

## Highly-active Pd-complexed Graphene Oxide Catalyst for Cross-Coupling in Aqueous Phase

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Catalysts are the useful tools for the various chemical processes including synthesis and conversion. Generally, heterogeneous catalysts are more advantageous in separation from product and reusability than homogeneous catalysts. Here, we report that a highly active Pd-complexed graphene oxide (GO) catalyst for Suzuki cross coupling in aqueous phase. To prepare the Pd-complexed GO catalyst, bulky *n*-heterocyclic carbene-silane precursor was designed and synthesized in homogeneous phase and it was combined on the GO surface by condensation reaction. The catalyst (GO-Pd) was analyzed by SEM, EDS, ESI, etc.. Thereafter, this simple and highly-active catalyst was evaluated by Suzuki C-C coupling between phenyl boronic acid and a phenyl halide which produce the biphenyl compounds in aqueous phase. We identified Suzuki-Miyaura cross coupling between an aryl iodine and phenylboronic acid is so effective in this eco-friendly reaction system.