

## Modulation of Reversible Color Switch of Polydiacetylene Supramolecules

김태영, 안동준\*, 김종만<sup>1</sup>

고려대학교 화공생명공학과; <sup>1</sup>한양대학교 응용화학공학부

(ahn@korea.ac.kr\*)

Polydiacetylene-based vesicles are interesting materials in view of application to chemical and biological sensors. These vesicles are unique in changing color from blue to red upon specific binding events, caused by shortening of delocalization length of  $\pi$ -electrons along diacetylene backbones. Various binding events including viruses, toxins, glucose, and ionic interactions have been reported detectable. However, most of the polydiacetylene-based chemosensors reported to date function via irreversible fashion. We reported the first example of reversible polydiacetylene supramolecules made of novel single-chain diacetylene derivatives capable of enhancing the strength of hydrogen-bonding of the resulting assemblies. This discovery on the role of the enhanced hydrogen-bonding in color change should be useful for designing reversible colorimetric sensors. In this presentation, we report a novel technique to modulate the colorimetric reversibility of the polydiacetylene supramolecules.