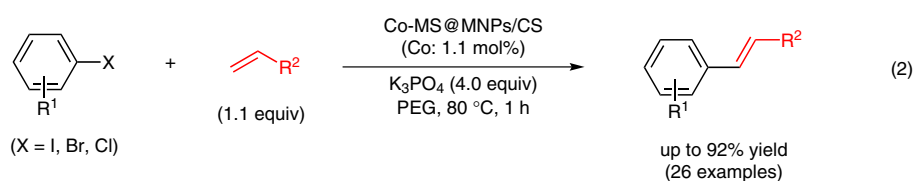
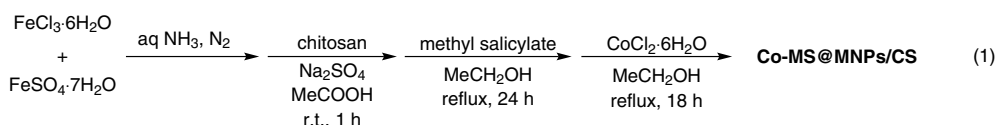
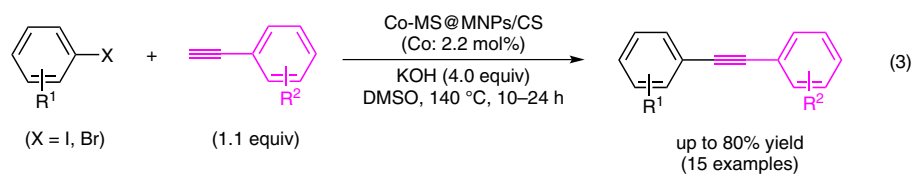
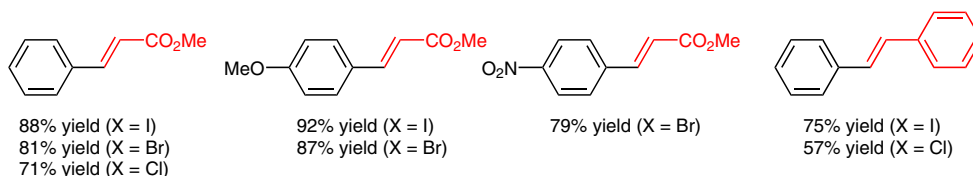


A. R. HAJIPOUR\*, F. REZAEI, Z. KHORSANDI\* (ISFAHAN UNIVERSITY OF TECHNOLOGY, IRAN AND UNIVERSITY OF WISCONSIN, MADISON, USA)  
 Pd/Cu-Free Heck and Sonogashira Cross-Coupling Reaction by Co Nanoparticles Immobilized on Magnetic Chitosan as Reusable Catalyst  
*Green Chem.* **2017**, *19*, 1353–1361.

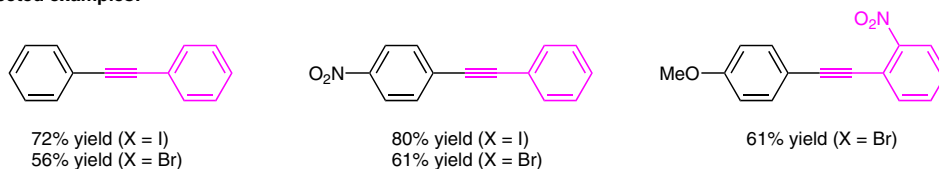
## Heck and Sonogashira Reactions on Magnetic Cobalt Nanoparticles



Selected examples:



Selected examples:



**Significance:** A magnetic, chitosan-supported, methyl salicylate–cobalt complex (Co-MS@MNPs/CS) was prepared as shown in eq. 1. Co-MS@MNPs/CS catalyzed the Heck reaction of aryl halides with terminal olefins to give the corresponding internal alkenes in  $\leq 92\%$  yield (eq. 2, 26 examples). Co-MS@MNPs/CS also promoted the Sonogashira reaction of aryl iodides or bromides with arylacetylenes to give the corresponding diarylacetylenes in  $\leq 80\%$  yield (eq. 3, 15 examples).

**Comment:** The catalyst was characterized by means of FT-IR, TGA, EA, XRD, FE-SEM, SEM-EDX, TEM, magnetization curve, and ICP analyses. In the Heck reaction of iodobenzene with methyl acrylate, the catalyst was recovered and reused four times without loss of its catalytic activity.

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