

Department of Applied Chemistry

Tel : +82 31 201 2419 Fax : +82 31 201 2340 E-mail : chem412@khu.ac.kr URL : <http://applchem.khu.ac.kr>

What is Applied Chemistry?

Chemistry is the study of matter and its change. This includes their composition, the properties they exhibit, and the changes they undergo when they react with other substances. Applied Chemistry is the systematic study of virtually everything that occupies space and possesses mass. The whole earth is made of chemicals, as are all the other planets and stars. All living things on earth are made of chemicals, and chemical reactions sustain every single life, every thought, and every opinion. All materials and machines we construct are made of the chemicals available on earth, often transformed by chemical reactions into advanced materials that meet our specific needs. The study of applied chemistry is the study of the sun and stars, the earth, the sea, all life, and all machines. To fully understand these things, you need to have knowledge of chemistry, an interdisciplinary study of biology, physics, geology, chemical engineering, medicine, and material sciences.

Applied Chemistry at Kyung Hee

The Applied Chemistry program focuses on education and research in the field of chemistry and its applications. Our mission is to provide a coalescing and learning experience for graduate students and post-doctoral fellows in diverse research groups dealing with analytical, biological, inorganic, organic, physical, and polymer chemistries. In addition, we provide a set of tools to increase the level of complexity and the research that we can bring to bear on emerging problems in nanotechnology, biotechnology, environmental technology, and information technology. With such efforts, our program maintains excellence in education and research in the field of applied chemistry. These areas include medicinal, natural product, computational, organometallic, and physical organic chemistries, chemical physics including experimental and theoretical dynamics, materials sciences for organic-inorganic hybrid materials, organic and inorganic display materials, and synthesis and reaction in the supercritical fluids. Currently, 15 faculty members participate in the undergraduate and graduate programs and direct various research.

Degree Requirements

- At least 130 course units of undergraduate level credit including 50 units of intensive Applied Chemistry courses are required for the B.S. degree
- Students must fulfill presentation, defense, and document requirements for the Chemistry thesis committee
- A thesis advisor can be any faculty member from the Applied Chemistry department

Courses

Year 2

Introduction to Analytical Chemistry, Applied Analytical Chemistry, Analytical Chemistry Laboratory, Introduction to Physical Chemistry, Physical Chemistry I, Physical Chemistry II, Physical Chemistry Laboratory, Introduction to Organic Chemistry, Organic Chemistry I, Organic Chemistry Laboratory, Introduction to Inorganic Chemistry, Introduction to Applied Chemistry

Year 3

Reaction Kinetics, Organic Spectrometric Analysis, Organic Chemistry II, Material Science Laboratory, Computational Chemistry and Practice, Physical Organic Chemistry, Instrumental Analysis, Biochemistry I, Biochemistry II, Inorganic Chemistry I, Inorganic Chemistry II

Year 4

Synthetic Organic Chemistry, Inorganic Materials Science and Technology, Applied Physical Chemistry, Physical · Polymer Chemistry Research, Organic · Biochemistry Research, Catalyst Chemistry, Nanochemistry, Special Topics in Analytical Chemistry, Special Topics in Physical Chemistry, Introduction to Fine Chemistry, Inorganic Chemistry Research, Analytical Chemistry Research

Careers and Graduate Destinations

Our students have a variety of employment options. They can perform research and development in national or corporate laboratories and industries in the field of classical chemistry as well as diverse chemistry-related areas such as nano-technology (NT), bio-technology (BT), information tech-nology (IT), and environmental technology (ET). Our excellent graduate program is also open to all students who wish to gain an in-depth understanding of chemistry and materials sciences.

Faculty

Sung-Yul Lee, Ph.D. University of Chicago, 1988, Professor, Physical Chemistry, sylee@khu.ac.kr
Seung-Han Lee, Ph.D. Princeton University, 1987, Professor, Organic and Organometallic Chemistry, shlee@khu.ac.kr
Kwang-Hyun Ahn, Ph.D. Princeton University, 1988, Professor, Organic Chemistry, khahn@khu.ac.kr
Yong-Ho Kim, Ph.D. University of Minnesota, 1991, Professor, Physical and Computational Chemistry, yhkim@khu.ac.kr
Song-Ho Byeon, Ph.D. University of Bordeaux 1, 1991, Professor, Inorganic and Solid State Chemistry, shbyun@khu.ac.kr
Hak-Won Kim, Ph.D. Iowa State University, 1992, Professor, Organic Chemistry, hwkim@khu.ac.kr
Young-Sik Lee, Ph.D. Columbia University, 1992, Professor, Physical Chemistry, yongslee@khu.ac.kr
Seong-Ho Kang, Ph.D. Seoul National University, 1998, Associate Professor, Analytical Chemistry, shkang@khu.ac.kr
Kwang Pyo Kim, Ph.D. University of Illinois at Chicago, 2002, Biochemistry, kimkp@khu.ac.kr
Sung-Ik Yang, Ph.D. Seoul National University, 1998, Associate Professor, Analytical Chemistry, siyang@khu.ac.kr
Eun-Joo Kang, Ph.D. Seoul National University, 2006, Full-time Instructor, Organic Chemistry, ejkang24@khu.ac.kr
Min Hyung Lee, Ph. D. Northwestern University, 2010, Full-time Instructor, Material Chemistry, minhlee@khu.ac.kr
Doo-Hyun Ko, Ph. D. University of North Carolina at Chapel Hill, 2010, Assistant Professor, Physical Chemistry, dhko@khu.ac.kr