

## 나노다공구조를 이용한 지능형 약물전달 시스템

장정호\*

한국요업(세라믹)기술원

(jhchang@kicet.re.kr\*)

Work presented here describes an innovative approach for the bioapplication of the hierarchically ordered nanoporous materials to smart drug delivery system. This is a very simple and flexible approach to control the drug-release on the nanometer scale of ordered linear porous channels and L3-phase (sponge-phased) hybrid nanogel based on tailoring network of thermosensitive polymer, poly(N-isopropylacrylamide (PNIPAm). Sustainable positive drug release profile is obtained and the drug slowly diffuses out of the porous channels. The overall release rate can be adjusted by changing the composition of the nanogel. The drug release showed a sustained positive thermosensitive release profile by suggested nanodiffusion mechanism in which the overall release amount was controlled by changing the pore channel size. The efficiency of drug-loaded and drug-release were calculated by solid state UV-Vis. spectrophotometric method compared the unmodified and PNIPAm-modified nanoporous materials with various pore sizes.