

## **Open Ph.D. Position in the Department of Mechanical Engineering at Binghamton University**

One Ph.D. position with full financial support in the form of Research Assistant is available in **Integrated Computational Materials Design (ICMD) Lab** (<https://icmdl原因.github.io/>) led by Dr. Dehao Liu in the Department of Mechanical Engineering at State University of New York (SUNY) at Binghamton, starting from Fall 2022 or Spring 2023. This specific position is focused on the **in-situ process monitoring of laser powder bed fusion**. The student should have strong experimental skills in **optical sensing, advanced manufacturing, and materials characterization**.

**Deadline:** The position is open until filled.

### **About ICMD Lab**

Our overall research goal is to construct robust and comprehensive process-structure-property relationships to conduct systematic process and materials design for advanced manufacturing processes. To do so, we develop and integrate novel multiscale multiphysics simulation models and physics-informed machine learning models at different time- and length-scales. Current primary research topics include but not limited to:

- Process monitoring and control for digital twins in metal additive manufacturing
- Multiscale multiphysics modeling and simulation for metal additive manufacturing
- Physics-informed machine learning
- Optimization and uncertainty quantification

### **About Binghamton University**

Binghamton University is a world-class public ivy institution that unites more than 130 broadly interdisciplinary educational programs with some of the most vibrant research in the nation. It is classified among "R1: Doctoral Universities – Very high research activity". Binghamton

University is ranked tied for 33<sup>rd</sup> among public schools, ranked as the best SUNY school for 2022 by U.S. News & World Report. Our unique character - shaped by outstanding academics, facilities, and community life - promotes extraordinary student success. Binghamton merges rigorous academics, distinguished faculty, and state-of-the-art facilities to engage and challenge its 18,000 students.

### **About Thomas J. Watson College of Engineering and Applied Science**

Named for the founder of IBM Corp., the Thomas J. Watson College of Engineering and Applied Science at Binghamton University was founded in 1983. Today, Binghamton is home to the fastest-growing engineering school in New York state, offering innovative bachelor's, master's and doctoral programs in 10 fields of study to over 3,100 students. Annually, Watson has over 2,000 bachelor's, 425 doctoral and 625 master's students from over 50 countries.

### **Qualifications**

- B.S. or M.S. in mechanical/aerospace/civil engineering, materials science, applied physics, or a closely related discipline. M.S. with project experience and publication record is preferred.
- Be passionate and self-motivated to do important/revolutionary work in the aforementioned research topics.
- Strong background and interest in process monitoring, advanced manufacturing, and materials characterization.

### **How to Apply**

Interested candidates are invited to email Dr. Dehao Liu ([dehaoliu@binghamton.edu](mailto:dehaoliu@binghamton.edu)) with a short introduction of your research interests, the latest CV (including GRE/TOFEL scores and contact information of three professional references), and transcripts. GRE score is optional.

More information about admissions and applications can be found at:

<https://www.binghamton.edu/grad-school/admissions/apply/index.html>