XINYU LIU

Professor, Depart. of Industrial Engineering, Lamar University, Beaumont, TX 77710
Ph: 409-880-8807(O); Fax: 409-880-8121; Email: xinyu.liu@lamar.edu

▪ EDUCATION

Ph.D., Mechanical Engineering	University of Illinois at Urbana-Champaign	2006
M.S., Mechanical Engineering	Tsinghua University, P. R. China	1999
B.S., Mechanical Engineering	Tsinghua University, P. R. China	1997

▪ PROFESIONAL EXPERIENCE

Professor	Dept. of Industrial & System Eng., Lamar Univ.	08/2020 -
Associate Professor	Dept. of Industrial Engineering, Lamar Univ.	08/2013 - 08/2020
Assistant Professor	Dept. of Industrial Engineering, Lamar Univ.	08/2007 – 08/2013
Postdoctorate Fellow	University of Illinois at Urbana-Champaign	01/2007 – 08/2007
Research Engineer	Microlution Inc.	06/2006 – 01/2007
Research Assistant	University of Illinois at Urbana-Champaign	08/1999 – 05/2006
Research Assistant	Tsinghua University	09/1997 – 07/1999

▪ TEACHING EXPERIENCE

Associate Professor, Dept. of Industrial Engineering, Lamar University	08/2013 – Present
Assistant Professor, Dept. of Industrial Engineering, Lamar University	08/2007 – 08/2013

Teaching Proficiency Summary

- Maintained high student course evaluations in both online and face to face courses. Taught courses at the graduate and undergraduate engineering levels.

Courses Taught

Undergraduate Courses:
- Machine Design I
- Machine Design II
- Introduction to Probability and Statistics
- Statistical Quality Design and Control
- Computer Integrated Manufacturing Systems
- Automated Engineering Systems
- Engineering Materials and Manufacturing Processes
- Engineering Materials and Manufacturing Processes Laboratory
- Senior Capstone Design

Graduate Courses:
- Automated Engineering Systems
- Statistical Principles in Engineering (Engineering Core Course, Offered to the Entire College)

Design of Experiments
Advanced Manufacturing Process Analysis
Statistical Decision Making
Statistical Quality Design and Control
Lean Six Sigma
Lean Manufacturing

▪ RESEARCH FUNDING

1. RET Site: Incorporating Engineering Design and Manufacturing into High School Curriculum, Co-Investigator, PI: Zhu, Weihang, Co-PI: Fan, Xuejun. NSF, $555,380, 2016-2019. After Dr. Zhu left the university in Fall 2018, I assumed the PI role on the grant.
2. Development of a Non-Contact Metrology System for Dimension Measurement and Surface Characterization of Deep-Holes, Schlumberger Research Center, Phase I, $134,661, 2008-2012.
3. Development of a Non-Contact Metrology System for Dimension Measurement and Surface Characterization of Deep-Holes, Schlumberger Research Center, Phase II, $60,000, 2012-2014.
4. Hydraulic performance of Rectangular Deck Drains, PI, Dr. Qin Qian, Co-PIs, Dr. Mark Bourland; Dr. Xinyu Liu; Dr. Randall Charbeneau, Dr. Michael Barrett, Texas Department of Transportation, $300,000, 09/2010~ 08/2012.
5. Development of Scanhead based Pico-second Laser Micro-machine Tool System, PI, Lamar University HEAF Funds, ~$80,000, 2014~2017.
6. Facilitating Active Learning with Inverted Classroom, PI Zhou, J., Co-PIs: Aung, K., Zhu, W., & Liu, X., Lamar University, $15,000, 2016.
7. Research and proposal preparation for advanced manufacturing, PI, Lamar University, $8,000, 2016.
8. Nanolubricant based Minimum Quantity Lubrication Machining for Sustainable Manufacturing", PI, Lamar Research Enhancement Grant, $5,000, 2010~2011
9. Exploratory Study of Cost-Effective Hybrid Micromanufacturing Processes for Bipolar Plates of Miniature Fuel Cell, PI, Lamar Research Enhancement Grant, $5,000, 2008-2009.

▪ HONORS AND AWARDS

- University Merit Award, Lamar University, 2011 (one of the three awardees campus wide)
- Several Journal articles were ranked as top 10 most downloaded articles in the ASME Journal of Manufacturing Science and Engineering; one of them ranked 1st for three consecutive months.

▪ PUBLICATIONS

Book Chapter

[1] Mason, D. R., Abernathy, L. K., Abshire, S. R., Cummings, C. D., Liu, X., (2012). "Evaluation of an Online Technology Leadership Master's Program", In J. Tareilo and B. Bizzell (Eds.), Handbook of online instruction and programs in educational leadership (pp. 183-207). Ypsilanti, MI: NCPEA Press.

Peer Reviewed Journal Papers

[2] Weihang Zhu, Xuejun Fan, Nicholas Brake, **Xinyu Liu**, Xianchang Li, Jiang Zhou, Dorothy Sisk and Julia Yoo (2018) "Engineering Design and Manufacturing Education through Research Experience for High School Teachers", Procedia Manufacturing, Vol 26, pp 1340-1348.

[3] **Xinyu Liu** and Weihang Zhu (2017), "Development of a Fiber Optical Occlusion Based Non-Contact Automatic Tool Setter for a Micro-Milling Machine", Robotics and Computer Integrated Manufacturing, 43, 12-17, doi:http://dx.doi.org/10.1016/j.rcim.2016.04.002.

[4] Jiang Guo, Haixiang Song, Hu Liu, **Xinyu Liu**, Chunjia Luo, Xin Zhang, Jie Kong, Zhanhu Guo, Yanrong Ren, Tao Ding, Mojammel Khan, D. P. Young, "Polypyrrole-interface-functionalized nano-magnetite epoxy nanocomposites as electromagnetic wave absorber with enhanced flame retardancy", Journal of Materials Chemistry C, 5(22), 2017.

[5] Qin Qian, **Xinyu Liu**, Michale E. Barrett and Randall J Charbeneau (2016), "Physical Modeling on Hydraulic Performance of Rectangular Bridge Deck Drains", Water, 8(2), 67; doi:10.3390/w8020067.

[6] **Xinyu Liu** and Shreyas Shashidhara (2016) "Experimental Investigation of the Tool Wear in Micro-milling of Stainless Steel 316", International Journal of Mechatronics and Manufacturing Systems, 9(2), doi: 10.1504/IJMMS.2016.076170

[7] He, Qiangliang; Yuan, Ting-Ting; Zhang, Xi; Yan, Xingru; Guo, Jiang; Ding, Daowei; Khan Mojammel; Young, David, Khasanov, Airat; Luo, Zhiping; Liu Jiurong; Shen, Tom; **Liu, Xinyu**; Wei, Suying; and Guo, Zhanhu (2014) "Electromagnetic Field Absorbing Polypropylene nanocomposites with Tuned Permittivity and Permeability by Nano-iron and Carbon Nanotubes", Journal of Physical Chemistry, Part C. 118 (42), pp24784-24796.

[8] He, Qingliang; Yuan, Tingting; Zhang, Xi; Liu, Jingjing; Sun, Luyi; **Liu, Xinyu**; Wei, Suying; Guo, Zhanhu (2014) "Heavy Duty Piezoresistivity Induced Stain Sensing Natural Rubber/Carbon Black Composites Reinforced with Different Carbon Nanofillers", Materials Research Express, 1(3), 035029

[9] **Liu, X.**, (2012) "In-situ Metrology System for Micro-Milling Machine," Journal of Manufacturing Systems, Vol.31, No.1, pp. 15–21.

[10] Abernathy, L. K., Mason, D. Cummings, C., Stephens, L., Abshire, S. and **Liu, X**., (2012). "Building leadership capacity: The use of electronic portfolios and web 2.0 tools", National Social Science Technology Journal.

[11] Özel, T., and **Liu, X.**, (2009), "Investigations on Mechanics Based Process Planning of Micro-End Milling in Machining Mold Cavities", Materials and Manufacturing Processes, Vol. 24, No. 12, pp1274-1281.

[12] **Liu, X.**, and Jun, M., (2008) "Effects of Process Parameters on Surface Location Errors in Micro-endmilling," Transactions of the North American Manufacturing Research Institution of SME (NAMRI), v36, pp277-284.

[13] **Liu, X.**, DeVor, R. E., and Kapoor, S. G., (2007) "A model-based analysis of the surface roughness in micro-endmilling, Part I: model development," *J. of Manuf. Sci. and Eng.*, v129, pp 453-460.

[14] **Liu, X.**, DeVor, R. E., and Kapoor, S. G., (2007) "A model-based analysis of the surface roughness in micro-endmilling, Part II: experimental investigation," *J. of Manuf. Sci. and Eng.*, v129, pp 461-469.

[15] **Liu, X.**, DeVor, R. E., and Kapoor, S. G., (2006) "An analytical model for the prediction of minimum chip thickness in micro-machining," *J. of Manuf. Sci. and Eng.*, v128, pp 474-481.

[16] Jun, M., **Liu, X.**, DeVor, R. E., and Kapoor, S. G., (2006) "Investigation of the dynamics of micro-endmilling, Part 1: model development," *J. of Manuf. Sci. and Eng.*, v128, pp 893-900.
[17] **Liu, X.**, DeVor, R. E., Kapoor, S. G. and Ehmann, K. F., (2004) "The mechanics of machining at the micro-scale: assessment of the current state of the science," *J. of Manuf. Sci. and Eng.*, v126, pp. 666-678.
[18] Vogler, M. P., **Liu, X.**, Kapoor, S. G., and DeVor, R. E. (2002) "Development of meso-scale machine tool (mMT) systems," *Transactions of the North American Manufacturing Research Institution of SME (NAMRI)*, v30, pp. 653-661.
[19] Reddy, R. G., Ozdoganlar, O.B., Kapoor, S. G., DeVor, R.E., and **Liu, X.**, (2002) "A stability solution for the axial contour-turning process", *J. of Manuf. Sci. and Eng.*, v124, pp. 581-587.
[20] **Liu, X.**, and Jing, T., (2000) "Study on a CAD/CAE system for foundry under concurrent engineering environment", *Special Casting & Nonferrous Alloys*, No.3. pp. 35-38. (in Chinese).
[21] **Liu, X.**, Liu, X. and Jing, T., (1999) "Three dimensional computer-aided design for foundry technology", *Die and Mould Technology*, Vol. 17, No. 6, pp. 16-21. (in Chinese).

Papers Presented in Conferences

[22] **Xinyu Liu**, Xuejun Fan, Nicholas Brake, Xiangchang Li, Jiang Zhou, Julia Yoo, Dorothy Sisk, Nicholas Brake, "Application of 3D CAD and 3D printing to RET program to Enrich Engineering Design Education", ASEE Annual Conference and Expo. Montreal, Quebec, Canada, June 21-24, 2020. (Virtual Conference Due to Covid 19 Pandemic).
[23] Weihang Zhu, **Xinyu Liu**, Xuejun Fan, Nicholas Brake, Xianchang Li, Jiang Zhou, Julia Yoo, Dorothy Sisk, Assisting High School Design and Manufacturing Curriculum Development through Research Experience for Teachers, Proceedings of the 2019 Institute of Industrial and System Engineers Annual Conference and Expo, May 18-21, 2019, Orlando, FL.
[24] Weihang Zhu, Xuejun Fan, Julia Yoo, Dorothy Sisk, Nicholas Brake, **Xinyu Liu**, Xianchang Li, Jiang Zhou, First Year Experience RET Site: Incorporating Advanced Design and Manufacturing to High School Curriculum, American Society of Engineering Education, June 2018, Salt Lake City, UT
[25] Ezra Wari, Weihang Zhu, Xinyu Liu, "Genetic Algorithms Applications in the Food Process Industry", Proceedings of the 2015 Industrial and Systems Engineering Research Conference, May 2015, Nashville, TN.
[26] **Xinyu Liu**, Ning Lou, Swapnil Patole, Dan Rutman, Yachao Wang and Jing Shi, "Experimental Investigation of Micro-Machinability of Nano-TiC Reinforced Inconel Fabricated by Direct Metal Laser Melting", Proceedings of the 2015 International Mechanical Engineering Congress & Exposition, Nov 2015, Houston, TX
[27] **Xinyu Liu** and Weihang Zhu, "Design of a Low-cost Fiber Optical Occlusion Based Automatic Tool Setter for Micro Milling Machine". Flexible Automation and Intelligent Manufacturing Conference, San Antonio, USA. May 2014.
[28] Shreyas Shashidhara, **Xinyu Liu**, Weihang Zhu, James Curry, Victor Zaloom, Experimental Investigation of the Tool Wear and Tool Life in Micro Hard Milling, American Society of Mechanical Engineers Annual Conference (IMECE-65607), November 2013, San Diego, USA
[29] Weihang Zhu, Jiang Zhou, Md. A. Islam, Md. Shufean, **Xinyu Liu**, Development of a Mobile App for Learning System Dynamics, American Society of Mechanical Engineers Annual Conference (IMECE-62512), November 2013, San Diego, USA

[30] Gangenini, B., **Liu, X.,** (2012), "Finite Element Analysis on Single Grit Cutting in Micro-grinding", IIE Annual IE conference & Expo, May 19-23, 2012, Orlando, FL.

[31] Qian, Q., **Liu, X.**, Barrett, M., Charbeneau, R., (2012) "Physical Modeling Study on Hydraulic Performance of Rectangular Deck Drains", to appear, World Environmental & Water Resources Congress, May 20~24, 2012, Albuquerque, NM.

[32] **Liu, X,** Zhu, W., and Zaloom, V., (2011) "Multi-objective Optimization for the Micro-milling Process with Adaptive Data Modeling", ASME International Conference of Manufacturing Science and Engineering, June 13-17, 2011, Corvallis, OR

[33] **Liu, X.**, (2010) "Experimental Investigation of Micro-milling Accuracy Using On-Macchine Measurement System", ASME International Conference of Manufacturing Science and Engineering, October 12-15, Erie, PA.

[34] **Liu, X.** (2010), "In-situ Metrology System for Micro-Milling Machine", Proceedings of the 9th International Conference on Frontiers of Design and Manufacturing, ChangSha, China.

[35] Pandian, P. Kai, F., Yang, L., and **Liu, X.**, (2010) "Systematic Approach to High Mix Low Volume Manufacturing: A Case Study", Proceedings of the 9th International Conference on Frontiers of Design and Manufacturing, ChangSha, China.

[36] Pandian, P., Yang, L. and **Liu, X.**, (2010) "Lean Transformation for High Mix Low Volume Production: A Case Study", Proceedings of the 2010 Industrial Engineering Research Conference, Cancun, Mexico.

[37] Atul Dhanorker, **Liu, X.**, Tuğrul Özel (2007) "Micromilling Process Planning and Modeling for Micromold Manufacturing", *Proceedings of MSEC 2007, ASME International Conference of Manufacturing Science and Engineering,* Atlanta, GA, USA.

[38] Tuğrul Özel, **Liu, X.,** Atul Dhanorker (2007) "Modeling and Simulation of Micromilling Process", *CIRP 4th International Conference and Exhibition on Design and Production of Machines and Dies/Molds,* Çeşme, Turkey.

[39] **Liu, X.**, Jun, M., DeVor, R.E., and Kapoor, S.G., (2006), "Prediction and Analysis of Surface Location Error in Micro-Endmilling", *Proceedings of 2nd International Workshop on the Next-Generation Microfactory System,* July 6-7, 2006, Jeju, Korea.

[40] **Liu, X.**, Jun, M., DeVor, R. E., and Kapoor, S. G., (2004) "Cutting mechanisms and their Influence on dynamic forces, vibrations and stability in micro-endmilling", *Proceedings of ASME 2004 IMECE,* Anaheim, CA, USA.

[41] **Liu, X.**, Vogler, M. P., Kapoor, S. G., DeVor, R. E., Ehmann, K. F., Mayor, R., Kim C. and Ni, J., (2004), "Micro-endmilling with meso-machine-tool system," *NSF Design, Service and Manufacturing grantees and Research Conference Proceedings*, Dallas, TX.

[42] Vogler, M. P., **Liu, X.**, DeVor, R. E., Kapoor, S. G., Subrahmanian, R., Sung, H., and Ehmann, K. F., (2002) "Miniaturized machine tools for CNC-based micro/meso-scale machining of 3D features," the *Third International Workshop on Microfactories*, Minneapolis, MN, USA.

▪ DISSERTATION AND THESIS DIRECTED

Doctor of Engineering

1. Swapnil Patole, "Experimental Investigation and Theoretical Modeling of Ultrashort Pulse Laser Ablation", Doctor of Engineering in Industrial Engineering, Advisor: Xinyu Liu, Committee Members: Weihang Zhu, James Curry, Jiang Zhou, May 2018.
2. Ning Lou, "Mechanical Micro-machining and Laser Micro-machining", Doctor of Engineering in Industrial Engineering, Advisor: Xinyu Liu, Committee Members: Weihang Zhu, James Curry, Jiang Zhou, December 2016.

3. Shreyas Shashidhara, "Tool Wear and Tool Life in Micro-endmill under Dry and MQL Conditions", Doctor of Engineering in Industrial Engineering, Advisor: Xinyu Liu, Committee members: Weihang Zhu, James Curry, Jiang Zhou, , December 2013
4. B. Gangineni, "Finite Element Analysis and Multi-objective Optimization of Microgrinding", Doctor of Engineering in Industrial Engineering, Advisor: Xinyu Liu, Committee members: James Curry, Alberto Marquez, Weihang Zhu
5. Pugalenthi Pandian, "Quantitative Justification and Illustration of Quick Response Manufacturing Principle", Doctor of Engineering Field Study, December 2010

Master of Science and Engineering:

6. Swagatika Patra, "Modification of Surface Topography in the Application of Biofouling of Ship Hull Using Picosecond Laser", May 2017.
7. Raghabendra Rout, "Modification of Surface Topography in the Application of Biofouling of Medical Implants Using Picosecond Laser", May 2017.
8. Sriram Pydi, "Effect of Minimum Quantity Lubrication on Surface Roughness in Micro-milling", Master Thesis, December, 2011
9. Maheshwaran Ramalingam, "Standardization and Flexible Work Cells for High Variety, Low Volume Manufacturing" Master Thesis, August 2009

▪ PROFESSIONAL SERVICE

Editorial Board Member:

- International Journal of Mechatronics and Manufacturing Systems 2009 – present

Technical Committee Chair

- ASME Manufacturing Engineering Division (MED) Nano/Micro/Meso Manufacturing (NMMM) Technical Committee, 2016~2020.

Technical Committee Vice-Chair

- Technical Committee Vic-Chair, ASME Manufacturing Engineering Division (MED) Nano/Micro/Meso Manufacturing (NMMM) Technical Committee, 2016~2020.

Symposium Organizer:

- ASME International Manufacturing Science and Engineering Conference 2010

Reviewer - peer-reviewed journals and conferences: 2006 – present

- International Journal of Machine Tools and Manufacture
- International Journal of Mechatronics and Manufacturing Systems
- ASME Journal of Manufacturing Science and Engineering
- International Journal of Nano-Manufacturing
- Sensors and Actuators
- SME Journal of Manufacturing Processes
- ASME International Conference of Manufacturing Science and Engineering
- North American Manufacturing Research Conference

Panel Reviewer – National Science Foundation 2008

▪ SPONSORSHIP OF STUDENT ORGANIZATION/ROLE AS STUDENT ADVISOR

Founding faculty advisor for the ISA and SME Lamar Chapter,

- Initiate the effort in charting a student chapter of Society of Manufacturing Engineers and International Society of Automation at Lamar, and served as the faculty advisor;
- Offered a lab tour to engineering students, demonstrated the operation/working principle of 3D printer and micro-endmilling at Micro-manufacturing Lab.

Faculty advisor for the IISE Lamar Student Chapter, coordinated the following events:

- Six Sigma Green Belt Certificate Training each year since 2010, certified by IISE;
- Lean Manufacturing Green Belt Certificate Training each year since 2012, certified by IISE;

▪ PROFESSIONAL MEMBERSHIP

- American Society of Mechanical Engineers
- Society of Manufacturing Engineers
- International Society of Automation
- Institute of Industrial Engineers
- American Society for Quality