

Polymer Science and Engineering Program

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Introduction

This interdisciplinary program offers to students opportunities to learn science and engineering of polymers which deal with the synthesis, structure, properties, processing and application of macromolecules with large molecular weight. This program has the interdisciplinary character covering curricula from the Department of Chemistry, Physics, Biology, Material Science, Chemical Engineering and Mechanical Engineering.

Polymer materials are one of the major basic materials utilized in electronics, telecommunication, information storage, automotive, aerospace, and biochemical industries. In recent years, polymer materials are the key materials for the innovative technology development of the IT, BT and NT industries.

The Korean polymer industry ranks number 5 in the world regarding the ethylene production capacity which exceeds 5 million tons per year. The polymer industry up to now mainly produces general purpose commodity polymers. However the future of the Korean polymer industry depends on the technology innovation and the polymer industry should restructure to produce high value-added functional polymers. This requires personnel with sufficient knowledge of the synthesis, structure, properties and processing of polymers and the interdisciplinary program covering these curricula is necessary to provide the Korean polymer industry the competing-edge in the world market.

The center for advanced functional polymers which is the first Engineering Research Center designated by the Ministry of Science and Technology of the Korean Government in the field of polymer research will provide students with opportunity to participate in the research projects of the functional polymers for IT, BT and NT and the center provides the polymer industry personnel with experience in advanced functional polymer research.