

### Formation Process of Titania Inverse Opals within Supercritical Condition

유희민, 임종성\*, 문준혁, 유기풍  
서강대학교  
(limjs@sogang.ac.kr\*)

It has been much attention to produce ordered porous materials due to its wide range of applications. For synthetic method, we choose supercritical deposition which can overcome some limitations of the conventional liquid-phase techniques. By use of three-dimensional latex array templates, sol-gel reaction of titanium isopropoxide in  $scCO_2$  is conducted. The polymeric templates were reacted with titanium isopropoxide [ $Ti(OPri)_4$ ] used as precursors of titania and Ethanol in  $scCO_2$  at certain Conditions. After calcinations of templates, the inverse opal materials obtained. The porosity of the materials obtained for each template is different. Furthermore, shrinkage of the network upon condensation in  $scCO_2$  was small. Scanning electron microscopy(SEM) was used for characterization.