**APRIL: Air Pollution Research and Innovation Laboratory**

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

## Location

E3 2108

## Management

Director:

* Chao Tan ([tanz@uwaterloo.ca](mailto: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 - NOX, CO2
* Diffusion Experiment
* Chemical Reaction Design

## Selected Projects

* Absorption of air pollution using chemical spray tower (Imperial Oil)
* Extraction of bio oil
* Degasing 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 NOx/SOx 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.