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EDUCATION

- *B.E. in Polymer Materials and Engineering*, School of Materials Science and Engineering (MSE), North University of China (NUC), China
- *Master in Chemical Science*, Chemical and Life Sciences and Engineering (CLSE), King Abdullah University of Science and Technology (KAUST), Saudi Arabia

EXPERIENCE & PROJECTS INVOLVED

Internships

● Controlled Release & Delivery Lab	Research Assistant	*Sept.,2010-Present*
● Key Laboratory of Education Ministry for New Material Interface Science & Engineering, Taiyuan Univ. of Technology	Research Assistant	*Oct.,2008-July,2010*
● Shanxi Minsheng Plastic Production Plant	Technical Assistant	*July,2009*
● Shanxi Xinhua Chemical Plant	Technical Assistant	*June,2008*

Researches involved

Master Period:

BOEING-SABIC Project *Sept., 2010-present*

- Development high performance carbon nanotube (CNT) reinforced Polyether imide (PEI) composite for BOEING aircrafts
- Different methods have been tried to disperse CNT in the PEI chloroform solution uniformly:
  - ✓ Functionalization CNT with Octadecylamine (ODA) via covalent bonding interaction and noncovalent bonding interaction
  - ✓ High Density Polyethylene (HDPE) crystallization on the surface of CNT via noncovalent bonding interaction
- Spinning coating and casting knife has been used to prepare the PEI composite membrane for further mechanical and conductivity test.

Saudi Aramco Project *Dec., 2010-present*

- "Green" technology and methods are trying to disperse CNT in the PEI matrix homogeneously to prepare PEI composite
  - ✓ Different types of "green" solvent—ionic liquid has been studied to disperse CNT
  - ✓ Specific type of ionic liquid is trying to dissolve the PEI plastic
  - ✓ Coating CNT with natural polymer, cellulose, via ionic liquid to improve the compatibility between the PEI matrix and CNT
- A mini-plastic blending and injection molding machine was designed by our group and manufactured by Machine R&D Center of the Chinese Academy of Sciences
  - ✓ The reinforced materials and plastic matrix can be blended efficiently
  - ✓ Only little raw plastic needed for this machine to simulate the composite preparation conditions for the industry application
- Other reinforced material are trying for high performance PEI composite preparation
  - ✓ Graphene with outstanding electronic, mechanical and thermal properties will be

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tried as excellent reinforced material for high performance PEI composite

- ✓ Layered double hydroxide (LDH), graphite and carbon black with the advantage of high price-performance ration and large amount available will be tried to prepare the highly efficient and cost-effective PEI composite

Undergraduate Period:

Phosphors Preparation for Light Emitting Diode (LED) *Sept,.2008-June, 2010*

- Studies on preparing YAG: Ce^{3+}, Pr^{3+} phosphors via polyacrylamide gel method
  - ✓ The agglomeration phenomenon of the nano-particles was greatly decreased by this method
  - ✓ Experimental studies on optimum preparation process for polyacrylamide gel formation
  - ✓ Compared the influence of temperature, PH value, types of metal ions, dose of initiator and crosslinker on the gel formation speed
- Experimental studies on preparation of $CsVO_4$: Pr^{3+} nano-scale phosphors by polyacrylamide gel method
- Experimental studies on preparation of $CsVO_4$: Pr^{3+} nano-scale phosphors by starch gel system method
  - ✓ Trying an environmental friendly and non-toxic gel system to prepare nanoscale phosphors

PUBLICATIONS

- ✓ Changduo Li, Liuqing Cai, **Lifeng Huang**, etc. Effect of solvents on diels-alder reaction. *J. Technology & Development of Chemical Industry.* 38:01 (2009).
- ✓ Jie Li, **Lifeng Huang**, Yingchun Li, etc. Preparation and characterization of composites of Eu-Tb complex/methacrylate-type polymer. *J. Functional Materials.* 40:1244 (2009)

SKILLS

- **Trained Research facilities**
  DMA, Spinning Coating, NMR (Liquid & Solid), IR, Confocal Microscopy, TGA, DSC, Fluorescence, UV
- **Computer proficiencies**
  Research-aided software: Material Studio, Origin, Matlab, Auto-CAD, Pro/E
  Programming languages: C, C++