

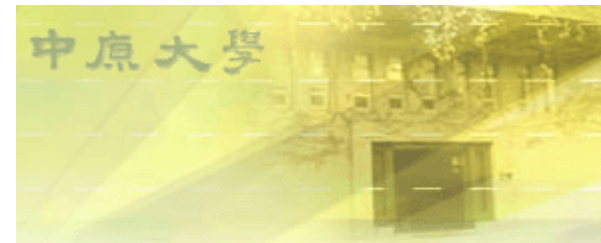
Szetsen Lee

E-mail: slee@cycu.edu.tw

Ph.D., University of Chicago

Professor, Department of Chemistry

Physical Chemistry, Spectroscopic Analysis, Plasma-Materials Interactions



◆ Research Interests

- ◆ Szetsen Lee is a professor in the physical chemistry area of the Chemistry Department. Courses taught include Thermodynamics, Kinetics, Quantum Chemistry, Spectroscopy, Mathematics for Chemists, and Nanotechnology. Prof. Lee's research is in a variety of spectroscopic analyses and plasma treatment of materials. Research topics include Raman spectroscopy of carbon nanotubes, Surface-enhanced-Raman-scattering (SERS) study of adsorbate-substrate interactions, Synthesis of novel SERS substrates, Optical emission study of hydrocarbon plasmas, Optical band gap tuning of semiconductor films by plasma treatment, Photo- and plasma-degradation of dye solutions.

◆ Selected Publications

- ◆ X. Liu, C.-Y. Mou, S. Lee, Y. Li, J. Secrest, B. W.-L. Jang, "Room temperature O₂ plasma treatment of SiO₂ supported Au catalysts for selective hydrogenation of acetylene in the presence of large excess of ethylene", *J. Catalysis*, 285, 152–159 (2012).
- ◆ S. Lee,* J.-W. Peng, and C. Y. Ho, "Reversible tuning of ZnO optical band gap by plasma treatment", *Mater. Chem. Phys.* 131, 211-215 (2011).
- ◆ S. Lee* and J.-W. Peng, "Observation of the diameter-dependent Raman dispersion effect in chemically oxidized multiwalled carbon nanotubes", *J. Phys. Chem. Solids*, 72, 1133-1139 (2011).
- ◆ S. Lee,* J.-H. Wong, and S.-J. Liu, "Fluorescence and Raman Study of pH Effect on the Adsorption Orientations of Methyl Red on Silver Colloids", *Applied Spectroscopy*, 65, 996-1003 (2011).
- ◆ S. Lee,* J.-W. Peng, and C.-H. Liu, "Probing plasma-induced defect formation and oxidation in carbon nanotubes by Raman dispersion spectroscopy", *Carbon* 47, 3488-3497 (2009).

◆ Recent Research Projects

- ◆ Photoluminescence Study of Carbon Nanotubes, sponsored by National Science Council (August 2010 ~ July 2013)
- ◆ Plasma Modification of Carbon Nanotubes: Spectroscopic Diagnostics and Mechanisms Study, sponsored by National Science Council

(August 2009 ~ July 2010)

- ◆ Selective Plasma Chemistry: Fundamental Studies and Applications, sponsored by National Science Council (August 2007 ~ July 2009)