

Abstract Submitted  
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**Tunneling transport of mono- and few-layers magnetic van der Waals MnPS<sub>3</sub>**<sup>1</sup> SUNGMIN LEE, KI-YOUNG CHOI, Center for Correlated Electron Systems, Institute for Basic Science, South Korea, SANGIK LEE, BAE HO PARK, Department of Physics, Konkuk University, South Korea, JE-GEUN PARK, Center for Correlated Electron Systems, Institute for Basic Science, South Korea, EMERGENT PHENOMENA GROUP TEAM, DEPARTMENT OF PHYSICS, KONKUK UNIVERSITY COLLABORATION — We have investigated the tunneling transport of mono- and few-layers of MnPS<sub>3</sub> by using conductive atomic force microscopy. Due to the band alignment of indium tin oxide/MnPS<sub>3</sub>/Pt-Ir tip junction, the key features of both Schottky junction and Fowler-Nordheim tunneling (FNT) were observed for all the samples with varying thickness. Using the FNT model and assuming the effective electron mass ( $0.5 m_e$ ) of MnPS<sub>3</sub>, we estimate the tunneling barrier height to be 1.31 eV and the dielectric breakdown strength as 5.41 MV/cm.

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