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| Curriculum Vitae - Xuezhu Xu | School email: xuezhu.xu@ndsu.edu  Contact information  Private email: josetsushu@hotmail.co.jp  Office phone at U.S.A.: [701.231.8844]  Website: [Research gate: Xuezhu Xu]  Current position  Xuezhu Xu, Ph.D.  NORTH DAKOTA STATE UNIVERSITY  Program of Materials and Nanotechnology  Dept of Mechanical Engineering, PO Box 6050  Fargo ND 5810-6050 |

Xuezhu Xu, Ph.D.

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| Research interests  **Major Expertise: Composites, advanced characterization and modeling of biological, multifunctional, as well as smart materials, bio-inspired materials with enhanced mechanical competence;**  **Current Interests: Electronic Devices (Supercapacitor batteries, inorganic/organic LED displays), lightweight architectured materials and nanocomposites, as well as novel intelligent material systems with sensing capabilities.**   * Direct Solution Casting Films of Polymer Composite Films * Conductive Thin Layer Deposition on Substrates For Device Applications * Wet-spinning, electrospinning * Synthesis of Carbon Nanofibers/Nanotubes by Using Fe, Pd As Catalysts Using Chemical Vapor Deposition * Pyrolysis of Biological Materials: Lignin, Cellulose Nanofibers into Carbon Materials * Synthesis of Carbon Nanotubes, Silver Nanowires * Dispersion of CNTs and Graphene * Exfoliation of Cellulose Bundles into Cellulose Nanofibers such as Cellulose Nanofibrils and Cellulose Nanocrystals * Chemical Functionalization of Nanoparticles * Synthesis of Carbon Electrodes for Electronic Devices * Synthesis of 3D carbon Hybrids and their Application for Supercapacitor and Batteries * Synthesis of Transparent Cellulose Nanopaper and its Applications for LED Displays   Educational background-Since 2004   |  |  | | --- | --- | | 1. | **PH.D. DEGREE, 2011-2015** | |  | Materials and Nanotechnology, North Dakota State University, Fargo, ND 58102, the United States, 08/2011- 08/2015; | |  | Thesis: Synthesis of Cellulose Nanofiber Composites for Nanoreinforcement and other Advanced Applications. Research Advisor: Prof. Dr. Long Jiang; | | 2. | **VISITING STUDENT** | |  | Composite and Heterogeneous Material Analysis and Simulation Lab (COHMAS), King Abdullah University of Science and Technology (KAUST), Thuwal 23955-6900, Kingdom of Saudi Arabia, 02-04 /2013; 05-06 /2014;12/2014-02/2015; Host: Prof. Dr. Gilles Lubineau; | | 3. | **MASTER’S DEGREE, 2008-2010** | |  | Textile System Engineering, Shinshu University, Ueda, Nagano 3860012, Japan 10/2008 – 10/2010; | |  | Thesis: Enhanced Mechanical Properties of Polyvinyl Alcohol Fibers by Incorporating Nanofillers. Research Advisor: Prof. Dr. Yasuo Gotoh; | | 4. | **BACHELOR’S DEGREE, 2004-2008** | |  | Textile Engineering, Zhejiang Sci-Tech University, Zhejiang Province 310018, China 09/2004 – 06/2008. |   Awards & grants-Since 2008   1. **Co-applying for a research funding** with North Dakota State University & King Abdullah University of Science and Technology (KAUST). 2. **Nominated by department dean Prof. Alan Kallmeyer** in Mechanical Engineering to be awarded as the recipient of the Graduate Research Assistant of the Year Award (2015). 3. **Honoriums in Year 2013, 2014, 2015** offered by Prof. Gilles Lubineau, COHMAS Lab, KAUST. 4. **Honors Scholarship** for International Students 2008-2010 by Japan Student Services Organization.   Skills & activities   |  |  |  | | --- | --- | --- | | *Skills* | | Good at nanocomposite preparation including film casting, electrospinning, surface functionalization to nanofibers and etc; Experienced of synthesizing various fibers including cellulose nanofibers, carbon fibers and carbon nanotubes; Able to do polymerization; Expertise at TGA, DSC, SEM, TEM, XRD, and other material characterization techniques; | | *Scientific Memberships* | **Reviewer for Bioresources;**  **Assistive reviewers for Advanced Functional Materials, ACS Applied Materials and Interfaces, Carbon, Carbohydrate Polymers, Materials Letters and etc.** | | |   Journal article publications (11)-Since 2010   1. *Review: Synthesis of Cellulose Nanofiber Composites for Mechanical Reinforcement and other Advanced Functional Applications.*   Xuezhu Xu, Long Jiang**.**  **In revision, 2015.**   1. *Transparent, flexible electrodes based on hybrid cellulose nanofibers and their application in Light Emitting Diode Devices.*   Xuezhu Xu, Jian Zhou, Long Jiang, Gilles Lubineau, Tienkhee Ng, Boon S. Ooi, Hsien-Yu Liao, Chao Shen, Long Chen.  **At final stage of preparation, 2015.**   1. *Flexible, Highly Graphitized Carbon Aerogels Based on Bacterial Cellulose/Lignin: Catalyst-Free Synthesis and its Application in Energy Storage Devices*. Xuezhu Xu, Jian Zhou, D. H. Nagaraju, Long Jiang, Val R. Marinov, Gilles Lubineau, Husam N. Alshareef, Myungkeun Oh.   **Advanced Functional Materials 04/2015; 25(21): 3193-3202.**     1. *Semi-metallic, Strong and Stretchable Wet-spun Conjugated Polymer Microfibers*. Jian Zhou, Er Qiang Li, Ruipeng Li, Xuezhu Xu, Isaac Aguilar Ventura, Ali Moussawi, Dalaver H. Anjum, Mohamed Nejib Hedhili, Detlef-M. Smilgies, Gilles Lubineau, Sigurdur T. Thoroddsen.   **Journal of Materials Chemistry C 01/2015; 3: 2528-2538.**   1. *Temperature-dependent microstructure of PEDOT/PSS films: insights from morphological, mechanical and electrical analyses*. Jian Zhou, Dalaver H. Anjum, Long Chen, Xuezhu Xu, Isaac Aguilar Ventura, Long Jiang, Gilles Lubineau.   **Journal of Materials Chemistry C 08/2014; 2: 9903-9910.**   1. *Comparison between Cellulose Nanocrystal and Cellulose Nanofibril Reinforced Poly(ethylene oxide) Nanofibers and Their Novel Shish-Kebab-Like Crystalline Structures*. Xuezhu Xu, Haoran Wang, Long Jiang, Xinnan Wang, Scott A. Payne, J. Y. Zhu, Ruipeng Li.   **Macromolecules 05/2014; 47:3409-3416*.***   1. *Lignin-based Carbon Fibers: Carbon Nanotube Decoration and Superior Thermal Stability* Xuezhu Xu, Jian Zhou, Long Jiang, Gilles Lubineau, Scott A Payne, David Gutschmidt.   **Carbon 08/2014; 80:91-102.**   1. *Cellulose Nanocrystals vs. Cellulose Nanofibrils: A Comparative Study on Their Microstructures and Effects as Polymer Reinforcing Agents*.   Xuezhu Xu, Fei Liu, Long Jiang, Junyong Zhu, Darrin Haagenson, Dennis P. Wiesenborn.  **ACS Applied Materials & Interfaces 03/2013; 5(8): 2999-3009.**   1. *Porous Core-Shell Carbon Fibers Derived from Lignin and Cellulose Nanofibrils*. Xuezhu Xu, Jian Zhou, Long Jiang, Gilles Lubineau, Ye Chen, Xiang-Fa Wu, Robert Piere.   **Materials Letters 07/2013; 109: 175-178.**   1. *Preparation and Properties of Electrospun Soy Protein Isolate/Polyethylene Oxide Nanofiber Membranes*. Xuezhu Xu, Long Jiang, Zhengping Zhou, Xiangfa Wu, Yechun Wang.   **ACS Applied Materials & Interfaces 07/2012; 4(8): 4331-4337.**   1. *Fabrication of High Strength PVA/SWCNT Composite Fibers by Gel Spinning*   Xuezhu Xu, Ahmed Jalal Uddin, Kenta Aoki, Yasuo Gotoh, Takeshi Saito, Motoo Yumura.  **Carbon 06/2010; 48 (7): 1977-1984.**  Other related publications (15)  Book chapters (1)   1. Long Jiang, Xuezhu Xu: ***Chapter: Crystallization Behavior of Cellulose Nanofibril and Cellulose Nanocrystal Based Nanocomposites*. Handbook of Cellulose Nanocomposites**. Editors: K Hanieh, D Alain, T Sabu, A Ishak, et al. Wiley-VCH. Submitted, 2015.   Conference posters/proceedings (10)   1. *Plastic-like Transparent and Robust Nanopaper*. Xuezhu Xu, Jian Zhou, Long Jiang, Gilles Lubineau: Invited Speaker at KAUST Research Conference: Recent Trends in Predicting and Monitoring the Integrity of Composites (COMINT), 06/01 – 06/02/2015. Jeddah, the Kingdom of Saudi Arabia. 2. *Flexible, Highly Graphitized Carbon Aerogel and Its Application in Energy Storage Devices*. Xuezhu Xu, Long Jiang: ND EPSCoR 2015 State Conference, 04/22/2015. Fargo, U.S. 3. *Cellulose Nanocrystals and Cellulose Nanofibrils: Use in Composites and other Applications.* Long Jiang, JY Zhu, Xuezhu Xu: 2014 TAPPI International Conference on Nanotechnology, 06/23 - 26/2014. Vancouver, Canada. 4. *Biobased Nano-structured Carbon Materials. 13th International symposium on Bioplastics,*  Long Jiang, Xuezhu Xu, Gilles Lubineau, Jian Zhou: *Biocomposites & Biorefining*. 05/19 - 24/2014. Guelph, Ontario, Canada. 5. *Porous Core-Shell Carbon Fibers Derived from Lignin and Cellulose Nanofibrils.* Xuezhu Xu, Long Jiang, Gilles Lubineau: *ND EPSCoR-IDeA State Conference*, 04/29/2014.Grand Forks, ND, U.S. 6. *Biomass Based Cellulose Nanofibers for Advanced Applications*. Long Jiang, Xuezhu Xu, Gilles Lubineau, J Zhu: 2013 AIChE Annual Meeting, 11/03-08/2013. San Francisco, CA. 7. *Polymer Nanocomposites Comprising Cellulose Nanowhiskers (CNW) and Cellulose Nanofibrils (CNF) as Reinforcing Agents*. Long Jiang, Xuezhu Xu, Ellen Ten, MP Wolcott, JY Zhu: 20th Anniversary of the Bio-Environmental Polymer Society Annual Meeting, 09/18 - 21/2012. Denton, TX, U.S. 8. Preparation and Properties of Electrospun Soy Protein Isolate/Polyethylene Oxide Nanofiber Membranes. Xuezhu Xu, Long Jiang, Zhengping Zhou, Xiang-fa Wu, Yechun Wang. 2nd Annual Engineering Research Summit, A Conference for Engineering Faculty from NDSU, SDSU and UND, 05/23, 2012.Grand Forks, ND, U.S. 9. Use of Cellulose Nanowhiskers as an Effective Reinforcement in Composites. Long Jiang, M Wolcott, Ellen Ten, Xuezhu Xu. 244th ACS National Meeting, 08/19 - 23/2012. Philadelphia, PA, U.S. 10. *Cellulose Nanocrystals and Celllulose Nanofibrils: A Comparison Study on Their Effects in Composite Rheology and Reinforcement.* Xuezhu Xu, Long Jiang: 2012 Renewable Materials Summit: Markets for Building the Biorefinery, Hosted by LifeScience Alley & The BioBusiness Alliane of Minnesota, 05/15, 2012. Fargo, ND, U.S.   Contact information of referee  *Prof. Long Jiang*  *Assistant Professor*  *Department of Mechanical Engineering,*  *Program of Materials and Nanotechnology,*  *North Dakota State University,*  *Fargo, North Dakota 58102, United States*  [*long.jiang@ndsu.edu*](mailto:long.jiang@ndsu.edu)  *Prof. Xiang-fa Wu*  *Associate Professor*  *Department of Mechanical Engineering,*  *Program of Materials and Nanotechnology,*  *North Dakota State University,*  *Fargo, North Dakota 58102, United States*  [*xiangfa.wu@ndsu.edu*](mailto:xiangfa.wu@ndsu.edu)  *Prof. Dilpreet Bajwa*  *Associate Professor*  *Department of Mechanical Engineering,*  *Program of Materials and Nanotechnology,*  *North Dakota State University,*  *Fargo, North Dakota 58102, United States*  [*dilpreet.bajwa@ndsu.edu*](mailto:dilpreet.bajwa@ndsu.edu) |