Xiaomin Lu

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Research Interests

Highly skilled with rich experience in statistics, biomaterials and chemical engineering

Education

PhD, Statistics
Univerisity of Connecticut, Storrs, CT, USA *08/2021–present*

Master, Statistics
North Carolina State University, Raleigh, NC, USA *08/2019–05/2021*

PhD, Forest Biomaterials
North Carolina State University, Raleigh, NC, USA *01/2013–12/2016*

Master, Chemical Engineering
Åbo Akademi University, Turku, Finland *08/2009–07/2011*

Bachelor, Light Chemical Engineering
Qilu University,of Technology, Shandong, China *09/2005–07/2009*

Positions

Research Assistant
UConn Health, Farmington, CT, USA *09/2023–present*

Teaching Assistant
Department of Statistics, University of Connecticut, Storrs, CT, USA *08/2023–present*

Research Assistant
Department of Economics, University of Connecticut, Storrs, CT, USA *08/2022–08/2023*

Research Assistant
Budget, Planning and Institutional Research, University of Connecticut, Storrs, CT, USA *08/2021–05/2022*

Research assistant
Department of Forest Biomaterials, North Carolina State University, Raleigh, NC, USA *06/2017–05/2021*

Chemist intern
Schaeffler, Wooster, OH, USA *09/2016–05/2017*

Research Assistant
Department of Forest Biomaterials, North Carolina State University, Raleigh, NC, USA *01/2013–07/2016*

Researcher
Department of Bioproducts and Biosystems, Aalto University, Espoo, Finland *01/2012–12/2012*

Research Assistant
Department of Science and Engineering, Åbo Akademi University, Turku, Finland *10/2010–11/2011*

Certificate

Base Programming Using SAS 9.4

Skills

Computational Skills

Data processing tool: R, SAS, Python, Julia, JMP, SQL

Editorial tool : LaTex, Markdown, VS Code, Quarto, Emacs

Microsoft office : Power BI, Word, Excel, PowerPoint, Outlook

Image tool : Photoshop, ChemDraw, Origin

Analytical techniques

Spectroscopy: UV-Vis, FT-IR

Chromatography: GPC, HPLC, GC-MS, IC

Thermal analysis: TGA, DSC, DMA

Microscopy: SEM, AFM, TEM, Optical Microscopy

Honors & Awards

Mu Sigma Rho	*2021-present*
Second-class Study Scholarship	*2013-2016*
Second-class Study Scholarship and Diathesis Developing Scholarship	*2006-2007*
Third-class Study Scholarship and Diathesis Developing Scholarship	*2005-2006*

Teaching

STAT 1100Q-021D : Elementary Concepts of Statistics	*2023*
STAT 3375Q-004D: Introduction to Mathematical Statistics	*2023*

Publications

[1] Jingdong Feng, Xinyi Wang, Zihao Lv, Jiangang Qu, Xiaomin Lu, Qufu Wei, and Qingqing Wang. Multifunctional wearable strain sensor made with an elastic interwoven fabric for patients with motor dysfunction. *Advanced Materials Technologies*, 5(11):2000560, 2020.

[2] Ana Ferrer, Ingrid C Hoeger, Xiaomin Lu, and Orlando J Rojas. Reinforcement of polypropylene with lignocellulose nanofibrils and compatibilization with biobased polymers. *Journal of Applied Polymer Science*, 133(34), 2016.

[3] Martin A Hubbe, Douglas S McLean, Karen R Stack, Xiaomin Lu, Anders Strand, and Anna Sundberg. Self-assembly of alkyl chains of fatty acids in papermaking systems: a review of related pitch issues, hydrophobic sizing, and ph effects. *BioResources*, 15(2):4591–4635, 2020.

[4] Wenqian Lin, Sheng Xing, Yongcan Jin, Xiaomin Lu, Caoxing Huang, and Qiang Yong. Insight into understanding the performance of deep eutectic solvent pretreatment on improving enzymatic digestibility of bamboo residues. *Bioresource Technology*, 306:123163, 2020.

[5] Tian Liu, Yu Zhang, Xiaomin Lu, Peipei Wang, Xinyu Zhang, Jing Tian, Qingcheng Wang, Junlong Song, Yongcan Jin, and Huining Xiao. Binding affinity of family 4 carbohydrate binding module on cellulose films of nanocrystals and nanofibrils. *Carbohydrate polymers*, 251:116725, 2021.

[6] Xiaomin Lu. Cellulose nanocrystals for wrinkled fabric. *BioResources*, 14(4):7632–7635, 2019.

[7] Xiaomin Lu, Anna Sundberg, Anders Strand, and Martin A Hubbe. Effects of metal ions and wood pitch on retention and physical properties of tmp. *Nordic Pulp & Paper Research Journal*, 35(4):649–659, 2020.

[8] Pengfei Lv, Xiaomin Lu, Ling Wang, and Wei Feng. Nanocellulose-based functional materials: from chiral photonics to soft actuator and energy storage. *Advanced Functional Materials*, 31(45):2104991, 2021.

[9] Pengfei Lv, Xiaomin Lu, Huimin Zhou, and Xiaohang Sun. Biosynthesis of bacterial cellulose for in-situ assembly of intelligent packaging with natural dyes. *BioResources*, 15(2):2111–2113, 2020.

[10] Xiaorui Lv, Liling Li, Xiaomin Lu, Wenxiu Wang, Jianfeng Sun, Yaqiong Liu, Jianlou Mu, Qianyun Ma, and Jie Wang. Effects of organic acids on color intensification, thermodynamics, and copigmentation interactions with anthocyanins. *Food Chemistry*, 396:133691, 2022.

[11] Xiaorui Lv, Jianlou Mu, Wenxiu Wang, Yaqiong Liu, Xiaomin Lu, Jianfeng Sun, Jie Wang, and Qianyun Ma. Effects and mechanism of natural phenolic acids/fatty acids on copigmentation of purple sweet potato anthocyanins. *Current Research in Food Science*, 5:1243–1250, 2022.

[12] Qianyun Ma, Xiaomin Lu, and Zhizhou Chen. Could aerogels from lignin-containing forest materials be used for cushioning in packaging systems? *BioResources*, 15(1):3–5, 2020.

[13] Qianyun Ma, Xiaomin Lu, Wenxiu Wang, Martin A Hubbe, Yaqiong Liu, Jianlou Mu, Jie Wang, Jianfeng Sun, and Orlando J Rojas. Recent developments in colorimetric and optical indicators stimulated by volatile base nitrogen to monitor seafood freshness. *Food Packaging and Shelf Life*, 28:100634, 2021.

[14] Zhengdong Shen, Haiying Wang, Qian Yu, Qiang Li, Xiaomin Lu, and Xianming Kong. On-site separation and identification of polycyclic aromatic hydrocarbons from edible oil by tlc-sers on diatomite photonic biosilica plate. *Microchemical Journal*, 160:105672, 2021.

[15] Xiaohang Sun, Zijun Sun, Yanbin Xin, Bing Sun, and Xiaomin Lu. Plasma-catalyzed liquefaction of wood-based biomass. *BioResources*, 15(3):6095–6109, 2020.

[16] Xiaoyan Wang, Fanghui Hu, Xiaomin Lu, Qingcheng Wang, Xinyu Zhang, Jing Tian, Jiaqi Guo, Junlong Song, Yongcan Jin, and Huining Xiao. Impact of degree of substitution of cationic xylan on strength of cellulose fiber networks along with medium conductivity. *Industrial Crops and Products*, 159:113058, 2021.

[17] Dezhan Ye, Shuai Li, Xiaomin Lu, Xi Zhang, and Orlando J Rojas. Antioxidant and thermal stabilization of polypropylene by addition of butylated lignin at low loadings. *ACS Sustainable Chemistry & Engineering*, 4(10):5248–5257, 2016.

[18] Lihua Zang, Chengxuan Zhou, Liming Dong, Leilei Wang, Jiaming Mao, Xiaomin Lu, Rong Xue, and Yunqian Ma. One-pot synthesis of nano cuo-zno modified hydrochar derived from chitosan and starch for the h2s conversion. *Catalysts*, 11(7):767, 2021.

[19] Huimin Zhou, Pengfei Lv, Xiaomin Lu, Xuebin Hou, Min Zhao, Jieyu Huang, Xin Xia, and Qufu Wei. Fibrous network of c@ mos2 nanocapsule-decorated cotton linters interconnected by bacterial cellulose for lithium-and sodium-ion batteries. *ChemSusChem*, 12(23):5075–5080, 2019.

Presetations

(1) "Cellulose nanocrystals containing lignin as additive and reinforcing agent in melt-spinning of polypropylene" 251th American Chemical Society National Meeting. San Diego, CA. March, 2016 (oral).

(2) "Lignin contained nanocellulose as additive and reinforcing agent in melt-spinning of polyethylene and polypropylene" IAB Meeting. Raleigh, NC. November, 2015 (oral and poster).

(3) "Nanocellulose as additive and reinforcing agent in melt-spinning of polyethylene and polypropylene with pre-compounding" IAB Meeting. Raleigh, NC. May, 2015 (oral and poster).

(4) "Cellulose nanocrystals as additive and reinforcing agent in melt-spinning of polypropylene" 249th American Chemical Society National Meeting. Denver, CO. March, 2015 (oral).

(5) "Nanocellulose as additive and reinforcing agent in melt-spinning of polyethylene and polypropylene without pre-compounding" IAB Meeting. Raleigh, NC. November, 2014 (oral and poster).

(6) “Cellulose nanocrystals as additive and reinforcing agent in melt-spinning of polypropylene” Textile North America. Atlanta, GA. May, 2014 (poster).

(7) “Cellulose nanocrystals as additive and reinforcing agent in polyethylene and polypropylene films compatibility improvement” IAB Meeting. Raleigh, NC. May, 2014 (oral and poster)

(8) “Thermoplastic matrix reinforced with lignocellulose nanofibrils (LCNF): effect of lignin content”. 247th American Chemical Society National Meeting. Dallas, TX. April, 2014 (poster).

(9) “Cellulose nanocrystals as additive and reinforcing agent in polyethylene and polypropylene films” IAB Meeting. Raleigh, NC. November, 2013 (oral and poster)

(10) “Cellulose nanocrystals as additive and reinforcing agent in melt-spinning of polyethylene and polypropylene cellulose nanocrystals production and surface modification” IAB Meeting. Raleigh, NC. May, 2013 (oral and poster)

(11) “Effect of metal ions and wood pitch on paper properties”, 16th International Symposium on Wood, Fiber and Pulping Chemistry (ISWFPC), Tianjin, China, 2011 (poster)