

Abstract Submitted
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Suspension of Graphene and Bi₂Se₃ Atomic Membrane ZENG ZHAO, JAIRO VELASCO, HANG ZHANG, FENGLIN WANG, ZHIYONG WANG, PHILIP KRATZ, LEI JING, WENZHONG BAO, JING SHI, JEANIE LAU, Department of Physics and Astronomy, UCR, SHI JING'S GROUP COLLABORATION — Coupling high quality, suspended atomic membranes to specialized electrodes enables investigation of many novel phenomena, such as spin or Cooper pair transport in these two dimensional systems. However, many electrode materials are not stable in acids that are used to dissolve underlying substrates. Here we present a versatile and powerful multi-level lithographical technique to suspend atomic membranes, which can be applied to the vast majority of substrate, membrane and electrode materials. We also demonstrate, for the first time, fabrication and measurement of a free-standing thin Bi₂Se₃ membrane, which has low contact resistance to electrodes and a mobility of $\gtrsim 500$ cm²/Vs.

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