

Supporting Information for

**Effects of graphene substrate on structure and property of atomically thin
metal sheets**

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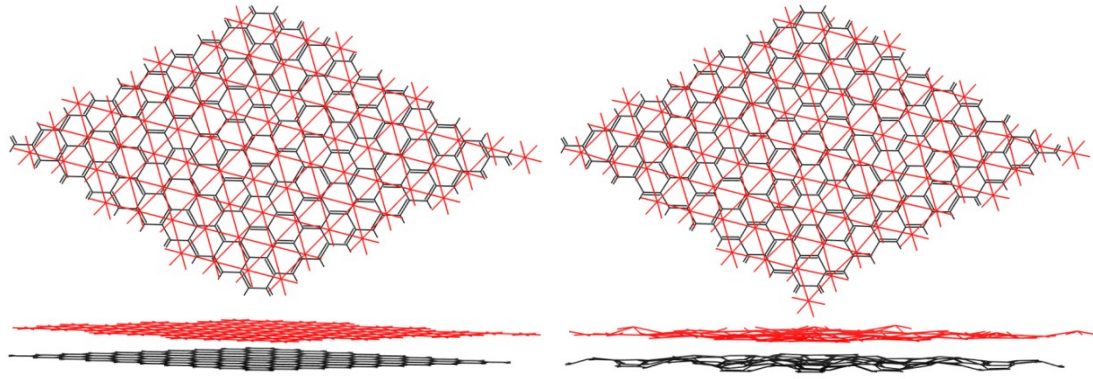


Figure S1 Top and side views of the rhombohedral supercell of Rh/G bilayer, in which the cell of the Rh monolayer is rotated with respect to that of the graphene support by 16.996° . It contains a (10×10) graphene cell and a single-layer $(\sqrt{79} \times \sqrt{79})$ Rh(111) cell, with a lattice mismatch of 2.1%. The red and black lattices depict the Rh layer and graphene, respectively. Left: before relaxation, right: after relaxation.

The corresponding magnet moments of TS and DF in the supercell decrease to be 0.33 and 0.56 μ_B , respectively.