

Synthesis of Size-Tunable and Stable Iron Nanoparticles for Cancer Treatment

Authors : Ambika Selvaraj

Abstract : Magnetic iron oxide nanoparticles (IO) of < 20nm (superparamagnetic) become promising tool in cancer therapy, and integrated nanodevices for cancer detection and screening. The obstacles include particle heterogeneity and cost. It can be overcome by developing monodispersed nanoparticles in economical approach. We have successfully synthesized < 7 nm IO by low temperature controlled technique, in which Fe₀ is sandwiched between stabilizer and Fe²⁺. Size analysis showed the excellent size control from 31 nm at 33°C to 6.8 nm at 10°C. Resultant monodispersed IO were found to be stable for > 50 reuses, proved its applicability in biomedical applications.

Keywords : low temperature synthesis, hybrid iron nanoparticles, cancer therapy, biomedical applications

Conference Title : ICBN 2016 : International Conference on Biotechnology and Nanotechnology

Conference Location : New York, United States

Conference Dates : October 10-11, 2016