

APRIL: Air Pollution Research and Innovation Laboratory

<http://tan.uwaterloo.ca/>

Location

E3 2108

Management

Director:

- Chao Tan (tanz@uwaterloo.ca; x38718)

Tour operator:

- Chao Tan

Users

- Chao Tan's Group (Mechanical Engineering)
- **Industrial Partners**
 - Enersul
 - Imperial Oil
 - Esso

Research

- Thermochemical Conversion of Biomass to Biofuels
- Air Pollution Control
- Indoor Air Quality

Lab Capability

- Produce bio oil
- Air admission - NO_x, CO₂
- Diffusion Experiment
- Chemical Reaction Design

Selected Projects

- Absorption of air pollution using chemical spray tower (Imperial Oil)
- Extraction of bio oil
- Degassing project (Enersul)
- Airborne nanoparticle filtration using granular filters
- Degassing liquid sulfur using fine spray and microbubbles
- Hydrothermal conversion of cellulose to HMF and biooil
- Particle resuspension from HVAC duct
- Simultaneous absorption of NO_x/SO_x from flue gas

Equipment

- Gas Chromatograph
- Condensation Particle Counter
- Handheld Flue Gas Analyser
- Energy Efficiency Systems

- Industrial Fluidized Bath
- Box Furnace
- Fisher Scientific Furnace
- Micro Gas Chromatograph
- Centrifuge
- Single Droplet Generator
- Fluidized Bed Aerosol Generator
- Aerosol Diluter

Supporting Partners

- NSERC
- CFI
- AARI
- UW
- University of Calgary
- Enersul
- Imperial Oil
- Esso
- Industry Contracts

Access Rights

- Opened to faculty/university for a fee
 - \$100/hr
- Opened to public for a fee
 - \$200/hr
- Process:
 - Contact Prof. Tan directly with requested service; they may not be able to help sometime
 - Usually contact them 2 weeks in advance
- Training:
 - Prefer the equipment be operated by only their HQPs, unless it is loaned out. Then they have to have an Agreement and insurance.