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Graphene based switch HANG ZHANG, WENZHONG BAO, ZENG ZHAO, GANG LIU, JAIRO VOLESCO, LEI JING, BRIAN STANDLEY, MARC BOCKRATH, CHUNNING LAU, University of California, Riverside — We investigate both suspended and non-suspended SiO2 substrate-supported graphene based switch devices, which can be switched "OFF" by applying pulses of 8V and "ON" by pulses of 4V. In addition to the I-V characteristics, we also investigate the statistical behavior of the switching rate and ON state conductance. Conductance switching is observed in suspended as well as non-suspended devices. Our experimental results suggest that the observed conductance switching in SiO2-supported devices results from a combination of the switching behavior of the underlying SiO2 substrate as well as the switching behavior of the graphene break junction alone.

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