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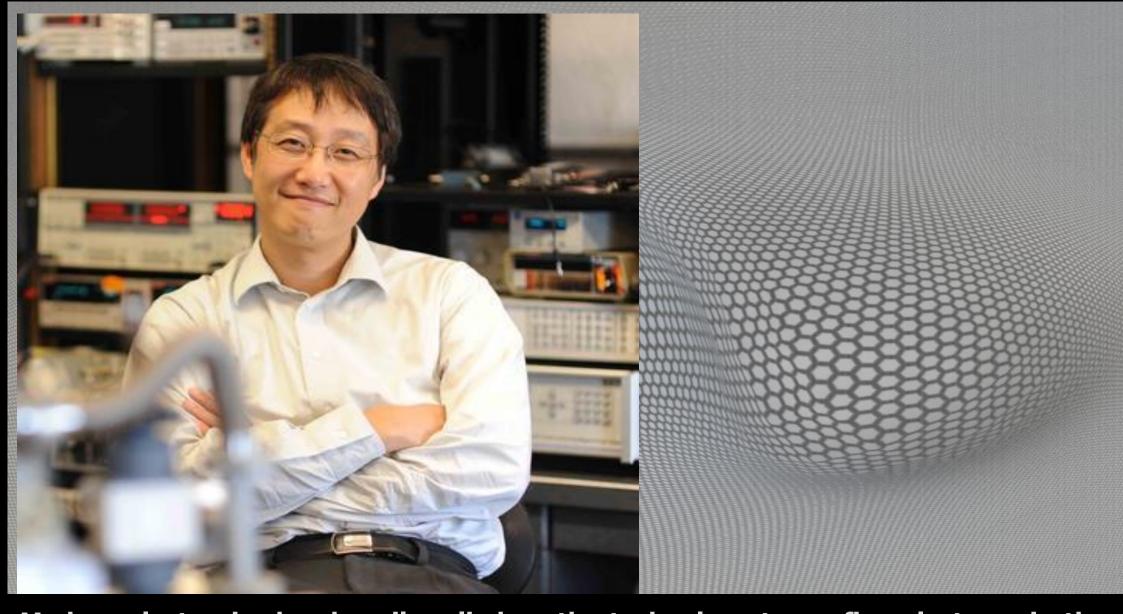


Stacking atomic layers: quest for new materials and physics

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Modern electronics has heavily relied on the technology to confine electrons in the interface layers of semicoductors. In recent years, scientists discovered that various atomically thin materials including graphene, a single atomic carbon layer, can be isolated. In these atomically thin materials, quantum physics allows electrons to move only in an effective 2-dimensional (2D) space. By stacking these 2D quantum materials, one can also create atomic-scale heterostructures with a wide variety of electronic and optical properties. I will discuss the creation of new heterostructures based on atomically thin materials and emerging new physics with technological implications therein.