

Graduate School of Nanoscience & Technology

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1. Introduction

Nanoscience and Technology

Nanoscience and Technology (NST) refers to science and technology of characterizing, understanding, and controlling the structure and properties of matter at nanometer (10⁻⁹ nm) scale. Today, Nanoscience and Technology is moving beyond simple miniaturization, and is moving toward understanding and manipulating matter based on fundamental principles in order to transcend the natural limits. Now, Nanoscience and Technology, based on fundamental science ranging from Physics, Chemistry, and Biology, is finding applications in all areas of technology ranging from high-tech fields such as computer science, automotive industry, semiconductors to high value-added industries such as medicine, life science, energy, and agriculture. Indeed, the Nanoscience and Technology is expected such a central role in developing national competitiveness that it is said that a nation cannot have a future without Nanoscience and Technology.

Purpose of establishing Graduate School of Nanoscience and Technology

Such a wide applicability, however, also means that without a focused program of education and research, Nanoscience and Technology cannot achieve a large impact. Thus, the Graduate School of Nanoscience and Technology at KAIST has identified Nano-bio area where Nanoscience and Biology can fuse as being the key area for achieving both broad application and high impact, and was established to generate new knowledge and scientific discipline in that area..

Department Philosophy

1) Goal-driven interdisciplinary research and education

The Graduate School of Nanoscience and Technology at KAIST consists of professors with diverse background such as physics, biology and chemistry, and aims to provide interdisciplinary research and education environment for interested students from all disciplines from both science and engineering departments. For this purpose, we require basic core courses in physics, chemistry, and biology for all incoming students to lay a strong foundation for future development. In addition, laboratory courses are required to obtain hand-on experience, and a nano-fabrication course designed and operated in collaboration with National NanoFab Center is required for exposure to cutting-edge nanofabrication techniques.

2) Freedom to choose an advisor

Incoming students will have many opportunities to interact with participating faculty via seminars and laboratory experiments. The student will choose an advisor at the end of first semester to continue their degree work.