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Professor

B.S. Chemistry, National Cheng Kung University 1972

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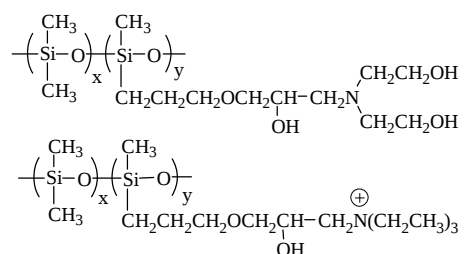
Office Room 93C07, Chemical Engineering Building

Research Interests:

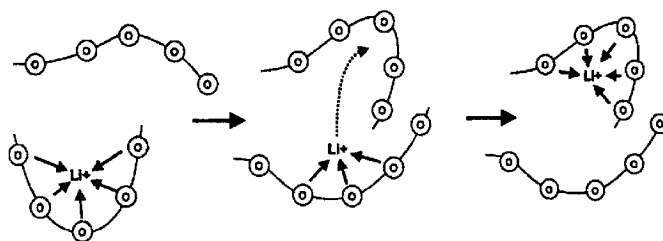
My research interests include polymer syntheses for use in surfactants and fire-retarding materials. Another emphasis area is on new solid polymer electrolyte syntheses for application in Li-cell and fuel cell. My current research activities are:

(1) Silicone and nonsilicone type of water-soluble polymers. applied for:

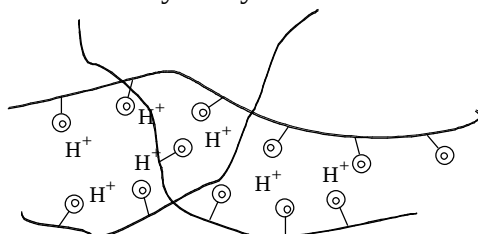
(a) Surface active agents



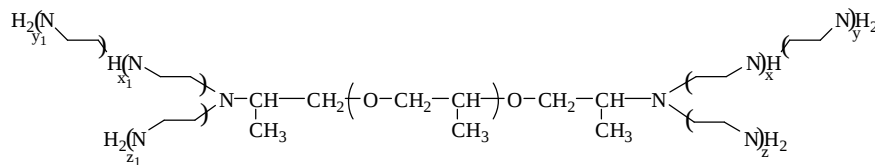
(b) Solid polymer electrolytes for Li-cell



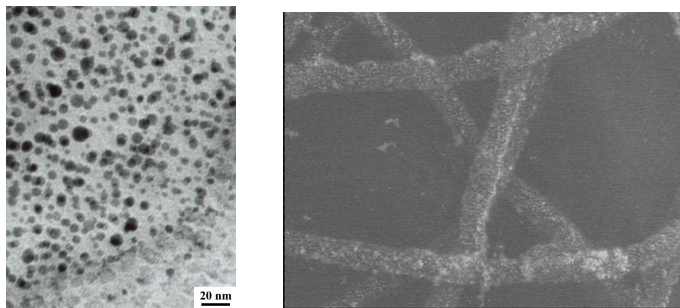
(c) Proton-transferring layers and catalytic layers for fuel cell



(d)Dendritic polymer



(2)Preparation and application of metallic nanomaterials



(3) Fire-Retarding Materials

- (a)Reactive and non-reactive P/N containing flame-retarding compounds
- (b)Inorganic and organic/inorganic hybrid fire retarding materials

Representative Publications:

1. Liang, W. J.; Kuo, P. L., **2004**, "Solid Polymer Electrolytes VIII: Effect of LiClO_4 -doped Level on the Microstructure and Ionic Conductivity of A Chemical-covalently Polyether-siloxane Hybrid Electrolyte", *Polymer*, 45, 1617.
2. Liang, W. J.; Kuo, P. L., **2004**, "Study of DSC, Ionic Conductivity and ^7Li NMR Spectral Changes Associated with Cation Complexation in an Epoxy-Crosslinked Polysiloxane/Polyether Electrolyte", *Macromolecules*, 37, 840.
3. Kuo, P. L., Chen, C. C., Yuen, S. M., **2004**, "Protection Effects of Hydrophile-Grafted Silicone Copolymers on the Formation of Colloidal Silver Nanoparticles", *J. Phys. Chem. B*, 108, 5541.
4. Kuo, P. L.; Hou, S. S.; Lin, C. Y.; Chen, C. C.; Wen, T. C., **2004**, "Solid Polymer Electrolytes I: Preparation, Characterization and Ionic Conductivity of Gelled Polymer Electrolyte Based on Novel Crosslinked Siloxane/ Poly(ethylene glycol) Polymers", *J. Polym. Sci. Part A: Chem. Ed.*, 42, 2051.
5. Liang, W. J.; Kao, H. M.; Kuo, P. L., **2004**, "Morphology and Ionic Conductivity Studies of Organic-Inorganic Hybrid Based on Epoxy-crosslinked Polysiloxane/Polyether Networks", *Macromol. Chem. & Phys.*, 205, 600.
6. Kuo, P. L.; Ni, S. C.; Lin, Y. C., **2004**, "Hyperbranch-polyethylenminated Functional Polymers III: Synthesizing Thiophosphate-containing Hyperbranch-polyethylenminated Polyoxypyropylenediamine by a Simple Approach and its Behaviors at an Oil/Metal Interface under Extreme Pressure", *J. Polym. Sci. Part A: Chem. Ed.*, 42, 5504.