

Abstract Submitted
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Absence of a transport signature of spin-orbit coupling in graphene with indium adatoms JIA ZHENZHAO, YAN BAOMING, NIU JINGJING, HAN QI, ZHU RUI, WU XIAOSONG, YU DAPENG, Peking Univ — Enhancement of the spin-orbit coupling in graphene may lead to various topological phenomena and also find applications in spintronics. Adatom absorption has been proposed as an effective way to achieve the goal. In particular, great hope has been held for indium in strengthening the spin-orbit coupling and realizing the quantum spin Hall effect. To search for evidence of the spin-orbit coupling in graphene absorbed with indium adatoms, we carry out extensive transport measurements, *i.e.*, weak localization magnetoresistance, quantum Hall effect and non-local spin Hall effect. No signature of the spin-orbit coupling is found. Possible explanations are discussed.

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