## Synthesis of Solid Polymeric Materials by Maghnite-H<sup>+</sup> as a Green Catalyst

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**Abstract :** The Solid Polymeric Materials have been successfully prepared by the copolymerization of e-caprolactone (CL) and poly (ethylene glycol) (PEG) employing Maghnite-H+ at 80°C. Maghnite-H+ is a solid catalyst non-toxic. The presence of PEG chains leads to a break in the growth of PCL chains and consequently leads to the copolymer tri-block PCL-PEG-PCL. The objective of this study was to synthesize and characterize of Solid Polymeric Materials. The highly hydrophilic nature of polyethylene glycol has sparked our interest in developing a Solid Polymeric based e-caprolactone and poly (ethylene glycol). PCL and PEG are biocompatible materials. Their ring-opening copolymerization using Maghnite H+ makes to the Solid Polymeric Materials. The morphology and structure of Solid polymeric Materials were characterized by <sup>1</sup>H and <sup>13</sup>C-NMR spectra and Gel Permeation Chromatography (GPC). This paper developed the application of Maghnite-H+ as an efficient catalyst by an easy-to-handle procedure to get solid polymeric materials. A cationic mechanism for the copolymerization reaction was proposed.

Keywords : block copolymers, maghnite, montmorillonite, poly(e-caprolactone) Conference Title : ICSPM 2018 : International Conference on Solid Polymeric Materials Conference Location : Dublin, Ireland Conference Dates : October 22-23, 2018

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