

CHANGXUE XU

Assistant Professor, Department of Industrial, Manufacturing & Systems Engineering
Texas Tech University, Lubbock, TX 79409

Phone: 806-834-6014

E-mail: changxue.xu@ttu.edu

EDUCATION

Ph.D., Mechanical Engineering, Clemson University, SC *May, 2014*
M.S., Mechanical Engineering, Sichuan University, P.R. China *July, 2009*
B.S., Mechanical Engineering, Sichuan University, P.R. China *July, 2006*

PROFESSIONAL EXPERIENCE

Industrial, Manufacturing & Systems Engineering, Texas Tech University Lubbock, TX
Assistant Professor 09/2015 – Present
Mechanical and Aerospace Engineering, University of Florida Gainesville, FL
Postdoc 06/2014 – 05/2015
Mechanical Engineering, Clemson University Clemson, SC
Research assistant 08/2009 – 05/2014

AWARDS AND HONORS

Travel Award for Solid Freeform Fabrication (SFF) conference, Clemson University 2013
NSF CMMI student fellowship, NSF CMMI 2012 Conference 2012
Travel Award for 2010 ASME International Manufacturing Science and Engineering
Conference (MSEC), MSEC 2010 conference 2010
Outstanding Graduate, Sichuan University, China 2006/2009
National Scholarship, China 2005
First-class Scholarship for Undergraduate Students, Sichuan University, China 2003/2004

GRANTS

1. TTU Presidents' Collaborative Research Initiative 9/2017-9/2018 \$48,361
Title: Modeling the Human Blood-Brain Barrier Using Microfluidics and 3D Printing
Role: Co-Investigator

SYNERGISTIC ACTIVITIES

- NAMRI/SME Scientific Committee
- Editorial Board of *Biosensors and Bioelectronics Open Access* and *Ergonomics International Journal*

- Symposium Chair in ASME International Manufacturing Science and Engineering Conference
- Member of American Society of Mechanical Engineers

JOURNAL PAPERS

- Christensen, K., Zhang, Z., **Xu, C.**, and Huang, Y., 2017, “Deformation Compensation during Buoyance-Enabled Inkjet Printing of 3D Soft Tubular Structures,” *ASME Journal of Manufacturing Science and Engineering*, Accepted.
- Yan, P., Brown, E., Su, Q., Li, J., **Xu, C.**, Zhou, C., and Lin, D., 2017, “3D Printing Hierarchical Silver Nanowire Aerogel with Highly Compressive Resilience and Tensile Elongation through Tunable Poisson’s Ratio,” *Small*, pp. 1701756.
- Zhang, Z., **Xu, C.**, Xiong, R., Chrisey, D.B., and Huang, Y., 2017, “Effects of Living Cells on the Bioink printability during Laser printing,” *Biomicrofluidics*, Vol. 11, pp. 034120.
- **Xu, C.**, Zhang, Z., Fu, J., and Huang, Y., 2017, “Study of Pinch-off Locations during Drop-on-Demand Inkjet Printing of Viscoelastic Alginate Solutions,” *Langmuir*, Vol. 33, pp. 5037-5045.
- Zhang, M., Krishnamoorthy, S., Song, H., Zhang, Z., and **Xu, C.***, 2017, “Ligament Flow during Drop-on-Demand Inkjet Printing of Bioink Containing Living Cells,” *Journal of Applied Physics*, Vol. 121, pp. 124904.

Join Texas Tech University

- Christensen, K., **Xu, C.**, Chai, W., Zhang, Z., Fu, J., and Huang, Y., 2015, “Freeform Inkjet Printing of Cellular Structures with Bifurcations,” *Biotechnology and Bioengineering*, Vol. 112, pp. 1047-1055. **(Highlighted by the journal)**
- **Xu, C.**, Zhang, Z., Christensen, K., Huang, Y., Fu, J., and Markwald, R.R., 2014, “Freeform Vertical and Horizontal Fabrication of Alginate-Based Vascular-Like Tubular Constructs Using Inkjetting,” *ASME Journal of Manufacturing Science and Engineering*, Vol. 136, pp. 061020.
- **Xu, C.**, Huang, Y., Fu, J., and Markwald, R.R., 2014, “Electric Field-Assisted Droplet Formation Using Piezoactuation-Based Drop-on-Demand Inkjet Printing,” *Journal of Micromechanics and Microengineering*, Vol. 24, pp. 115011.
- **Xu, C.**, Zhang, M., Huang, Y., Ogale, A., Fu, J., and Markwald, R.R., 2014, “Study of Droplet Formation Process during Drop-on-Demand Inkjetting of Living Cell-Laden Bioink,” *Langmuir*, Vol. 30, pp. 9130-9138. **(Highlighted by American Chemical Society News Service Weekly PressPac and covered by R&D Magazine, ScienceDaily, MED Device Online, Inside 3DP, Transplant Families, etc.)**
- **Xu, C.**, Christensen, K., Zhang, Z., Huang, Y., Fu, J., and Markwald, R.R., 2013, “Predictive Compensation-Enabled Horizontal Inkjet Printing of Alginate Tubular Constructs,” *Manufacturing Letters*, Vol. 1, pp. 28-32. **(Invited)**
- **Xu, C.**, Chai, W., Huang, Y., and Markwald, R.R., 2012, “Scaffold-Free Inkjet Printing of Three-Dimensional Zigzag Cellular Tubes,” *Biotechnology and*

Bioengineering, Vol. 109, pp. 3125-3160.

- Yan, J., Huang, Y., **Xu, C.**, and Chrisey, D.B., 2012, “Effect of Fluid Properties and Laser Fluence on Jet Formation during Laser Direct Writing of Glycerol Solution,” *Journal of Applied Physics*, Vol. 112, pp. 083105.

CONFERENCE PUBLICATIONS

- Krishnamoorthy, S., Zhang, M., Song, H., and **Xu, C.***, 2017, “Bingham Fluid-Assisted Fabrication of 3D Vascular-Like Constructs of Interpenetrating Network Hydrogel,” 2017 ASME International Manufacturing Science and Engineering Conference, Los Angeles, CA.
- Zhang, M., Krishnamoorthy, S., Song, H., and **Xu, C.***, 2017, “Study of Living Cell Distribution during Inkjet Printing of Bioink,” 2017 ASME International Manufacturing Science and Engineering Conference, Los Angeles, CA.
- Zhang, M., and **Xu, C.***, 2016, “Ligament Flows of Exit-Pinching during Drop-on-Demand Inkjetting of Alginate Solution,” 2016 ASME International Manufacturing Science and Engineering Conference, Blacksburg, VA.
- Xiong, R., Christensen, K., **Xu, C.**, and Huang, Y., 2014, “Jet-Based 3D Printing of Biological Constructs,” Proceedings of 25th International Solid Freeform Fabrication Symposium, Austin, TX.
- **Xu, C.**, Zhang, Z., Fu, J., Huang, Y., and Markwald, R.R., 2013, “Time-Resolved Study of Droplet Formation Process during Inkjetting of Alginate Solution,” Proceedings of 24th International Solid Freeform Fabrication Symposium, Austin, TX.
- **Xu, C.**, Huang, Y., and Markwald, R.R., 2012, “Vertical and Horizontal Fabrication of Alginate-Based Vascular-Like Constructs Using Inkjetting,” Proceedings of 23rd International Solid Freeform Fabrication Symposium, Austin, TX.
- Yan, J., Gudapati, H., Huang, Y., and **Xu, C.**, 2012, “Effect of Sodium Alginate Concentration during Laser-Assisted Printing of Alginate Tubes,” Proceedings of the ASME 2012 International Symposium on Flexible Automation, St. Louis, MO.
- **Xu, C.**, Huang, Y., and Lin, Y., 2010, “Effects of Operating Conditions on Thin Film Deposition Performance in Air Atomizing Spray Pyrolysis,” 2010 ASME International Manufacturing Science and Engineering Conference, Erie, PA.

REVIEWER

ACS Applied Materials & Interfaces, ACS Langmuir, ACS Biomaterials Science & Engineering, Scientific Report, Materials Science & Engineering C, ASME Journal of Manufacturing Science and Engineering, ASME Journal of Nanotechnology in Engineering and Medicine, Journal of Manufacturing Processes, Journal of Zhejiang University, etc.