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Semiconductor InSb nanolayers: A new platform for developments of quantum and topological devices

In this talk, I will report on our recent developments in epitaxial growth of free-standing InSb nanoplates and in building quantum devices and superconducting Josephson junction devices with these InSb nanoplates. These InSb nanoplates were grown by molecular beam epitaxy (MBE) and exhibits excellent structural and transport properties. The advantages of employing these InSb nanoplates include flexibilities of transferring them to desired substrates for device fabrication and of directly contacting them with different metals and superconductors. Several quantum devices have been fabricated using MBE-grown InSb nanoplates and have been studied by transport measurements.

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