TEXAS STATE VITA

I. Academic/Professional Background

A. Name: Bin Xiao Title: Assistant Professor of Instruction

B. Educational Background

Degree	*Year*	*University*	*Major*	*Thesis/Dissertation*
Ph. D.	2006	University of Missouri-Columbia	ME	Modeling of Selective Laser Sintering of Single- Component Metal Powders
M. E.	2003	Chinese Academy of Sciences	ME	Two-phase Flow Simulation and Algorithm for Capacitance Tomography
B. E.	1997	Huazhong University of Sci.&Tech.	ME	

C. University Experience

Position	*University*	*Dates*
Associate Professor of Instruction	Texas State University	August 2026 – Present
Assistant Professor of Instruction	Texas State University	September 2024 – August 2026
Lecturer	Texas State University	January 2019 - August 2024
Postdoctoral Research Fellow	University of Connecticut	October 2006 - June 2008
Research Assistant	University of Missouri-Columbia	September 2003-September 2006

D. Relevant Professional Experience

Position	*Entity*	*Dates*
Team Lead	Astronautics Corporation of America	April 2016 - September 2017
Sr. Mechanical Engineer	CNPC USA	March 2014 - May 2015
Sr. Engineer	Superior Energy Services	May 2013 - March 2014
Development Engineer	Weatherford International	January 2011 - May 2013
Research Engineer	Tyco International	June 2008 - July 2010

II. TEACHING

A. Teaching Honors and Awards:

Faculty Choice Award in Senior Design Event, Ingram School of Engineering, 2019
Teaching Award of Honor, 2020
Industry Choice Award in Senior Design Event, Department of Engineering Technology, 2022
Nontenure Line Faculty Workload Release Award, Texas State University, 2024
Mid-Career Faculty Development Award, Texas State University, 2025

B. Courses Taught:

TECH 1311: Engineering Design Graphics (Spring 2019, Spring 2020 and Spring 2025)

TECH 2310: Introduction to CAD (Falls 2019-2023, Springs 2024-2025)

TECH 2351: Statics and Strength of Materials (Springs 2019, 2021, 2022,

2024, 2025, Falls 2019-2023, 2025 and Summer 2023, 2024)

TECH 3344: Applied Thermofluids (Falls 2019-2023, 2025)

TECH 4395: Automated Manufacturing Systems I (Falls 2019-2025)

TECH 4396: Automated Manufacturing Systems II (Springs 2019-2025)

TECH 4398: Senior Design (Springs 2019-2023 and Fall 2024)

C. Graduate Theses/Dissertations or Exit Committees (if supervisor, please indicate):

D. Courses Prepared and Curriculum Development:

a. Course Revisions:

Revising TECH 1311 (Engineering Design Graphics)
Revising TECH 2310 (Introduction to CAD)
Revising TECH 2351 (Statics and Strength of Materials)
Revising TECH 3344 (Applied Thermofluids)
Revising TECH 4395 (Automated Manufacturing Systems I)
Revising TECH 4396 (Automated Manufacturing Systems II)
Revising TECH 4398 (Senior Design)

E. Others:

I invited Paratus Diagnostics COO and CEO to my TECH 4398 Class. (February 2019)

Additional Comments: Spring 2019

Tesla managers gave a technical talk in my Tech 4395 Class (October 2023)

Additional Comments: Fall 2023

III. SCHOLARLY/CREATIVE

A. Works in Print (including works accepted, forthcoming, in press)

1. Books (if not referred, please indicate)

b. Textbooks:

1. **Xiao, B.,** (Ed.). (2027). *Smart Manufacturing Systems: A Practical Guide to CNC, 3D Printing, and Robotics in Modern Industry*, Elsevier. (In the progress)

2. Articles

a. Referred Journal Articles:

1. **Xiao, B.,** (2026), "An Innovative Numerical Approach to Simulating Regolith Ejecta Dynamics in Plume-Surface Interactions", *Int. J. Heat Mass Transfer*. (In preparation)

2. **Xiao, B.,** (2026), "Optimization Design and Performance Analysis of Exhaust Heat Recovery System", *Int. J. Heat Mass Transfer*. (In preparation)

3. **Xiao, B.** and Ye, Z. (2025), "Selective Laser Sintering: Processing, Materials, Challenges, Applications, and Emerging Trends", *Journal of Advanced Thermal Science Research*, 11, 65-99.

4. **Xiao, B.**, You, B. and Jin, T. (2024), "Computational Analysis of Selective Laser Sintering of Inconel 625", *Frontiers in Heat and Mass Transfer*, 22(2), 417-432.

5. **Xiao, B.**, (2024), "Heat Recovery from Automotive Exhaust Using Heat Pipes with Limited Fluid Charge," *Frontiers in Heat and Mass Transfer*, 22(1), 35-48.

6. Shabgard, H., **Xiao, B.**, Faghri, A., Gupta, R. and Weissman, W., (2014), "Thermal Characteristics of a Closed Thermosyphon under Various Filling Conditions," *Int. J. Heat Mass Transfer*, 70, 91-102.

7. **Xiao, B.**, (2012), "Comparison of Numerical and Experimental Results of Fire Induced Doorway Flows," *Fire Technology*, 48(3), 595-614.

8. **Xiao, B.**, Bahrami, H. and Faghri, A. (2010), "Analysis of Heat and Mass Transport in a Miniature Passive and Semi Passive Liquid-Feed Direct Methanol Fuel Cell," *J. Power Sources*, 195(8), 2248-2259.

9. **Xiao, B.** and Zhang, Y. (2009), "Numerical Simulation of Pulsatile Turbulent Flow in Tapering Stenosed Arteries," *Int. J. Num. Methods for Heat & Fluid Flow*, 19(5), 561-573.

10. **Xiao, B.** and Faghri, A. (2009), "Numerical Analyses for a Vapor Feed Miniature Direct Methanol Fuel Cell System," *Int. J. Heat Mass Transfer*, 52(15-16), 3525-3533.

11. Jewett, G., Faghri, A., and **Xiao, B.** (2009), "Optimization of Water and Air Management Systems for a Passive Direct Methanol Fuel Cell," *Int. J. Heat Mass Transfer*, 52(15-16), 3564-3575.

12. **Xiao, B.** and Faghri, A. (2008), "A Three-Dimensional Thermal-Fluid Analysis of Flat Heat Pipes," *Int. J. Heat Mass Transfer*, 51(11), 3113-3126.

13. **Xiao, B.** and Faghri, A. (2008), "Transient Modeling and Analysis of a Passive Liquid-Feed DMFC," *Int. J. Heat Mass Transfer*, 51(11), 3127-3143.

14. **Xiao, B.** and Zhang, Y. (2008), "Numerical Simulation of Direct Metal Laser Sintering of Single-Component Powders on Top of Sintered Layers," *ASME J. of Manu. Sci. Eng.*, 130(4), 041002.

15. **Xiao, B.** and Zhang, Y. (2007), "Marangoni and Buoyancy Effects on Direct Metal Laser Sintering with A Moving Laser Beam," *Num. Heat Transfer, Part A*, 51(7-8), 715-733.

16. **Xiao, B.** and Zhang, Y. (2007), "Analysis of Melting of Alloy Powder Bed with Constant Heat Flux," *Int. J. Heat Mass Transfer*, 50(11-12), 2161-2169.

17. **Xiao, B.** and Zhang, Y. (2007), "Laser Sintering of Metal Powders on Top of Sintered Layers under Multi-Line Laser Scanning," *Journal of Physics D: Applied Physics*, 40 (21), 6725-6734.

18. **Xiao, B.** and Zhang, Y. (2007), "Analysis of Partial Melting in Metal Powder Bed with Constant Heat Flux," *Heat Transfer Engineering*, 28(5), 472-483.

19. **Xiao, B.** and Zhang, Y. (2006), "Partial Melting and Resolidification of Metal Powder in Selective Laser Sintering," *AIAA J. Thermophysics and Heat Transfer*, 20(3), 439-448.

20. Konrad, C., Zhang, Y., and **Xiao, B.** (2005), "Analysis of Melting and Resolidification in a Two-Component Metal Powder Bed Subjected to Temporal Gaussian Heat Flux," *Int. J. Heat Mass Transfer*, 48(19-20), 3932-3944.

3. Conference Proceedings

a. Referred Conference Proceedings:

1. Zhang, P., and **Xiao, B.** (2025), "Proactive Behavioral Risk Management in Remote Work Environments: A Deep Learning-Driven, Theory-Based Simulation Framework", *TREO (Technology, Research, Education, and Opinion) Talks, ICIS 2025*, Nashville, TN, December 14-17.

2. **Xiao, B.**, You, B. and Jin, T. (2023), "Thermal-Fluid Behaviors and Morphology Evolution of Molten Pool During Selective Laser Sintering of Inconel 625", *ASME 2023 International Mechanical Engineering Congress and Exposition*, New Orleans, October 29-November 2, 2023.

3. **Xiao, B.** (2023), "Thermal Analysis of Thermosyphon for Waste Heat Recovery from Auto Exhaust Using Limited Fluid Charge," *ASME 2023 International Mechanical Engineering Congress and Exposition*, New Orleans, October 29-November 2, 2023.

4. Jin, T., Zhu, E, and **Xiao, B**. (2023), "Cost-Availability Analysis for Redundant Systems

with Spares Inventory and Emergency Repair," *28th ISSAT International Conference on Reliability and Quality in Design,* San Francisco, August 3-5, 2023.

5. Accosta, R., Magnone, Z., Crocker, J., **Xiao, B.**, Dembsey, N.A., and Meacham, B.J. (2010), "Transport of Toxic Products-Comparison of Experimental and Numerical Results Part One: Non-Sprinklered Scenarios," *Proceeding of INTERFLAM 2010, 12th International Conference on Fire Science and Engineering*, Nottingham, UK, July 5-7, 2010.

6. **Xiao, B.** and Zhang, Y. (2009), "Advances in Thermal Modeling of Selective Laser Sintering of Metal Powders," *6th International Symposium on Multiphase flow, Heat Mass Transfer and Energy Conversion*, Xi'an, China, July 11-15, 2009.

7. **Xiao, B.** (2009), "Comparison of Numerical and Experimental Results of Fire Induced Doorway Flows," *Suppression and Detection Research and Applications-a Technical Working Conference*, Orlando, FL, February 24-27, 2009.

8. **Xiao, B.** and Faghri, A. (2008), "Numerical Analysis for a Vapor Feed Miniature Direct Method Fuel Cell System," *Proceedings of 2008 ASME Heat Transfer Summer Conference*, Jacksonville, FL, August 10-14, 2008.

9. **Xiao, B.** and Zhang, Y. (2006), "Numerical Simulation of Direct Metal Laser Sintering of Single-Component Powder on Top of Sintered Layers," *2006 ASME International Mechanical Engineering Congress*, Chicago, Illinois, November 5-10, 2006.

10. **Xiao, B.** and Zhang Y. (2005), "Partial Melting and Resolidification of Single-Component Metal Powder with a Moving Laser Beam," *Proceedings of 2005 ASME Summer Heat Transfer Conference*, San Francisco, CA, July 17-22, 2005.

11. **Xiao, B.** and Zhang, Y. (2004), "Analysis of Melting in a Single-Component Metal Powder Bed Subject to Constant Heat Flux Heating," *Proceedings of 2004 ASME Heat Transfer/Fluid Engineering Summer Conference*, Charlotte, NC, July 11-15, 2004

7. Other Works in Print:

1. "Numerical Simulation and Physical Validation of Regolith Ejecta During Plume Surface Interaction", Webb, D., Garrison, G. C., and **Xiao, B.**, Human Lander Challenge, NASA, Technical Report, July 23, 2024.

2. "Investigating the Effects of Sprinkler Sprays on Fire-Induced Doorway Flows: A Two-Part Study", Crocker, J. and **Xiao, B.**, Tyco Fire Protection Products Technical Report.

3. "Deburring Mill Tool for Wellbore Cleaning", Bansal,K. R., Meeks, W.A., Haq, A.M., **Xiao, B.**, Mihalj, M., Kippie, P.D., and Bailey, F.T., U.S. Patent # CA 2830233 A1

B. Grants and Contracts

1. Funded External Grants and Contracts:

Title: Integrating Sustainability Across Selected Engineering and Construction Courses
Period: April 2026 – January 2027
Direct Costs: $8000
Role: Principal Investigator

Source: Office of Creative Technologies and Media Engagement, Texas State University
Title: Using XR Visualization to Support Learning in TECH 4398
Period: January 2026 – May 2026
Direct Costs: $1000
Role: Principal Investigator

Source: Office of Faculty Success, Texas State University
Title: Improving Engineering Education with a Practical Textbook
Period: July 2025 - Present
Direct Costs: $2000
Role: Principal Investigator

Source: Human Lander Challenge, NASA
Title: Numerical Simulation and Physical Validation of Regolith Ejecta During Plume Surface Interaction
Period: March 2024 - June 2024
Direct Costs: $9,450
Role: Principal Investigator

Source: Paratus Diagnostics
Title: Automated Part Sorter
Period: March 2019 - May 2019
Direct Costs: $2,307
Role: Principal Investigator

4. Submitted, but not Funded, Internal Grants and Contracts:

Source: Internal Submission for TWC Youth STEM Program, Texas State University
Title: 3D Printing & Digital Design Summer Camp
Period: Summer 2027
Direct Costs: $34,500
Role: Principal Investigator

Source: Internal Submission for TWC Youth STEM Program, Texas State University
Title: Smart Robotics Summer Camp for Middle School Students
Period: Summer 2027
Direct Costs: $34,900
Role: Principal Investigator

Source: Internal Submission for TWC Youth STEM Program, Texas State University
Title: Texas State STEM Innovation Fair
Period: Summer 2027
Direct Costs: $43,000
Role: Principal Investigator

Source: Research Enhancement Program, Texas State University
Title: Proactive Behavioral Risk Management in Remote Work Environments: A Deep Learning-Driven, Theory-Based Simulation Framework.
Period: January 2025 - May 2025
Direct Costs: $16,000
Role: Co-Principal Investigator

IV. SERVICE

A. University:
Member of Writing Team, PhD proposal in Engineering Management (Summer 2023)

B. Professional:
Workshop Chair (2025), International Conference on Hydro-mechatronics and Advanced Robot Control Technology, Guilin, March 28-30.
Editor (2024-Present), Journal of Advanced Thermal Science Research
Reviewer (2025-), Advanced Functional Materials (impact factor: 19.0)
Reviewer (2025-), Advanced Science (impact factor: 14.1)

C. Departmental:
Member of TECH 2351/CSM 3360 Teaching Methods Group (Spring 2023)
Member of EM Graduate Curriculum Committee (Spring 2025)