

Abstract Submitted
for the MAR09 Meeting of
The American Physical Society

Resist-free method for contacting graphene and few-layer graphene CATERINA SOLDANO, CEMES - Centre d'Elaboration de Materiaux et d'Etudes Structurales Toulouse, France, ATHER MAHMOOD, CEMES, Centre d'Elaboration de Materiaux et d'Etudes Structurales, Toulouse, France, JEREMIE GRISOLIA, Department of Genie Physique, INSA, Toulouse, France, VERONICA SAVU, JUERGEN BRUGGER, Microsystems Laboratory, Ecole Polytechnique Federale de Lausanne, Lausanne, Switzerland, ERIK DUJARDIN, CEMES, Centre d'Elaboration de Materiaux et d'Etudes Structurales, Toulouse, France — In recent years, discovery of graphene has offered the scientific community an important tool to investigate a variety of fundamental phenomena. Exceptional electronic transport render graphene a promising candidate for future high-performance electronic devices. Conventional techniques to fabricate graphene devices include lithographic approaches, which tend to alter the structure and surface of graphene, and therefore its properties. A graphene contacting method free of any surface damaging and/or modification is indeed in need. Here, we present a simple resist-free non-invasive approach for contacting graphene and/or few-layers graphene. SiN membrane were custom-made and used to mask samples, previously deposited on substrate. Then, evaporation of metal allows to fabricate electrical leads for testing. Further, we present preliminary measurements of the electronic properties (room- and low-temperatures) of one of our typical sample contacted by such technique.

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Date submitted: 18 Dec 2008

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