

Abstract Submitted  
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**A graphene-based atomic-scale switch** BRIAN STANDLEY, MARC BOCKRATH, California Institute of Technology — Graphene's remarkable mechanical and electrical properties combined with its compatibility with existing planar CMOS technology make it an attractive material for novel computing devices. Thus far work has focused primarily on realizing transistor functionality. To complement this effort, we have developed a graphene-based switch that realizes a non-volatile memory element. Our devices have demonstrated tens of thousands of writing cycles and long retention times. Additionally, the devices' atomic-scale dimensions correspond to bit densities far greater than present-day memory technologies. We will present the fabrication process, switching behavior, and further performance characterization.

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