Abstract Submitted
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Electronic Structure of Iridium Clusters on Graphene[1] BRADFORD A. BARKER, University of California - Berkeley, Lawrence Berkeley National Laboratory, AARON J. BRADLEY, Univ of California - Berkeley, MIGUEL M. UGEDA, University of California - Berkeley, SINISA COH, ALEX ZETTL, MICHAEL F. CROMMIE, MARVIN L. COHEN, STEVEN G. LOUIE, University of California - Berkeley, Lawrence Berkeley National Laboratory — Graphene was predicted to exhibit non-trivial Z2 topology, but its exceedingly weak spin-orbit coupling prevented this from being observed. Previous theoretical work has proposed enhancing the spin-orbit coupling strength by depositing individual adatoms adsorbed onto the surface of graphene. We show experimental evidence that the iridium adatoms cluster, with a cluster size of at least two atoms. We investigate through theoretical calculations the orientation of the iridium dimers on graphene, contrast the electronic structure of iridium dimers with iridium monomers, and compare the theoretical iridium dimer electronic structure calculations with the experimental results determined via scanning tunneling spectroscopy.

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