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Synthesis, characterization, and catalytic performance of Pd/CNT-MOF nanocatalysts in C-C bond formation reactions

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Nanocomposites generally have wide applications in various fields, including drug delivery and catalytic activity for organic synthesis. In this project, an attempt has been made to synthesize a heterogeneous catalyst based on metal-organic frameworks and magnetic carbon nanotubes. A porous multifunctional palladium-based metal-organic framework (MOF) was developed through combined covalent and dative by multi-wall carbon nanotube (MWCNT)[1]–[3]. A novel magnetic metal-organic framework (MMOF) consisting of supported Pd/CNT has been fabricated in this regard. As a result, the fabricated magnetic porous catalyst exhibited catalytic activity in Suzuki-Miyaura cross-coupling reactions. Some of the essential advantages of the synthesized catalyst are; high catalytic activity, short reaction times, mild conditions, high thermal stability, and reusability. Moreover, his porous magnetic nanomaterial can be used as a new support to immobilize other metals in different catalytic reactions.



Keywords: MWCNT, Palladium chloride, Suzuki Reaction, and nanocatalyst.

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