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MAJOR RESEARCH INTERESTS

Nano-biomaterials & Nano-medicine, Biomedical Microdevices

Current projects include

1. Fluorescent nanoparticle based biodetection & bioimaging
2. Imaging-guided cancer therapy
3. Microfluidic devices for bacteria separation and multiplexing bioassays

EDITORIAL BOARD MEMBERSHIPS

Recent Patents on Nanotechnology, The Open Nanomedicine Journal, International Journal of Biomedical Engineering and Consumer Health Informatics, Central European Journal of Engineering, ISRN Nanotechnology, Journal of Biochips & Tissue Chips

RECENT REPRESENTATIVE PUBLICATIONS

1. Idris NM, Gnanasammandhan MK, Zhang Y, etc. In vivo photodynamic therapy using upconversion nanoparticles as remote controlled nano-transducers. *Nature Medicine* 18, 1580-1585 (2012).
2. Gnanasammandhan MK, Idris NM, Zhang Y. Remote activation of biomolecules in deep tissues using NIR-to-UV upconversion nanotransducers. *PNAS* 109, 8483-8488 (2012).
3. Guo HC, Idris NM, Zhang Y. LRET-Based Biodetection of DNA Release in Live Cells Using Surface-Modified Upconverting Fluorescent Nanoparticles. *Langmuir* 27, 2854-60 (2011).
4. Chatterjee DK, Gnanasammandhan MK, Zhang Y. Small Upconverting Fluorescent Nanoparticles for Biomedical Applications. *Small* 6, 2781-95 (2010).
5. Qian HS, Guo HC, Ho PCL, Mahendran R, Zhang Y. Mesoporous-Silica-Coated Up-Conversion Fluorescent Nanoparticles for Photodynamic Therapy. *Small* 5, 2285-90 (2009).
6. Li ZQ, Zhang Y, Jiang S. Multi-color core-shell structured upconversion fluorescent nanoparticles. *Advanced Materials* 20, 4765-4769 (2008).
7. Zhang Y & Wang C. Micropatterning of proteins on 3D porous polymer film fabricated using breath figure method. *Advanced Materials* 19, 913-916 (2007).
8. Li ZQ & Zhang Y. Monodisperse silica coated PVP/NaYF₄ nanocrystals with multicolor upconversion fluorescence emission. *Angewandte Chemie International Edition* 45, 7732-7735 (2006).