

Generation of Monodisperse, Shape-controlled Single and Hybrid Core-Shell nanoparticles via a Simple One-Step Process

김종선, 정희태*, 전환진
KAIST
(heetae@kaist.ac.kr*)

In nano biotechnology, optoelectronics and energy research area, various fabrication methods of hybrid nanoparticle have been developed. We developed and demonstrate a method for fabricating highly monodisperse three-dimensional hybrid nanoparticles using a unique top-down method based on secondary sputtering lithography (SSL). Nanostructures that had been formed on a PEDOT sacrificial layer were transferred from the substrate to an aqueous solution in a process that could be used to successfully disperse a variety of nanoparticle shapes and hybrid nanoparticles. The feature size of nanoparticles can be controlled by RIE etching process. By the method, a fluorescent dye (FITC) could be encapsulated within the fabricated hybrid nanoparticles for use in bio-sensing and drug delivery applications