

**September 4, 2025**

## **PhD and MSc positions available at the Intelligent Design & Operation for Built Environment (IDOBE) research group, University of Alberta**

*Location: University of Alberta, Department of Civil and Environmental Engineering, IDOBE lab:*

<https://idobe.engineering.ualberta.ca/>

*Supervisor: Dr. Yuxiang Chen*

*Start Date: As soon as possible*

### **About the opportunity**

The Intelligent Design of Buildings and Environment (IDOBE) group in the Department of Civil and Environmental Engineering at the University of Alberta is seeking a highly motivated MSc and PhD students to join a dynamic research team dedicated to advancing sustainable technologies and systems for cold climate regions. This is an excellent opportunity to contribute to high-impact, interdisciplinary research addressing real-world challenges in infrastructure, agriculture, and sustainability.

The successful candidate will have the opportunity to engage in interdisciplinary projects in one or more of the following areas:

1. Timber Engineering – Improving life-cycle performance, durability, and sustainability of wood-based construction systems.
2. Controlled Environment Agriculture – Enhancing life-cycle design, climate control, and energy optimization to support food security and sustainable agriculture.
3. Masonry Systems – Developing innovative solutions for resilient and energy-efficient masonry construction in northern climates.

Our research integrates experimental, computational, and analytical approaches, with strong collaboration across disciplines such as mechanical, electrical, environmental, and computer science engineering. We are committed to fostering an inclusive, diverse, and equitable environment that celebrates individual differences and promotes a culture of belonging. You will be part of the IDOBE research team, working to understand and enhance the performance of sustainable building systems, including greenhouse cultivation in both urban and rural contexts. Your work may involve laboratory experiments, research greenhouse trials, numerical modeling, and simulation studies to investigate the impact of environmental and system parameters on performance, durability, and efficiency.

### **Position overview:**

The applicants will contribute to ongoing research initiatives within the IDOBE lab, focusing on modeling, design, performance assessment, and operation of sustainable building systems and technologies. Projects may involve:

- Conducting research in sustainable building design, life-cycle evaluation, and optimization for cold climates.
- Designing and implementing experimental setups in laboratory or field settings, including greenhouse facilities, timber structures, or masonry systems.
- Developing analytical and numerical models to assess building performance, climate control systems, and energy optimization strategies.
- Performing advanced data analysis, simulation, and environmental monitoring.
- Collaborating with a multidisciplinary team of faculty, graduate students, and industry partners.
- Contributing to publications, technical reports, and research proposals.

### Minimum Qualifications:

- Master's degree (for PhD applicants) in a relevant engineering discipline (e.g., civil, mechanical, electrical, environmental, agricultural, or computer science engineering) or Bachelors degree (for Master's applicants) in related disciplines.
- Strong academic record (cGPA > 3.0 or equivalent).
- High motivation, excellent organizational skills, and a passion for research.
- Strong communication skills in English (IELTS > 7.0 or equivalent).
- Demonstrated knowledge in sustainable system design, climate management, and/or optimization of building or greenhouse energy consumption.
- Experience in data analysis, modeling, or simulation.

### Preferred Qualifications:

- Experience in controlled environment agriculture, greenhouse technology, or plant growth analysis.
- Proficiency in data analytics, simulation tools, and programming (e.g., Python, MATLAB).
- Familiarity with experimental setups, environmental monitoring, or material testing.
- Knowledge of green building technology and life-cycle performance assessment.
- Experience with machine learning techniques and optimization methods.
- Peer-reviewed publications.

### How to Apply:

To apply, please submit the following documents to [idoobe@ualberta.ca](mailto:idoobe@ualberta.ca)

- Cover letter.
- Detailed academic CV, including the names of at least three references
- Masters' degree transcripts (for PhD applicants) and Bachelors transcripts (for Masters applicants).
- IELTS score card

**We thank all applicants for their interest; however, only those selected for an interview will be contacted.**

*The University of Alberta is committed to an equitable, diverse, and inclusive workforce. We welcome applications from all qualified persons. We encourage women; First Nations, Métis and Inuit persons; members of visible minority groups; persons with disabilities; persons of any sexual orientation or gender identity and expression; and all those who may contribute to the further diversification of ideas and the University to apply.*