

Abstract Submitted
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UV-Ozone Treatment for Improved Contacts to Graphene WEI LI, DAVID GUNDLACH, National Institute of Standards and Technology, Physical Measurement Laboratory, Gaithersburg, Maryland — We report on the influence of UV-Ozone (UVO) treatment on the electrical properties of metal contacts formed to single layer graphene grown by CVD. Polycrystalline graphene was grown on copper foil and transferred onto a heavily doped silicon wafer with a 300 nm thick thermally grown SiO₂ insulator using the method described previously [1]. E-beam deposited Ti (20 nm)/Au (80 nm) contacts were patterned by photolithography and a lift-off process. Just prior to depositing the contacts, the substrates were UVO treated in a commercial system for times ranging from 5 minutes to 25 minutes, where only the graphene surface in the lithographically-defined openings of the resist layer were exposed to UVO. The devices were completed by oxygen plasma etching the graphene in the field regions. For comparison, we fabricated test structures in parallel without UVO treatment.

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