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Education:

Georgia Institute of Technology

Aug 2006 - Present

Major: School of Polymer, Textile & Fiber Engineering.

Advisor: Prof. Satish Kumar

Future Research Field: Polymer/Carbon Nano-tubes Composition.

Tsinghua University, Department of Chemical Engineering Sep 1999 - Jul 2002

Major: Materialogy, Degree: Master of Engineering.

Dissertation: *Phase Separation of Polymeric Alloy Induced by Substrates*

Advisor: Prof. XIE Xuming

Tsinghua University, Department of Chemical Engineering Sep 1995 - Jul 1999

Major: Polymeric Materials Science and Chemical Engineering

Degree: Bachelor of Engineering.

Work Experience:

Shanghai Institute of Applied Physics, Chinese Academics of Science

Key Laboratory of Nuclear Analysis Techniques

Sep 2002 – Jun 2006

Research Assistant with Dr. WU Guozhong.

Research Area: Polymer, Ionic Liquids.

Related Experience:

Research

Research Assistant. Key Laboratory of Nuclear Analysis Techniques, Shanghai Institute of Applied Physics, Sep 2002 - Present

Jan 2005 – Jun 2006

- Synthesized solid and hollow polymer nano-particles by o/w micro-emulsion of Ionic Liquids (ILs), vinyl monomers and water system. The obtained particles are used to further prepare Metal (Metallic Salt) /Polymer multilayer particles.
- Used AFM to study the structural patterns of ILs on a well-defined substrate. Bmim-PF₆ reveals many intriguing structures, such as coexistence of liquid and solid phase, drop-on-the-layer and multilayer, when it is put on the surface of mica at room temperature.
- Prepared stable gold nano-particles in ILs. These particles can be steadily dispersed

in many solvents and their diameters are controllable.

Jan 2004 – Dec 2004

- Investigated the rheological properties of ILs and their mixtures with Polymers and organic solvents.
- Researched in the stable fluorescence spectra of IL [Ch Cl][ZnCl₂] with different molar ratios. Red-shift of emission peak occurs with the increase of excitation wavelength.
- Investigated the polymerization mechanism of vinyl monomers in IL [Ch Cl][ZnCl₂] by copolymerization.
- Studied the influences of IL [Ch Cl][ZnCl₂] on the polymerization of vinyl monomers in it.

Sep 2002 – Dec 2003

- Synthesized environmental friendly phenol-formaldehyde resin adhesive. The obtained adhesive has a very low emitted content of formaldehyde from veneer, less than 0.05mg.L⁻¹.
- Synthesized polylactic acid (PLA) in super critical carbon dioxide (SC-CO₂).

Graduate Research. Department of Chemical Engineering, Tsinghua University, Jan 1999 – May 2002

- Studied the structural evolution of three-dimensional polymer alloys induced by two symmetrical and unsymmetrical substrates. The accelerated coarsening near the substrate is found regardless of the polarity of substrates and a gradient structure can be finally formed.
- Explored polymer blend's coarsening process in a narrow space restricted by two symmetrical substrates.

Laboratorial Management

Research Assistant. Key Laboratory of Nuclear Analysis Techniques, Shanghai Institute of Applied Physics

Jan 2003 – Jun 2006

- Manage and buy laboratorial apparatus and reagents. Maintain laboratorial order and cleanliness.

Oct 2003 – Jun 2006

- Manage, maintain and operate gel permeation chromatography (GPC), Fourier Transform Infrared (FT-IR) spectrometer and ultraviolet (UV) spectrometer.

Publications:

1. “⁶⁰Co γ -Initiated polymerization of vinyl monomers in room temperature ionic liquid/THF mixed solutions” Liu Y.D.; Wu G.Z.[†]; Long D.W.; Zhang G.R. *Polymer* 2005, 46, 8403.
2. “Effects of Ionic Liquid [Me₃NC₂H₄OH]⁺[ZnCl₃]⁻ on γ -Radiation Polymerization of Methyl Methacrylate in Ethanol and N,N-Dimethylformamide” Wu G.Z.[†]; Liu Y.D.; Long D.W.

- Macromol.Rap.Commun.* 2005, 26, 57.
3. “Coexistence of Liquid and Solid Phases of Bmim-PF₆ Ionic Liquid on the Mica Surface at Room Temperature” Liu Y.D.; Zhang Y. †; Wu G.Z. †; Hu J. *J.Am.Chem.Soc.* 2006, 128, 7456.
 4. “Polymorphous crystals from chlorozincate-choline chloride ionic liquids in different molar ratios” Liu Y.D.; Wu G.Z. †; Qi M.Y., *J.Crystal.Growth.* 2005, 281, 616.
 5. “On the mechanism of radiation-induced polymerization of vinyl monomers in ionic liquid” Liu Y.D.; Wu G.Z. † *Radiat.Phys.Chem.* 2005, 73, 159.
 6. “⁶⁰Co γ -irradiation initiated polymerization in ionic liquids – The effect of carbon-chain length of monomer” Liu Y.D.; Wu G.Z. †; Long D.W.; Qi M.Y.; Zhu Z.Y. *Nucl.Instrum.Meth. Part B* 2005, 236, 443.
 7. “Stabilized and size-tunable gold nanoparticles formed in a quaternary ammonium-based room-temperature ionic liquid under γ -irradiation” Chen S.M.; Liu Y.D.; Wu G.Z. † *Nanotechnology* 2005, 16, 2360.
 8. “Preparation of Poly(acrylic acid) Grafted Multi-walled Carbon Nanotubes by a Two-step Irradiation Technique” Chen S.M.; Wu G.Z. †; Liu Y.D.; Long D.W. *Macromolecular* 2006, *In Press*.
 9. “Development of environment friendly phenol-formaldehyde resin adhesive and its bonding properties” Liu Y.D.; Wu G.Z. †; Long D.W. *Zhanjie (Chinese)* 2004, 25, 5.
 10. “The Effect of Interfacial Tensions on The Accelerated Coarsening in Polymer Blend Thin Film” Liu Y.D.; Kong X.M.; Xie X.M. † *Acta.Polym.Sin. (Chinese)* 2002, 6, 824.
 11. “A method of preparing phenol-formaldehyde resin adhesive used in wood and bamboo veneer” Wu G.Z. †; Liu Y.D.; Long D.W. *Patent. (China)* NO. CN-1570008A
 12. “Preparing hollow polymer nano-particles by o/w microemulsion of Ionic Liquids Bmim-PF₆ and monomer” Liu Y.D.; Wu G.Z. †; Qi M.W.; Chen S.M. “2005 China Macromolecular Science Forum” Oct. 10-14. 2005. Beijing. China.
 13. “ γ -ray Initiated polymerization of vinyl monomer in Ionic Liquids” Liu Y.D.; Wu G.Z. †; Long D.W. “The 6th Annual Meeting of Radiation Researches and Radiation Techniques” Oct. 23~25. 2004. Xi’an. China.
 14. “Condensation in super critical carbon dioxide: Polymerization of polylactic acid” Liu Y.D.; Wu G.Z. †; Long D.W.; Yao S.D. “The 2nd International Symposium on Supercritical Fluid Technology for Energy and Environment Applications” Nov. 9~12, 2003. Nagoya. Japan.

Personal Background:

Characteristics: Curious, thoughtful, honest, generous and friendly.

Hobbies: Computer, football, basketball, tennis ball and run.