

Applied Chemistry



Introduction

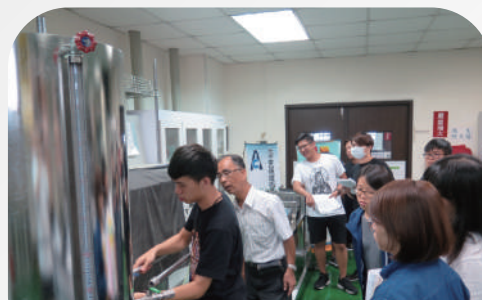
The Department of Applied Chemistry (AC) is a member of the School of the Sciences and Engineering one of the oldest departments in the Chaoyang University of Technology (CYUT), and is recognized for its scholarly achievements and commitment to excellence in teaching, research and service to the community. The Department operates superb, state-of-the-art instrumentation facilities that support its research and teaching missions. The Department, established in 1995, is the home of an emerging academic discipline, exciting interdisciplinary degree programs, and faculty and students who want to make a difference in human health care through education, research, and invention. We currently provide instruction and training to over 350 undergraduate and over 20 postgraduate students. To meet the challenges of the new century, our department is working to constantly improve its educational and research program.

We offered BSc undergraduate degrees with concentrations of Institute of Engineering Education, Taiwan (IEET) certification. Our postgraduate program offers MSc and PhD degrees in the four traditional areas of Analytical, Inorganic, Organic, and Physical Chemistry as well as in the disciplines of Biochemistry, Plant Tissue Culture, Microbiology, Chemical Education, Molecular Biology, Environmental Technology and Materials & Polymers. With research active faculty, you can expect to receive personal attention from your faculty mentor as you develop your own research skills and mature as a scientist. Faculties and students in the AC also benefit from a number of close collaborations between chemistry and research centers and departments at CYUT.

Features

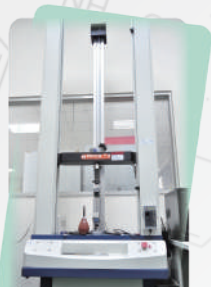


Various laboratories and facilities to train students



The only University own the Technical Examination Room at Middle Taiwan for Chemical Engineering Level B Technician

The AC has excellent facilities for conducting research in the biophysical, cellular, and molecular biological sciences. The Department houses multiple core facilities funded by MOE, MOST and CYUT to support modern chemical and biomolecular research, including a precision greenhouse, fungal culture room; specialized instrumentation for analytical chemistry; FTIR systems; mass spectrometers; NMR Spectroscopy. In addition to modern, spacious laboratories, the department has state-of-the-art instrumentation available to investigators within departmental research groups. The Department is equipped with a wide variety of other instrumentation, including microscopes; fermentor; centralized cell culture facilities, peptide synthesis, and microbial cultivation and protein purification core facilities and a full complement of standard chemical research instruments.



Universal testing machine



500 MHz NMR Spectroscopy



Pheromone center received the gold prize and bronze medal at 2017 TAITA (Taipei) and ITX (Malaysia) and selected as one of ten key technologies of the year by COA



AMAC signed the MOU with Shandong Institute for Food and Drug Control



Agreement signing for industry-university cooperation on real-time pests monitoring system with Chunghwa Telecom and DynaGX Electronics Co., Ltd.



Business visits and events partnership

Curriculum

- In response to the professional feature on the chemical and biochemical industry, the AC department plans two groups of courses:

Undergraduate Program

Specialty Chemicals and Drug / Cosmetics

Organic Chemistry, Physical Chemistry, Physical Chemistry Laboratory, Introduction of Materials, Material Chemistry and Practices, Cosmetic, Spectroscopy of Organic Chemistry, Specialty Chemicals, Electrical and Optical Properties of Material

Food and Biotechnology

Practice of Food Chemistry, Practice of Crop Production, Practice of Health agriculture, Practice safety of Food Chemistry, Biochemistry, Biochemistry Laboratory, The Development and Applications of Green, Agricultural Resources, Fermentation Technology, Introduction of Biotechnology

Graduate Program

Advanced Professional Courses

Special Topics in Organic Chemistry, Special Topics in Analytical Chemistry, Special Topics in Material Chemistry, Special Topics in Biochemistry

Seminar

Seminar (I-IV)

Apprenticeship-based Learning Research Topics

Research Topics in Applied Chemistry (I-IV)

Lab. and Research Center

Asian Mycotoxin Analysis Center(AMAC)

The AMAC was established in 2007 cooperation with Amlan International (USA) to provide mycotoxin analysis services from nine regions in Asia, and is an ISO/IEC 17025 certificated laboratory. In 2014, it became a laboratory accredited by the Taiwan Accreditation Foundation (TAF), and passed the Taiwan Food and Drug Administration (TFDA) for Food Inspection Agency in 2016, becoming the first university-level inspection center with mycotoxin analysis in Taiwan. At the end of 2017, nearly 20,000 inspection services have been accomplished, and the cumulative inspection cases ranked the top three in the world.

Affinity chromatography technique for mycotoxin absorption in AMAC



GC/MS/MS is useful tool for pesticide residue inspection

Pheromone Center

Established in 2008, it cooperates with the Academia Sinica, COA, MOST, MOE, and International Cooperation and Development Fund (ICDF) to promote insect pheromone biological agents for pest control and reduce the use of chemical pesticides. A variety of pheromone formulations and primordial synthesis have been developed, and good results have been achieved in field trials. In recent years, the pheromone has actively promoted worldwide, and has also participated in many domestic and foreign invention exhibition competitions and patent applications. In the future, we hope to stand the Center as a platform to integrate the resources and enable Pheromone's green products to become the key features of CYUT with substantial competitiveness and development prospects, and to improve the self-restraint and competitiveness of Pheromone's green products. The main objective is to create green products that meet the concept of sustainable agricultural operations and actively implement the commercialization of R&D results and the effectiveness of technology transfer.



Pheromone Center is the only research institute located at Taiwan' universities



On-site promotion and field test of pheromone



Agro-processing Certification Center (APCC)

Founded in 2014 and certified by TAF in May, 2016, it has become the third national verification institution established in universities and colleges. In line with its commitment to verifying product quality, the APCC provides the most complete verification management system for product verification applicants in order to establish good verification policies and targets, so that agricultural product and agro-processing product certification applicants have the greatest satisfaction and trust to the APCC. The main verification works for APCC are: 1. verification of organic agricultural products; 2. verification of organic agro-processing products. Through a quality verification system, the agricultural products and foods can be effectively upgraded in the domestic market, build consumer confidence, ensure food safety, and safeguard the health of the general public.



APCC certified document for agricultural product and agro-processing product certification issued by COA



Auditing and sampling of organic agricultural products



Certified stamp for organic agricultural products of APCC

Green Center of Agriculture Technology

Founded in August 2017, it is an integrated platform for healthy agricultural technology research and development, material production, food safety inspection and verification audit. It has a materials division (Pheromone Center), an inspection division (AMAC), and a verification division (APCC) provides technical services, links up with industry, and integrates with teaching activities to provide students with practical work, practice areas, and cultivate practical professionals.

Faculty

Name	Title	Education	Specialty
Shih, Yeng-Fong	Professor	National Chung Hsing University	Polymer science, Polymer Composites, Green Composites, Nanocomposites
Chen, Cheng-Nan	Associate Professor	University of the Pacific (USA)	Mass spectrometry, Analysis Methods Development of Small Molecule
Chien, Wei-Jyun	Associate Professor	State University of New York at Stony Brook (USA)	NMR Spectroscopy, Biophysics, Peptide Synthesis, Bio-pesticide Formulation
Lee, Meng-Jen	Associate Professor	University College London (UK)	Cell Biology, Drug Screening Platform, Disease Animal Model, cDNA Microarray, Neuroscience
Liao, Ya-Fan	Associate Professor	National Chung Hsing University	Molecular detection, Tumor Biology, Immunology, Mycotoxin Analysis
Liu, Bing-Lan	Associate Professor	University of Essex (UK)	Protein Chemistry, Microbial Fermentation, Enzymology, Natural Products Isolation, Food Technology
Sheu, Ce-Shing	Assistant Professor	Texas A&M University (USA)	Analytical Chemistry, Instrumental Analysis, Pharmaceutical Formulations Chemistry
Chan, Hsiao-Sung	Assistant Professor	National Taiwan University	Bioreactor Application, Plant Cell Culture, Microbial Fermentation, Isolation and Purification
Hsieh, Dean-Kuo	Assistant Professor	National Taiwan University	Physical Chemistry, Theoretical Chemistry, Structure of Atoms and Molecules
Lin, Mei-CHing	Assistant Professor	National Sun Yat-sen University	Organometallic, Inorganic Chemistry
Tseng, Cheng-Yen	Assistant Professor	National Chung Hsing University	Soil chemistry, Plant Biochemistry, Plant Nutrition, Organic Product Certification
Tseng, Jui-Chang	Assistant Professor	National Taiwan University	Organic Synthesis, Organic chemistry, Organometallic Chemistry
Tsay, Hsin-Sheng	Emeritus Professor	National Taiwan University	Tissue Culture, Genetic Engineering, Genetics and Plant Breeding



FACEBOOK:

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