

## National High School Creative Chemistry Competition: Challenges, Experiments, and Tours – Yanping High School Secures Double Gold

Campus focus

To spark interest in chemistry among high school students, deepen their understanding of chemistry's impact on human life, and enhance their basic knowledge and experimental skills, the Department of Chemistry at Tamkang University held the 19th National Chung–Ling Chemistry Innovation Contest on December 7, with events running all day at the Chung–Ling Chemistry Hall. 22 gold medals for the group practical competition were awarded, both won by teams from Yanping High School. The winning teams included members Chien–Hsun Wang, Tzu–Chun Hsu, and Hao–Chun Liao, as well as You–Chen Li, Hsuan–Ju Wang, and Chie–Lin Kuo. Each team received a cash prize of NT\$4,500 and a certificate. Additionally, 4 silver medals and 6 bronze medals were awarded.

Department Chair Chih–Hsin Chen welcomed students to participate, explaining that the Chemistry Department organizes the Chung–Ling Chemistry Innovation Contest annually to encourage high school students to engage in hands–on chemistry activities. Through practical experimentation, students' interest in learning is stimulated, and they get a glimpse of what they can learn in a university chemistry program. This year, registration filled up quickly after it opened, thanks to enthusiastic participation from students across northern, central, and southern Taiwan.

The event attracted teams from schools such as Fu Jen Catholic High School, Chu Lin High School, Changhua Senior High School, Chingshin Academy, Zhongshan Girls High School, Dazhi High School, Ching Cheng High School, Washington High School, and St. Viator Catholic High School. Students formed their own teams of 3, including cross–school collaborations, and several parents also attended to observe. Participating students noted that the competition was highly rewarding. After hearing teacher recommendations, many rushed to register online on the first day of registration, with multiple groups competing for slots. On the event day,

they arrived in their own lab coats, fully prepared for the challenge. The Chemistry Department set up various checkpoints in teaching and public spaces within the Chemistry Building. Participants completed designated tasks to receive stamps from checkpoint supervisors (Chemistry Department faculty members Prof. Chih-Shin Chen, Assoc. Prof. Ming-Kai Chern, Assoc. Prof. Jin-Pei Deng, and Assoc. Prof. Chia-Chi Huang) before advancing. The next stage involved experimental operation and the preparation of analytical reports. Students tackled experimental questions by using the provided instruments, equipment, and chemicals to design and execute experiments, solve problems, and submit written reports. The evaluation criteria included 35% for safety and equipment cleanup, 45% for the use of nanofiltration membranes and filtrates, and 20% for test questions. Associate Professor Chia-Chi Huang, who designed the experimental questions, explained that to address the issue of increasing environmental pollution, the experiment simulated wastewater by mixing red and blue dyes. Students were tasked with creating nanomaterials containing silver and molybdenum, spreading them evenly onto filter paper to form filtration membranes, and testing their effectiveness in filtering the simulated wastewater. Success was achieved when the dyes were adsorbed, leaving a clear liquid. Huang further noted that the experimental technique and the size of the containers could significantly influence the results. Groups that failed had filtrates appearing blue, red, or even purple, determining the competition outcomes.

Teaching assistant Tzu-Jung Huang shared an anecdote from the experiment. When one team member curiously asked a question, another quickly reminded them, "This is a competition—you can't ask the proctor for answers!" Tzu-Jung Huang felt the two were a perfect team, boldly exploring their curiosity while ensuring compliance with the rules. Ultimately, their careful yet adventurous collaboration led to a successful experiment.

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