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Fabrication of High Quality Suspended Graphene devices ZENG ZHAO, WENZHONG BAO, HANG ZHANG, LEI JING, VELASCO JAIRO, GANG LIU, CHUN NING LAU, Department of Physics and Astronomy, University of California at Riverside — Suspended graphene devices have been demonstrated to have ultra-high mobility, enabling the recent observation of fractional quantum Hall effect. Here we report a lithography-free technique for fabrication of suspended graphene devices. Graphene sheets are exfoliated over pre-defined trenches on the substrate. Hard shadow masks are etched from Si wafers and aligned to the trenches. Metals are evaporated through the masks to form clean suspended devices, eliminating contaminants introduced by lithography and etching processes. The completed devices have high mobilities $\sim 100,000$ cm²/Vs.

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