

Clustering of Iron Oxide Nanocrystals in Conjugated Polymer Nanoparticles for Enhanced, Simultaneous Photoacoustic and Magnetic Effects

팜티투이동, 김태형¹, 채정완¹, 박주현^{1,†}

중앙대학교; ¹cau

(jpark@cau.ac.kr[†])

In order to respond to crucial requirements in medical and biomaterial field, especially just using one simple process but with Multi-applicational feedback, the improvements in material science have been considered significant. In this research, we have found a successful combination between two promising materials and importantly showed that the ordered structure in the assemblies of conjugated polymer and iron oxide is the main reason for enhancement of simultaneous magnetic properties, photoacoustic (PA) and photothermal (PT) effects. The hybrid nanoparticles were fabricated by the new method of forming the phase-separated thin film [1] in the incorporation of a donor-acceptor polymer, phospholipid and various of magnetic iron oxide amount. , followed by shattering the thin film to create the water-dispersed nanoparticles. The property of hybrid nanoparticles for both MRI and PT features, the PA effects are characterized through specialized tests in this research.