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Facile Synthesis of Metal Nanoparticles on Graphene via Galvanic Displacement Reaction for Sensing Application

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Abstract : We report a facile synthesis of metal nano particles (NPs) on graphene layer via galvanic displacement reaction between graphene-buffered copper (Cu) and metal ion-containing salts. Diverse metal NPs can be formed on graphene surface and their morphologies can be tailored by controlling the concentration of metal ion-containing salt and immersion time. The obtained metal NP-decorated single-layer graphene (SLG) has been used as hydrogen gas (H2) sensing material and exhibited highly sensitive response upon exposure to 2% of H2.

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