

CURRICULUM VITAE – JOHN (XIAO) ZHANG

Ph.D. student, Flexible Electronic and Additive Printing (FEAP) Laboratory, In-situ Characterization for Additive Printing (iCAP) Laboratory

Department of Industrial and Manufacturing Systems, Iowa State University

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RESEARCH INTERESTS & AREA OF EXPERTISE

- Electrohydrodynamic inkjet printing of micro/nano flexible electronics
- In-situ image processing and closed-loop control
- Laser diffraction technique; laser ablation technique
- Bio-printing and food printing
- CT scanning
- Concrete printing
- Machine learning & data optimization

EDUCATION

Ph.D. in Department of Industrial and Manufacturing Systems, Expected Graduation 2021
Iowa State University; Ames, Iowa

Ph.D. in Mechanical and Aerospace Engineering, 2016 – 2018
North Carolina State University; Raleigh, North Carolina

M.S. in Department of Material Science and Engineering, 2012–2015
Wuhan University of Technology; Wuhan, China

B.A. in Department of Material Science and Engineering, 2008–2012
Wuhan University of Technology; Wuhan, China

B.A. in Business Administration, 2009–2012
Wuhan University; Wuhan, China

RESEARCH EXPERIENCE

Graduate Research Assistant, December 2017 - present

- *Fabricate flexible electronics by electrohydrodynamic jet printing technique combined with laser ablation*
- *Print food for patients in hospital using 3D printer*
- *Concrete printing*
- *Conduct in-situ characterization for additive printing*
- *Machine vision and machine learning of the EHD-Jet printing of silver nanoink*
- *New ink material printing for EHD-Jet printing*
- *CT scanning of printed metal pattern*

Graduate Research Assistant, October 2016 – March 2017

Department of Biological and Agricultural Engineering; North Carolina State University

- *Processed data for air quality evaluation using excel*

Graduate Research Assistant, September 2013 – June 2015

Department of Material Science and Engineering; Wuhan University of Technology

- *Manufactured helical gear and optimize the mold with finite element simulation technique*
- *Participated in National Natural Science Foundation project (China) "Helical cylindrical gear precision forming mechanism and technology research" (project number: Project Number: 51375356).*

Department of Automotive Engineering; Wuhan University of Technology

- *Applied fine blanking technique for simulation, manufacturing, machine development and material testing*

TEACHING EXPERIENCE

Teaching Assistant, Spring Semester 2018: ENGR 160 Engineering Fundamentals & Problem Solving

WORK EXPERIENCE

Equipment Engineer, March 2013 – September 2013

Semiconductor Manufacturing Incorporation (SMIC); Shanghai

Packing and testing wafer, maintain PVD, CVD, photoresist coater/decoater machine, develop recipe

HONORS & AWARDS

- NSF Award Winner of the 47th North American Manufacturing Research Conference, 2019
- NSF Award Winner of the 29th Annual International Solid Freeform Fabrication Conference, 2018
- National Scholarship, Wuhan University of Technology, 2013–2014
- University Scholarship, Wuhan University of Technology, 2009–2011

PUBLICATIONS & PRESENTATIONS

- “Surface Roughness Measurement of Additive Manufactured Parts Using Focus Variation Microscopy And Structured Light System”, Iowa State Research Day 2019, Memorial Union, Ames, Iowa, March 2019
- “Machine vision assisted micro-filament detection for real-time monitoring of electrohydrodynamic inkjet printing”, accepted, Procedia Manufacturing at International Conference in Flexible Automation and Intelligent Manufacturing Conference 2018, Columbus OH.
- X. Zhang, H. Qin, “In-situ Quality Inspection for Micro/Nano Scale Additive Manufacturing System Based on Electrohydrodynamic Inkjet Printing Using Machine Vision”, *IISE Annual Conference & Expo 2018 (IISE 2018)*, Orlando, FL, May 18-21, 2018
- X. Zhang, H. Qin, “Effects of Geometric Variations on Mechanical Properties of Bio-scaffolds for Bone Regeneration”, *IISE Annual Conference & Expo 2018 (IISE 2018)*, Orlando, FL, May 18-21, 2018.
- “Application of 3D Printing to Food Preparation at Ames Hospitals”, Industrial and Manufacturing System Engineering Department, Research Symposium, Iowa State University, April 2018
- “Micro-Filament Detection of Electrohydrodynamic Jet Printing”, Industry/University Research Center Semi-Annual Review. Ames, Iowa; April 2018.
- “Application of 3D Printing to Food Preparation at Ames Hospitals”, poster competition, Center for Crops Utilization Research BioCentury Research Farm. Ames, Iowa; April 2018.
- “Model Reconstruction in Additive Printing: A New Approach for in-situ Monitoring and Nondestructive Evaluation of Printed Constructs”, Industry/University Research Center Semi-Annual Review. Ames, Iowa; April 2018.
- “Machine Vision Assisted Micro-Filament Detection for Real-Time Monitoring of Electrohydrodynamic Inkjet printing”, International Conference in Flexible Automation and Intelligent Manufacturing 2018 conference. Columbus, Ohio; June 2018.
- IISE 2018/IISE Annual Conference and Expo. Loews royal resort, Orlando, Florida; May 2018.
- ASME 2018/MSEC Manufacturing Science and Engineering Conference. Texas A&M University, TX; June 2018
- The 15th Shanghai International Automobile Industry Exhibition. Wuhan, China; April 2013
- Munich Shanghai Electronic Components Expo. Shanghai, China; March 2013
- Advanced Engineering Symposium. Wuhan, China; December 2011

SERVICE

Reviewed articles for:

The American Society of Mechanical Engineers

MEMBERSHIP

IEEE Member; March 2018 - present
ASME Member, March 2018 – present
IISE Member, January 2019 -present
SME Member, March 2018- present