

Department of Applied Chemistry

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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 students 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 ChemistryI, Physical Chemistry II, Physical Chemistry Laboratory, Introduction to Organic Chemistry, Organic ChemistryI, Organic Chemistry Laboratory, Introduction to Inorganic Chemistry, Introduction to Applied Chemistry

Year 3

Reaction Kinetics, Organic Spectrometric Analysis, Organic ChemistryII, Advanced Material Science Laboratory,

Computational Chemistry and Practice, Physical Organic Chemistry, Instrumental Analysis, Biochemistry I, Biochemistry II, Inorganic ChemistryI, Inorganic ChemistryII, Applied Electrochemistry

Year 4

Biochemistry Laboratory, Synthetic Organic Chemistry, Inorganic Materials Science and Technology, Applied Polymer Chemistry, Physical · Polymer Chemistry Research, Organic · Biochemistry Research, Catalyst Chemistry, Nanochemistry, Special Topics in Analytical Chemistry, Physical Chemistry for Nano-Biomaterials, Applied Molecular Chemistry, Analytical and Inorganic 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
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