

Quantitative measurements of colorimetric responses of PDA particles using optical laser tweezers

이지은, 이학성, 양찬희¹, 김종만¹, 박범준[†]
경희대학교; ¹한양대학교
(bjpark@khu.ac.kr[†])

Polydiacetylene (PDA) exhibits unique optical properties in response to diverse external stimuli, such as temperature, pH, molecular recognition, and methanical stress. PDA is prepared by polymerizing self-assembled diacetylene monomers through 365nm UV-radiation. Typically, blue-colored PDA turns the color to red in the presence of such stimuli that partially distort the π -conjugated polymer backbone. There have been numerous studies of PDA used as sensors at a bulk scale, whereas only a relatively small number of studies have been conducted on colorimetric sensor applications at an individual particle level. In this work, the effect of thermal stress generated by highly focused laser beam on the colorimetric response of PDA is quantitatively investigated using optical laser tweezers.