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## Exploring quantum devices with new materials

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### Abstract

In quantum technologies such as quantum computing, the role of host materials is important. New materials expand the possibilities for new functional quantum devices and technologies. In this presentation, we introduce our research on the exploration of new semiconductor materials and the quantum devices that utilize them, aimed at future semiconductor quantum technologies. We will explain the fabrication and characterization of quantum devices that employ these new materials. We will also introduce related technologies, such as the measurement and control of quantum states. These efforts will contribute to new functional quantum devices and future applications in fields such as quantum communication, sensing, and computing.