World University Rankings and the ShanghaiRanking's Academic Ranking of World Universities (ARWU). TKU's visiting group focused on short-term research and academic learning in renewable energy and electrocatalysis. Students engaged in hands-on practice in new energy material synthesis, performance testing, structural analysis, and participated in academic seminars while networking with local graduate students to gain insights into cutting-edge energy technologies and the Australian academic environment.

Prof. Chuang noted that CCCE Deputy Director Associate Professor Porun Liu offered the students practical methods that helped them address challenges in their electrochemical experiments, further strengthening the academic collaboration between the two institutions. He praised the students for their preparation and initiative in studying the lab's focus areas, actively engaging in research exchanges, interacting with local scholars,

asking questions, and documenting their learning — all of which provided a solid foundation for their academic and career development.

Ph.D. student Tsung-Che Hsieh observed that many CCCE researchers came from chemistry backgrounds, which led to different experimental emphases. Using electrocatalysis as an example, he explained: “Their focus is on how much product a material can generate at its smallest unit, while we focus on how the material’s bonding changes under a given voltage.” These differing perspectives sparked dynamic academic exchanges.

Chi-Feng Li shared his experience with CCCE’s shared lab system, where all equipment is communal and must be reserved in advance. He noted that this model significantly improves resource efficiency. He also reflected on how Australians value the quality of life. Due to high restaurant prices, he opted to stay in accommodation with a kitchenette and cook his own meals with locally sourced ingredients. “From clumsy beginnings to mastering cooking skills, I’ve greatly improved.”

Szu-Yu Chen expressed gratitude to CCCE for providing access to high-quality research outcomes that contribute to a healthier, cleaner, and more sustainable future. He enhanced his material evaluation abilities through hands-on data analysis with advanced equipment, and his immersion in an English-speaking environment significantly improved his language fluency, independence, and adaptability. In contrast to Taiwan’s convenience of eating out, he found self-catering in Australia a valuable life lesson in independence.

Chieh-Kai Hsu brought his own samples for experimentation and gained new insights from observing the varied methodologies of international research teams. The academic diversity broadened his research horizons. Beyond the lab, he especially appreciated the natural beauty of the Gold Coast — its expansive beaches and pleasant climate helped him relax and embrace the laid-back Australian lifestyle. In addition to academic growth, the experience of adapting to a new environment, communicating in a foreign language, and living abroad left the group with lasting and memorable impressions.

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Prof. Cheng-Hao Chuang (second from left, front row), Chair of the Department of Physics, and Assistant Professor Hsiao-Tsu Wang (fourth from left) led 4 students to visit the Centre for Catalysis and Clean Energy at Griffith University in Australia, where they met with the center's Deputy Director, Assoc. Prof. Porun Liu (third from left), for an international internship and academic exchange.

The delegation of faculty and students from Tamkang University presented an update on their experimental progress.

Faculty and students from both universities exchanged ideas over a shared meal.