

## Graphene Research Institute at Sejong University

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### Abstract

Graphene Research Institute (GRI) at Sejong University is the first government-funded institute on graphene research in Korea. GRI was established in 2010 to take a lead in the research on the growth of high quality graphene and the development of novel graphene devices by promoting collaborative research among the experts in related fields. GRI has two main projects. One project is supported by Priority Research Centers Program of the National Research Foundation (NRF) of Korea government. The project title is “Graphene Nanostructures and Electronic Devices”. Eleven professors at Sejong participate in the project. The research fund is approximately a half million dollars per year from the government during 2010-2019, whereas matching fund from Sejong University is about one million dollars. The other project is supported by Nano-Material Technology Development Program funded by the Korean Ministry of Science, ICT and Future Planning, of which title is “Growth and defect control in graphene and development of innovative graphene-based electronic devices”. The research fund is about 1.5 million per year during 2012-2017. Fifteen professors from 9 institutes including Harvard University, Cornell University and Seoul National University are participating in the project. Graphene research activities at GRI include (i) graphene growth and synthesis using molecular beam epitaxy (MBE) and chemical vapor deposition (CVD), (ii) evaluation and process development for band gap engineering, transport property, and nanostructured lithography, and (iii) device fabrication and other applications for graphene-based electronic devices, high-frequency devices, biosensors, and gas sensors. These research activities have been published in many high-profile professional journals. GRI hopes that it becomes a worldwide research center for PhDs and graduate students doing graphene research, provides skilled human resources to graphene industrial community, and hosts graphene-related meetings and conferences. In this presentation, we will mainly introduce graphene research activities at GRI and its accomplishments until now, as well as research projects operated by GRI.



Opening ceremony of GRI after being selected as one of Priority Research Centers in 2010.