

Department of Applied Chemistry

Tel : +82 31 201 2419 Fax : +82 31 202 7337 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 the stars. All living things on earth are made of chemicals, and chemical reactions sustain every single life you interact, every thought that you think, every opinion you form. All materials and machines we construct are made out of the chemicals available on earth, often transformed by chemical reactions into advanced materials that meet our specific needs. So the study of applied chemistry is the study of the sun and stars, the earth, the sea, all life, and all of machines. To fully understand these things, you need to understand some chemistry, interdisciplinary study of biology, physics, geology, chemical engineering, medicine, and materials sciences.

Applied Chemistry at Kyung Hee

The Applied Chemistry program focuses on the 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, 13 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 49 units of intensive Applied Chemistry courses are required for the BS 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

Physical Chemistry, Physical Chemistry I, Physical Chemistry II, Physical Chemistry Laboratory, Organic Chemistry, Organic Chemistry I, Organic Chemistry Laboratory, Inorganic Chemistry, Analytical Chemistry I, Analytical Chemistry II, Analytical Chemistry Laboratory

Year 3

Chemical Kinetics, Molecular Spectroscopy, Computational Chemistry, Organic Chemistry II, Organic Spectrometric Analysis, Theoretical Organic Chemistry, Inorganic Chemistry I, Inorganic Chemistry II, Material Science Laboratory, Instrumental Analysis, Biochemistry

Year 4

Polymer Chemistry, Special Topics in Physical Chemistry, Organic Synthesis, Inorganic Materials Science and Technology, Physical & Polymer Chemistry Research, Organic & Biochemistry Research, Inorganic & Analytical Chemistry Research, Introduction to the Molecular Science, Introduction to Fine Chemistry, Catalyst Chemistry, Nano-Chemistry

Careers and Graduate Destinations

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

Faculty

Beom-Suk Choi, Ph.D. University of Missouri at Columbia, 1982, Professor, Analytical Chemistry, bschoi@khu.ac.kr

Young-Sook Paik, Ph.D. Texas Tech University, 1984, Professor, Organic and Natural Products Chemistry, paikys@khu.ac.kr

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

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 Lecturer, Organic Chemistry, ejkang24@khu.ac.kr

Sun-Min Ryu, Ph.D. Seoul National University, 2005, Full-time Lecturer, Physical Chemistry, sunryu@khu.ac.kr