Liu, Hua PhD

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EDUCATIONS

- Old Dominion University, Norfolk, VA, USA ***Master in Computer Science*** **2021-2023**
- College of William and Mary, Williamsburg, VA, USA ***M.B.A*** **2018-2020**
- University of Akron, Akron, OH, USA ***Ph. D in Polymer Engineering*** **2007-2013**

PROFESSIONAL EXPERIENCE

Littelfuse, Inc, Plainville, CT **03/2020-Present**

Tech Manager

- Lead a team to manage multiple switch and breaker development projects for automobile manufacturers around the world;
- Manage project budget, take schedule and personnel to meet the product development project's deadline and cost ;
- Work with strategic planning division and marketing team to generate strategies for the company.

CANON USA (Canon Virginia), Newport News, VA **02/2018-03/2020**

R&D Project Manager

- Cooperate with PAVmed Inc to design the formulation and develop the process method to fabricate biomaterials for medical device (DisappEAR resorbable pediatric ear tubes);
- Lead a time to design and build the manufacturing system for scalable aqueous silk fibroin used in medical grade biomaterials;
- Design the specs on the performances and quality of the new biomaterials;
- Coordinate with marketing team to explore the market needs and target customer for the optical devices, medical devices and new biomaterials made by aqueous silk fibroin;

WHIRLPOOL CORPORATION, Benton Harbor, MI **07/2013-02/2018**

Senior Engineer/Project Leader

- Work with cross-function team, including marketing, manufacturing, quality, procurement to deliver the energy efficient appliance products into the market;
- Develop Performance Requirements, System Requirements, and Validation Test Plans (DVP)for to meet the requirements from QA team;
- Analyze the customers' need to identify the product and service requirements of the target customers

National Polymer Innovation Center, University Of Akron, Akron, OH **2007-2014**

Research Assistant/PhD Candidate

- Study the approach to improve the working efficiency of hybrid photovoltaic cells and luminescent devices by exploring the interfacial behaviors of polymers at the surface of semiconducting nanoparticles. -- Sponsored by US Airforce Research Lab [Grant # AFOSR (FA9550-10-1-0236)]
- Investigate the mechanical properties of polymers based nano-composites and study their bionanostructure and biomineralization behaviors with the aims at understanding of complex interfacial phenomena. -- Sponsored by NSF Fundings [Grant # 0955071]

- Study the wireless charging system and materials for Electric Vehicles
  -- Sponsored by Delphi Corporation [University Grant # 1000001137]
- Study the formulation, fabrication, characterization and manufacturing of Degradable Polymer

State Key Laboratory of Lithospheric Evolution, Institute Of Geology and Geophysics, Chinese Academy of Science, Beijing, CHINA **2004-2007**

Research Assistant/Master Student

- Investigate the methane hydrate nucleation and growth behavior and provide insight for the application for Natural gas hydrate. -- Sponsored by China's NSF Fundings [Grant # 40672034]

JOURNAL PUBLICATIONS

- "Interaction of Substituted Poly(phenyleneethynylene)s with Ligand-Stabilized CdS Nanoparticles", Hua Liu, Matthew Espe and Hendrik Heinz, ***Journal of Materials Chemistry A***, 2014, (2), 8705-8711
- "Facet Recognition and Molecular Ordering of Ionic Liquids on Metal Surfaces", Kshitij C. Jha, Hua Liu and Hendrik Heinz, ***Journal of Physical Chemistry C***, 2013, (117), 25969-25981
- "Nanoscale Tensile, Shear, and Failure Properties of Layered Silicates as a Function of Cation Density and Stress", Gregory D. Zartman, Hua Liu and Hendrik Heinz, ***Journal of Physical Chemistry C***, 2010, (114), 1763-1772
- "Effect of Methane Adsorption on the Lifetime of a Dodecahedral Water Cluster Immersed in Liquid Water: A Molecular Dynamics Study on the Hydrate Nucleation Mechanisms" , Guang-Jun Guo, Yi-Gang Zhang, and Hua Liu, ***Journal of Physical Chemistry C***, 2007, (111), 2595–2606

PATENTS

(1) Multi-Layer Gas Barrier Materials for Vacuum Insulated Structures (Patent # WO/2017/116574)

(2) Multilayer Barrier Materials with PVD or Plasma Coating for Vacuum Insulated Structure (Patent # WO/2017/116578, US20170182607)

(3) Multi-Layer Encapsulation System for Joint Sealing of Vacuum Insulated Cabinets (Patent # US/2019/0170174, WO/2018/151705)

(4) Encapsulation System for a Thermal Bridge Breaker-to-Metal Liner/Wrapper Attachment for Creating a Structural Cabinet for an Appliance (Patent # WO/2018/067108)

(5) Injection molded gas barrier parts for vacuum insulated structure (Patent # WO/2017/116564, US20170184340)

(6) Encapsulation System for a Vacuum Insulated Structure Using an Elastic Adhesive and Barrier Coating (Patent #WO/2018/151704)

(7) Method for Rapid Encapsulation of a Corner Gap Defined Within a Corner of a Door Panel for an Appliance (Patent # WO/2018/160167)

(8) Molded gas barrier parts for vacuum insulated structure (Patent # US/2018/0311884A1)