

NANO-BIO SEMINAR

Nanoparticle Fluorescence Based Technology For Biological Applications

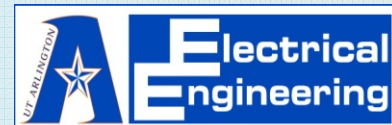
Dr. Wei Chen

Monday, October 27, 2008, 2.30 pm, Rady Room NH 6th Floor

Abstract: This presentation will mainly discuss the potential applications of luminescence nanoparticles for biomedical applications. There will be a discussion on the definition of so called nanotechnology. The methods for making highly luminescence semiconductor nanoparticles and nanoparticle bioconjugation will be introduced. My projects for using near-infrared and upconversion nanoparticles for *in vivo* cancer imaging, particularly for tumor vascular imaging, hypoxia and dose imaging will be focused. The basic concepts for nanoparticle photodynamic therapy in combination with radiation therapy for cancer treatment will be presented. Finally, the application of nanoparticle systems for bacteria and virus detection based on energy transfer and antigen-antibody interaction as well as quantum dots for fingerprint detection will be discussed.



Speaker: Dr. Wei Chen is an assistant professor in Physics Department at UTA, since 2006. He received his Ph. D. in Chemistry from Peking University, Beijing, China. In 2000, Dr. Chen joined Nomadics, where he serves as a senior and leading scientist in Nanotechnology. Dr. Chen pioneered the photostimulated luminescence of nanoparticles and the nanoparticle self-lighting photodynamic therapy for cancer treatment. He has been funded by National Natural Science Foundation of China, President Special Funds of Chinese Academy of Science, NSF, NIH, DHS, DOE, Army Medical and Air Force Office of Scientific Research on projects utilizing nanoparticles for solid state lighting, full-color displays, optical storage, radiation detection and dosimetry, X-ray medical imaging and biological *in vivo* imaging, cancer diagnosis and treatment. He has 4 US patents and 7 US patents pending. He has authored more than 130 journal publications, 3 invited review articles, 7 book chapters and one edited book. He serves as American editor for the *Journal of Nanoscience and Nanotechnology* & the associate editor for *Journal of Biomedical Nanotechnology* published by American Scientific Publishers.



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