

## Wen-Tyng Li

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Associate Professor, Department of Biomedical Engineering

Stem Cell Biology, Light Therapy, Photodynamic Therapy, Tissue Engineering, Microbiology



### ◆ Research Interests

- ◆ Wen-tyng Li teaches courses including Biology, Biochemistry, Molecular Biology, Tissue Engineering, and Culture of Animal Cells. Her research interests are in the areas of cell biology and tissue engineering. Research topics include (1) to study the bio-stimulating effects on mesenchymal stem cells by low level light irradiation, (2) to explore the photodynamic properties of chlorophyll derivatives and their death pathways on cancerous cells, and (3) to apply gold nanoparticles and electrospun nanofibers in tissue engineering.

### ◆ Selected Publications

- ◆ K.-H. Hu, K.-N. Lin, W.-T. Li, H.-M. Huang\* (2008) Effects of Meropack in the middle meatus after functional endoscopic sinus surgery in children with chronic sinusitis. *Int. J. Pediatric Otorhinolaryngology*. 72: 1535—1540
- ◆ K.-Y. Huang, C.-L. Shiu, P.-S. Wu, Y. Wei, J.-M. Yeh\*, W.-T. Li (2009) Effect of amino-capped aniline trimer on corrosion protection and physical properties for electroactive epoxy thermosets. *Electrochimica Acta*. 54: 5400–5407
- ◆ W.-T. Li\* (2009) Nanotechnology-based strategies to enhance the efficacy of photodynamic therapy for cancers. *Current Drug Metabolism*. 10(10): 851-860
- ◆ M.-F. Hsieh\*, H.-W. Wen, C.-L. Shyu, S.-H. Chen, W.-T. Li, W.-C. Wang, W.-C. Chen (2010) Synthesis, in vitro macrophage response and detoxification of bamboo charcoal beads for purifying blood. *Journal of Biomedical Materials*, 94A(4): 1130-1140
- ◆ W.-T. Li\*, Y.-C. Leu, J.-L. Wu (2010) Red-light light emitting diode irradiation increases the proliferation and osteogenic differentiation of rat bone marrow mesenchymal stem cells. *Photomedicine and Laser Surgery*. 28 (S1):S157-S165
- ◆ W.-T. Li\*, R.-J. Gau, Y.-S. Weng, C.-T. Hsieh, P.-S. Li, Cell culture and method for screening for a compound useful in the treatment or prevention of hepatic cirrhosis (Patent: US7745120 B2. Jun.29, 2010 issued)
- ◆ J.-H. Fan, W.-T. Li\*, W.-I Hung, C.-P. Chen, J.-M. Yeh (2011) Cytotoxicity and differentiation effects of gold nanoparticles to human bone marrow mesenchymal stem cells. *Biomedical Engineering: Applications, Basis and Communications*, 23(2): 141-152
- ◆ W.-T. Li\* (2012) Nanoparticles for Photodynamic Therapy. *Handbook of Biophotonics*. First Edition. Edited by J. Popp. 2:321-336

## ◆ Recent Research Projects

- ◆ The study of the migration of bone marrow derived mesenchymal stem cells and the relevant underlying mechanism influenced by low level red and near infrared light therapy, sponsored by National Science Council (August 2011 ~ July 2014)
- ◆ Applications of novel photothermal wound dressing system for the treatment of bedsore, sponsored by National Science Council (August 2010 ~ July 2013)
- ◆ Preparation and Properties of Three Dimensional Porous Scaffold Materials for Adhesion and Differentiation of Neural Stem Cells, sponsored by National Science Council (August 2010 ~ July 2013)