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Mesoporous polyacrylic acid supported silver nanoparticles as an efficient catalyst for reductive coupling of nitrobenzenes and alcohols using glycerol as hydrogen source

Usha Mandi,<sup>a</sup> Anupam Singha Roy,<sup>a,b</sup> Sudipta K. Kundu,<sup>c</sup> Susmita Roy,<sup>a</sup> Asim Bhaumik,<sup>\*,c</sup> Sk. Manirul Islam<sup>\*,a</sup>

<sup>a</sup>*Department of Chemistry, University of Kalyani, Kalyani, Nadia, 741235, W.B., India*

<sup>b</sup>*Department of Chemical Sciences, Indian Institute of Science Education and Research (IISER) Kolkata, Mohanpur - 741246, India*

<sup>c</sup>*Department of Materials Science, Indian Association for the Cultivation of Science, Kolkata - 700032, India*

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## Abstract

Silver nanoparticle immobilized mesoporous cross-linked polyacrylic acid (Ag-MCP-1) has been synthesized via aqueous-phase polymerization of acrylic acid followed by the surface immobilization with silver nanoparticles. The nanocomposite material has been characterized by different spectroscopic techniques. Powder X-ray diffraction patterns revealed the formation of silver nanoparticles, while transmission electron microscope image showed that Ag nanoparticles are formed and uniformly dispersed in the mesoporous polyacrylic acid. The Ag-MCP-1 nanocomposite can be used as an efficient heterogeneous catalyst in the reductive coupling of nitrobenzenes and alcohols using glycerol as hydrogen source. This nanocomposite can be reused more than five times without any significant decrease in its catalytic activity.

**Keywords:** Mesoporous material, Polyacrylic acid, Silver nanoparticles, Amination, Nitrobenzenes, Glycerol.

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