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| Curriculum Vitae - Xuezhu Xu | School email: xuezhu.xu@ndsu.eduContact informationPrivate email: josetsushu@hotmail.co.jpOffice phone at U.S.A.: [701.231.8844]Website: [Research gate: Xuezhu Xu]Current positionXuezhu Xu, Ph.D.NORTH DAKOTA STATE UNIVERSITYProgram of Materials and NanotechnologyDept of Mechanical Engineering, PO Box 6050Fargo 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

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| 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 20081. **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

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| *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 20101. *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**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**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* |