

# IBS CINAP Seminar

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## Recent researches for graphene/hBN based devices and SAW devices

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### Abstract

The concept of van der Waals heterostructures has led to a new technology of layer-by-layer engineering of two-dimensional (2D) materials with atomic precision. Out of the abundance of 2D materials, the two – graphene and hexagonal boron nitride (hBN), still remain the most unique couple, because of their outstanding synergetic properties. The hBN plays a vital role in ultra-high quality graphene devices, and as enabling material for graphene superlattices. Besides, it is also known to protect sensitive 2D materials from environment via encapsulation. Here, I would like to introduce my recent researches focused on graphene and 2D materials during last three years.

Also, electron transport by surface acoustic waves (SAWs) in GaAs/AlGaAs for single-photon emission studied during my PhD degree will be introduced briefly which can potentially be instrumental in the implementation of scalable quantum processors and quantum repeaters, by facilitating interaction between distant qubits.

### Brief Bio



Professor Seok-Kyun Son is an established physicist, specializing in the area of condensed matter physics, mesoscopic physics and nanotechnology. He has broad research interests from mesoscopic phenomena in electronic properties of two-dimensional electron gas in GaAs/AlGaAs heterostructures and graphene. He received his PhD degree at the Cavendish Lab, University of Cambridge, 2015 and did graphene researches with Konstantin Novoselov at the National Graphene Institute,

The University of Manchester during the last 5 years. Currently, He has started his new research at the department of physics, Mokpo National University.