

초임계 이산화탄소에서 SiO₂ Inverse Opal의 제조

김아람, 문준혁, 임종성*
서강대학교 화공생명공학과
(limjs@sogang.ac.kr*)

SiO₂ inverse opals were produced in supercritical carbon dioxide with three-dimensional PS (Polystyrene) latex arrays as templates. The polymeric templates were reacted with TEOS (tetraethyl ortho-silicate) and H₂O in scCO₂ at certain Conditions. After calcination of this template, highly porous materials replicating the structure of the original template were obtained. The porosity of the materials obtained for each template is different. Furthermore, shrinkage of the network upon condensation in scCO₂ was small. The synthesis of inverse opals in scCO₂ overcomes some of the limitations of the liquid-phase techniques, being a faster method of synthesis and, at the same time, rendering materials of unique properties.