

Polymer Advancement with Poly(High Internal Phase Emulsion) Poly(S/DVB) Modified via Layer-by-Layer for CO₂ Adsorption

Authors : Saifon Chongthub

Abstract : The purpose of this research is to synthesize adsorbent foam for CO₂ adsorption. The polymer was prepared from poly High Internal Phase Emulsion (PolyHIPE) using styrene as monomer and divinylbenzene as comonomer. Its morphology was determined by Scanning Electron Microscopy (SEM). To further increase CO₂ adsorption of the prepared polyHIPE, the layer by layer (LbL) technique was applied, which alternated polyelectrolyte injection between layers of Poly(styrenesulfonate) (PSS) and Poly(diallyldimethyl-ammonium chloride)(PDADMAC) as primary layer, and layers of PSS and polyethyleneimine (PEI) as secondary layer.

Keywords : high internal phase emulsion, polyHIPE, surface modification, layer by layer technique, CO₂ adsorption

Conference Title : ICCEE 2014 : International Conference on Chemical and Environmental Engineering

Conference Location : Barcelona, Spain

Conference Dates : February 27-28, 2014