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Advances in polymer supported catalyst

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Polymers have recently emerged as a versatile support material for the deployment of catalysts. New developments pertaining to the application of polymer supported catalysts are reviewed with a special focus on methodology for carbon-carbon formation. The reactions that are covered include the classical Suzuki, Sonogashira and Heck couplings. Polymer-supported catalysts have many advantages such as, reaction of active intermediates by hold and release, selectivity and immobilization of toxic reagents and byproducts. Methods for carbon-carbon cross-coupling such as the Suzuki, Heck and Sonogashira reactions are the most common applications for polymer bound palladium catalysts. There are several of methods for performing the Suzuki reaction on solid phase, either by means of polymer bound catalysts or with the substrate tethered to a support. Recently much of the focus in the area of polymer supported catalyst has been on the ability to recycle the catalyst, essential from a green chemistry point of view and in addition to limit the extent of leaching of the metal from the solid support. Some polymers such as polythiophene, polypyrrole and polyaniline have been widely studied as supports to disperse metallic particles. Moreover, polymer supported catalyst drawn much attention for electrochemical energy conversion devices such as fuel cells and batteries. Many interesting new polymeric based catalysts have been widely used as electrocatalyst because of their unique optical, electronic, chemical and mechanical properties. In short polymer supported catalysts are more flexible due to various options available for introducing functional groups on polymers.

Biography

Suresh S Shendage has completed his PhD from Institute of Chemical Technology, Mumbai, India. He is an Assistant Professor of Chemistry at KET'S Vinayak Ganesh Vaze College of Arts, Science and Commerce, Mumbai, India. He is also a Research Guide in Chemistry, University of Mumbai. He has published more than 12 papers in reputed journals and is a Life Member of Indian Science Congress.

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