



PhD Position Available – Particle pollution and control strategies

Mechanical Engineering

How to Apply

Interested candidates may contact **Dr. Lexuan Zhong** by email at lexuan.zhong@ualberta.ca to discuss their qualifications and the project. To apply for this opportunity, please submit a complete application package including a cover letter detailing your specific interest in this project, resume, and transcripts as soon as possible.

Position

Dr. Zhong of the Department of Mechanical Engineering at the University of Alberta invites applications and queries for a full-time PhD research assistant position in the area of **Indoor Air Quality under Wildfire Events**.

Project

Wildfires are increasingly common, posing health risks through fine particulate matter (PM_{2.5}) in smoke that affects indoor air quality. Current guidelines recommend reducing outdoor air ventilation or using efficient filters, but these can degrade indoor air and filter effectiveness is uncertain. The proposed project aims to develop and test wildfire-resilient ventilation systems that adapt to smoke, ensuring clean indoor air and extended filter life through experiments, field measurements, and simulations, ultimately improving occupants' health in wildfire-prone areas.

Specialized Training & Skill Development

Training of undergraduate and graduate research assistants is a paramount duty for us. The selected candidate will receive formal training in the following practical areas:

- Ventilation systems,
- Air-handling unit,
- In-duct filter testing,
- Design experiments,
- Aerosol measurement and data analysis, and
- Modeling and simulation

Required Qualifications

- A MSc degree in Environmental Engineering, Mechanical Engineering, Civil Engineering, or Building Engineering for PhD application,
- Demonstrated academic excellence with a minimum GPA of 3.4,
- A strong interest and/or experience in research with a desire to excel as a researcher,
- Proven ability to work independently, self-motivated, and enthusiastic about research,
- Possess a strong work ethic and enjoy reading academic papers,
- Exceptional written and verbal communication skills with proficiency in English.

Desired Qualifications

- Experience in conducting literature reviews,
- Research experience in particle pollution is highly welcomed,
- Familiarity with filtration principles and technologies,
- Proficiency in math and modeling skills,
- Willingness to expand knowledge beyond the engineering field,
- Possess experimental and/or numerical experience as an asset.

Start Date: Fall 2024

Funding Availability: Funding is available for this position.

Research Website

For more information, please visit: <https://sites.ualberta.ca/~lexuan1/>