Jordan E. Linwood

North Carolina State University
Department of Mechanical and Aerospace Engineering
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Education

North Carolina State University – Doctor of Philosophy in Mechanical Engineering, Expected May 2028
Dissertation Advisor: Dr. Anika Shah
Dissertation Title: *'Smart Material Design for Thermal Regulation in Advanced Manufacturing'*
National Defense Science and Engineering Graduate (NDSEG) Fellowship

North Carolina State University – Master of Science in Mechanical Engineering, May 2023
Thesis: 'Thermal Behavior of Phase Change Materials in Additive Manufacturing'

University of Illinois Urbana-Champaign – Bachelor of Science in Mechanical Engineering, May 2021
Minor: Materials Science
James Scholar Honors Program, Pi Tau Sigma Honor Society

Academic Positions

Graduate Research Assistant, Smart Materials and Thermal Systems Lab, NCSU, 2022–Present

Graduate Teaching Assistant, MAE 302: Engineering Thermodynamics II, NCSU, Fall 2023

Publications

Linwood, J., Shah, A., & Tan, R. (2024). Development of Smart Materials for Thermal Control in Additive Manufacturing. Materials & Design.

Torres, M., & **Linwood, J**. (2023). Phase Change Material Applications in Industrial Heat Management. International Journal of Thermal Sciences.

Linwood, J., Zhao, Y., & Shah, A. (2023). Adaptive Thermal Systems for Energy-Efficient Electronics. Journal of Heat Transfer.

Linwood, J., & Choi, B. (2023). Machine Learning Models for Predictive Thermal Behavior in Smart Devices. IEEE Transactions on Components, Packaging and Manufacturing Technology.

Kim, D., **Linwood, J.**, & Shah, A. (2022). Real-Time Sensing and Actuation in Composite Thermal Materials. Composites Science and Technology.

Linwood, J., & Miller, S. (2022). Characterization of Bio-Based Phase Change Materials. Renewable Energy Materials.

Linwood, J., & Hassan, L. (2021). Finite Element Modeling of Heat Flow in Aerospace Alloys. Engineering Computations.

Fellowships and Awards

NDSEG Fellowship, Department of Defense, 2022–2026

ASME Graduate Research Award in Smart Materials, 2023

Best Paper Award, SPIE Smart Materials Conference, 2023

Selected Works in Progress

Preparing manuscript on AI-driven diagnostics in heat exchanger systems.

Conducting experimental validation of hybrid composite-PCM systems in partnership with Oak Ridge National Laboratory.

Selected Conference and Invited Presentations

“Thermal Regulation in Additive Manufacturing,” ASME IMECE, New Orleans, LA, November 2024.

“Phase Change Material Integration in Smart Devices,” SPIE Smart Materials Conference, San Diego, CA, March 2023.

“Machine Learning in Heat Transfer Applications,” IEEE Thermal Management Conference, Boston, MA, August 2022.

Research Grants

Smart Material Engineering for Energy Applications, NDSEG Fellowship, $156,000, 2022–2026.

Advanced PCM Integration in Sustainable Devices, DOE University Partnership Program, $42,000, 2023–2024.

Memberships in Associations and Institutional Affiliations

American Society of Mechanical Engineers (ASME)

Society of Women Engineers (SWE)

SPIE Smart Structures and Materials Community

Graduate Peer Mentoring Program – NC State, Mentor, 2022–Present