

### Synthesis of pickering emulsion having PNIPAm microgels

김유진, 이종휘\*  
중앙대학교  
(jong@cau.ac.kr\*)

Hydrogel is a hydrophilic material that maintains three-dimensional network structures when it is dipped into water. Because a hydrogel containing large amounts of water behaves like a tissue, it has been the material of choice for many applications in biomaterials and medicaments. Pickering emulsion is stable in the presence of stabilizers at liquid-liquid system. Using these characteristics, Pickering emulsion system has been studied as an attractive method in order to make unique nano/micro structure. In this study, we obtained microgels using the characteristics of hydrogel and Pickering emulsion, which can be transformed into gel particles of anisometric structure. First, water phase containing monomer and initiator and oil phase containing nanoparticles were mixed, and this emulsion was stabilized by nanoparticles. Water phase was cross-linked by UV-light. Then, we obtained microgels trapped by nanoparticles. Hydrogel particles trapped by microgels were then synthesized through Pickering emulsion system using microgels as stabilizers. These hydrogels having microgel structure can be served as delivery vehicles for biomolecules, drugs, cosmetics and living cells.