

Ji-Lin Shen

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Ph.D., National Taiwan University

Professor, Department of Physics

Semiconductor Physics, Properties and Applications of Nano-materials, Optical Properties of Solids



◆ Research Interests

- ◆ Ji-Lin Shen is a professor in Physics Department. Courses taught include General Physics, Optical properties of solids, and Special topics on semiconductor optics. His research topics include (1) The Optical properties of Au nanoclusters; (2) Optical investigations of semiconductor solar cells.

◆ Selected Publications

- ◆ M. D. Yang; Y. K. Liu; J. L. Shen; C. H. Wu; C. A. Lin; W. H. Chang; H. H. Wang; H. I. Yeh; W. H. Chan and W. J. Parak (2008), "Improvement of conversion efficiency for multijunction solar cells by incorporation of Au nanoclusters", *Optics Express*, Vol.16 , No.20 p.15754 – 15758.
- ◆ G. W. Shu, C. C. Lin, H. P. Chung, J. L. Shen, C. A. J. Lin, C. H. Lee, W. H. Chang, W. H. Chan, H. H. Wang, H. I. Yeh, C. T. Yuan, and J. Tang(2009), "Recombination dynamics of photoluminescence in thiol-protected gold nanoclusters" *Applied Physics Letters*, Vol.95 , p.261911.
- ◆ G. W. Shu, T.Y Chen, J. L. Shen, C. A. J. Lin, W. H. Chang, W. H. Chan, H. H. Wang, W. C Chou, (2010) ."Interrelation of transport and optical properties in gold nanoclusters", *Applied Physics Letters*, Vol.97 , p.123108.
- ◆ G.W. Shu, C.C. Lin, H.T. Lin, T. N. Lin, J. L. Shen, C.H. Chiu, Z.Y. Li, H.C. Kuo, S.C. Wang, C.A. Lin, W.H. Chang, (2011) "Energy transfer from InGaN quantum wells to Au nanoclusters via optical waveguiding", *Optics Express*, Vol. 19, p. A194.

◆ Recent Research Projects

- ◆ "Effects of incorporation of nanoparticles on conversion efficiency of solar cells" and "Estimate the junction temperature of solar cells" sponsored by Institute of Nuclear Energy Research (January 2010 ~ December 2012)
- ◆ "Carrier lifetime and quantum effects of photoluminescent gold nanoclusters under different biological micro-environments" sponsored by National Science Council (August 2011 ~ July 2013)