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Supramolecular Ensemble of TICT-AIEE Active Pyrazine Derivative and CuO NPs: A Potential Photocatalytic System for Sonogashira Couplings
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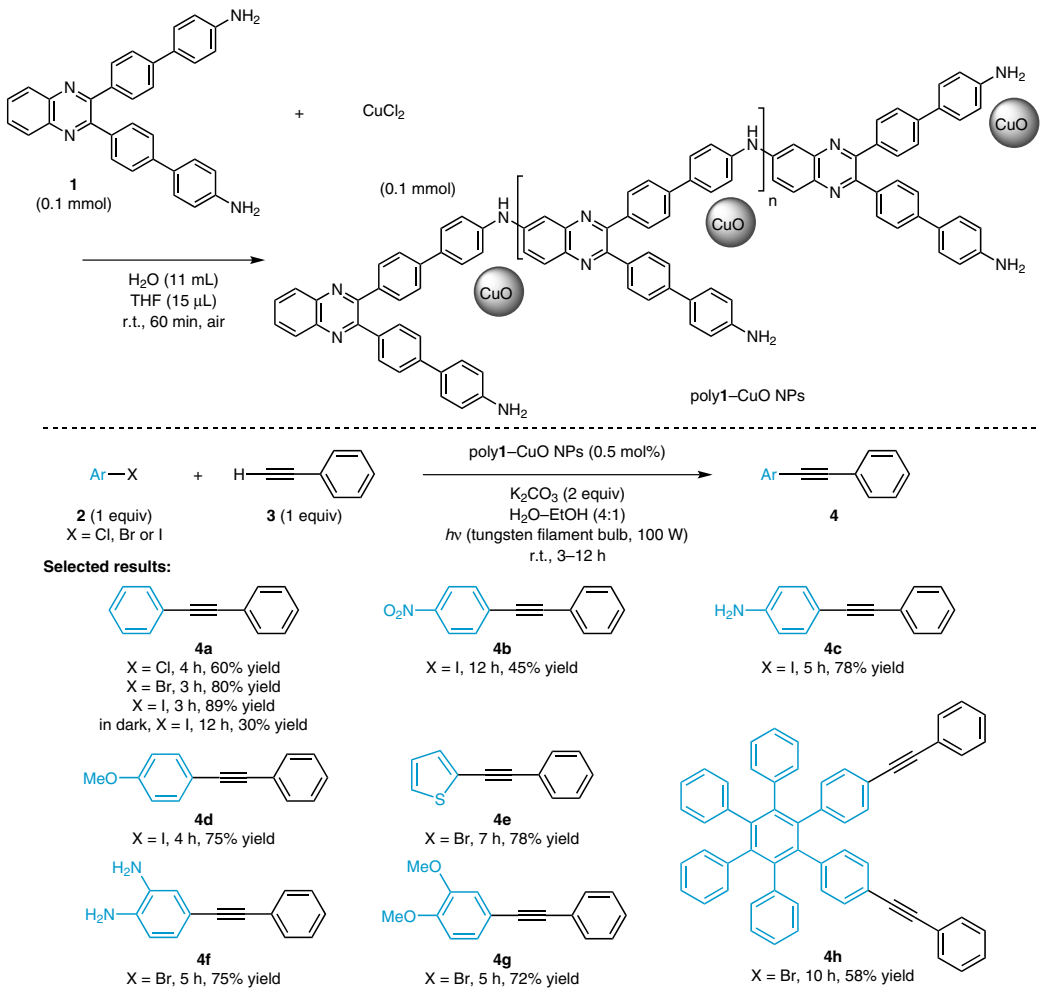
Photocatalytic Sonogashira Coupling on Polymeric Pyrazine–CuO Nanoparticles



Significance: CuO nanoparticles stabilized on a polymeric amine (poly**1**–CuO NPs) were prepared by treatment of $CuCl_2$ with the benzopyrazine-derived amine **1** in water under air. Poly**1**-CuO NPs promoted the photocatalytic Sonogashira coupling of aryl halides **2** with ethynylbenzene (**3**) under visible-light irradiation to give the corresponding products **4** in ≤89% yield.

Comment: Poly**1**–CuO NPs were characterized by means of FT-IR and UV-vis, and fluorescence spectroscopy and XRD, SEM, and TEM analyses. The reaction of iodobenzene with **3** in darkness gave **4a** in 30% yield. In the absence of poly**1**, CuO nanoparticles catalyzed the reaction to give **4a** in 48% yield in 12 hours. Poly**1**–CuO NPs were reused five times without significant loss of their catalytic activity.

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Polymer-Supported Synthesis

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