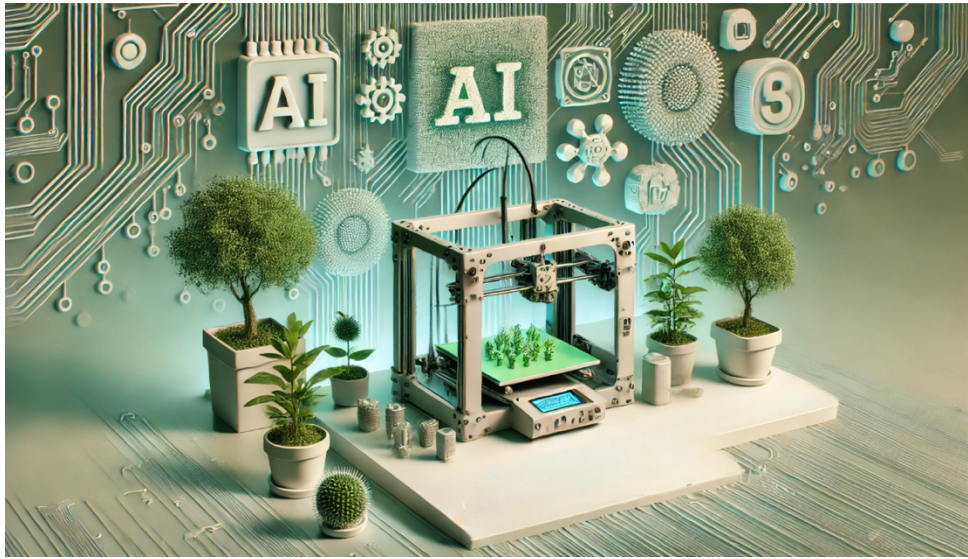


## Research Opportunities in Smart Sustainable Additive Manufacturing



**Positions:** Ph.D., Master's, and Undergraduate Students

**Academic Unit:** Department of Mechanical Engineering

**Location:** Price Faculty of Engineering, University of Manitoba, Winnipeg, MB

**Research Area:** Additive Manufacturing, Sustainable Manufacturing, Life Cycle Assessment, Artificial Intelligence, Internet of Things, and Computational Intelligence

**Description:** The Smart and Sustainable Advanced Manufacturing ( $S^2 \leftrightarrow AM$ ) lab at the University of Manitoba is seeking highly motivated, and collaborative Ph.D., Master's, and undergraduate students to join our research group on developing smart sustainable Additive Manufacturing (AM). The successful candidates will gain hands-on experience working with both plastic and metal AM. They will also benefit from direct guidance, competitive stipends, and funding support for their research activities. Ideal candidates are those with strong critical thinking skills, a passion for research challenges, and an enthusiasm for exploring novel ideas.

### **Required Qualifications:**

- Strong experience in AM processes, Life Cycle Assessment, and circular economy principles.
- Proficiency in Machine Vision and Machine Learning, with a strong background in applying Deep Learning algorithms such as Deep Neural Networks and Convolutional Neural Networks.
- Familiarity with Internet of Things (IoT) technologies and their application in real-time data monitoring and management.
- Excellent programming skills in Python, including a strong optimization background.
- Experience with Visual Studio and Graphics Processing Unit (GPU) programming for computing tasks, particularly in the context of AM and volume rendering, is a plus.
- CGPA > 85% with a mechanical, mechatronics, or computer engineering background.

- Strong communication and analytical problem-solving skills, with the ability to work independently and collaboratively in a multidisciplinary research environment.

**Financial Support and Scholarships:** For information on financial support and scholarships available to undergraduate and graduate students, please visit the University of Manitoba's Price Faculty of Engineering Scholarships and Awards page: <https://umanitoba.ca/engineering/student-experience/scholarships-and-awards#graduate-awards-and-funding>.

**Application Process:** Interested candidates should submit the following documents to Dr. Ahmad Naser ([a.naser@umanitoba.ca](mailto:a.naser@umanitoba.ca)), with the email subject line as the title of the post:

- A cover letter outlining their research interests, relevant experience, and motivation.
- A detailed CV including their academic background, research experience, publications, and references.
- Academic Transcripts.

Applications are reviewed and candidates are interviewed on an ongoing basis. Dr. Naser is committed to fostering an inclusive, equitable, and diverse research environment. Our research group actively promotes gender equality and strives to create opportunities for women, Black, Indigenous, People of Color (BIPOC), and ethnic minorities. We are dedicated to ensuring all team members feel safe, respected, and valued. Dr. Naser strongly encourages applications from candidates of diverse backgrounds and those who can contribute to the diversity and excellence of our academic community.