

Physics Colloquium

Michigan Technological University

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Room 139 Fisher Hall



Functionalized Metallic Nanomaterials for Cancer Therapy

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Abstract: Among a plethora of nanomaterials designed and synthesized for biomedical applications, carbon nanotube, gold nanorod, and iron oxide owing to their unique features have been demonstrated to be potential for the treatment of cancers. In my group, these metallic nanomaterials stabilized by chitosan and its derivatives were characterized by analytical tools. These chitosan-incorporated nanomaterials were further conjugated with biomolecular moiety to specifically target cancer cells. The anticancer effectiveness of these functionalized metallic nanomaterials was shown by photothermal therapy triggered by near-infrared laser light and photodynamic therapy induced by light emitted diode light.

Bio: Dr. Ching-An Peng earned a B.S. in Chemical Engineering at National Taiwan University in 1985; and a Ph.D. Chemical Engineering at the University of Michigan in 1995. After earning his doctoral degree, he worked as a joint postdoctoral fellow at the University of British Columbia and the StemCell Technologies. In 1997, he started his assistant professorship at the University of Southern California in Chemical Engineering Department. In 2006, he joined the Department of Chemical Engineering at the National Taiwan University with the rank of full professor. In 2008, he joined the Department of Chemical Engineering at Michigan Technological University as the first holder of the James and Lorna Mack Endowed Chair in Bioengineering. His research interests include bio-based products, drug/gene delivery, nanomedicine, and tissue engineering.