

### Studies On the Synthesis of Periodic Mesoporous Silicas Material

최가람<sup>1</sup>, 정재선<sup>1,2</sup>, 이재석<sup>1,3</sup>, 문동주<sup>1,2,\*</sup>  
<sup>1</sup>KIST; <sup>2</sup>UST; <sup>3</sup>고려대학교  
(djmoon@kist.re.kr\*)

A novel synthesis route for Silica Hollow Sphere(SHS) with meso structure has been found under recent investigation. In this study diverse parameters were applied to find out the structure of SHS. According to SEM results temperature of solution was strongly affected the behavior of partaking species. Tetramethoxysilane (TMOS) is used as silica precursor, P123 polymer employed as a neutral template, ethanol as solvent and NaF as an electrolyte. The prepared SHS was characterized by N<sub>2</sub> physisorption, low angle XRD, and SEM/EDX and TEM/EDX techniques for structure elucidation.

The results suggested that the synthesis parameters effects the structure of SHS in terms of size and frame wall thickness which depends on the probability of polymerization of Silica as following hydrolysis and condensation.