

### Development of Coumarin Modified Si-MCM-41 for Drug Delivery System

이태규\*, Manickam Selvaraj, 김병후<sup>1</sup>, 민병렬  
연세대학교 화학공학과; <sup>1</sup>Yonsei Center for Clean Technology  
(teddy.lee@yonsei.ac.kr\*)

The mesoporous Si-MCM-41 molecular sieves using different surfactant for different pore sizes have been synthesized under hydrothermal conditions. The materials were modified by coumarin derivatives for the properties of hinged double doors (either pore size closed). The surfactants were removed from the synthesized Si-MCM-41 using dilute hydrochloric acid under extraction method. The materials have been used for absorption and released of drug as ibuprofen under photo-irradiation. The ibuprofen absorbed by the mesoporous materials when the coumarin dimersed within pores while the ibuprofen released slowly from the materials when the dimersed coumarin was cleavaged under photo-irradiation conditions. The materials results and absorbed-released results will be presented.