Exploring Quantum Materials Interfaces for Device Physics and Applications

Quantum Materials Interface and Nano Devices Laboratory (Q.MIND) in the Department of Semiconductor Engineering at Gwangju Institute of Science and Technology (GIST) aims to explore quantum materials and exotic interfacial phenomena for the fabrication and characterization of advanced nanodevices, with a focus on scalable integration and real-world applications. In this talk, beginning with semiconductor physics, devices, processes, measurements, and systems, we overview of emerging trends in AI semiconductors, AI sensors, and quantum computing devices to highlight enabling technologies for on-device AI, autonomous driving, big-data processing, hyperconnectivity, and qubit platforms.