PREFACE

Metal oxide NPs have been explored for finding out apt options in the domain of catalysis and environmental remediation. Replacing conventional catalyst like palladium, cheaper and easily synthesized copper oxide NPs have been utilized in catalysis reaction for the synthesis of biphenyls. A greener procedure, i.e. microwave irradiation has been adopted to prepare palladium NPs and it is successfully used in the formation heterobiphenyls. The simplicity of catalyst preparation, its stability, substrate specificity, easy recovery and regeneration clearly indicate that the catalyst could be reused in various types of catalytic reactions and industrial processes. One-step wet chemical synthesis of azo-biphenyl compounds from nitroaromatic compounds is reported in presence of DMF-water as mixed solvent and CuO NPs as catalyst.

Copper oxide NPs find application in removing heavy metal contaminants like lead from water. Novelity lays on the fact that CuO NPs could be easily regenerated with its almost previous efficiency for decontamination of water. Researchers have reported various NPs for removal of arsenic from water with reusability of used materials. Here, we have used easily lab synthesized iron oxide hydroxide nanoflower to remove arsenic from contaminated water.

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