

Abstract Submitted
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Electronic transport experiments on osmium-adatom-decorated graphene JAMIE ELIAS, ERIK HENRIKSEN, Washington University in St. Louis — Monolayer graphene is theoretically predicted to inherit a spin-orbit coupling from a dilute coating of certain transition metal adatoms. To explore these predictions we have constructed a cryogenic probe capable of *in situ* thermal annealing of graphene followed immediately by electronic transport measurements and controlled deposition of sub-monolayer coatings of most any metal. Previously a light coating of indium on graphene was investigated, and found to transfer electrons to graphene and reduce the mobility although no evidence of an induced spin-orbit coupling was seen. We are now depositing osmium and tungsten on graphene devices. Our initial results show an unexpected hole-doping and a sizable increase in resistance of the sample. We will report our progress on characterizing these samples by electronic transport measurements.

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