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Electronic Structure of Single-Crystal Monolayer Graphene on Hydrogen-Terminated Germanium Surface SUNG JOON AHN, JAE-HYUN LEE, JOUNG REAL AHN, DONGMOK WHANG, Sungkyunkwan Univ — Graphene, atomically flat 2-Dimensional layered nano material, has a lot of interesting characteristics from its unusual electronic structure. Almost properties of graphene are influenced by its crystallinity, therefore the uniform growth of single crystal graphene and layer control over the wafer scale areas remains a challenge in the fields of electronic, photonic and other devices based on graphene. Here, we report the method to make wafer scale single crystal monolayer graphene on hydrogen terminated germanium(110) surface and properties and electronic band structure of the graphene by using the tool of scanning electron microscopy, transmission electron microscopy, Raman spectroscopy, electron transport measurement, electron diffraction and angle-resolved photoemission spectroscopy.

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