# Giga-to-Nano Lab (G2N)

<http://g2n.uwaterloo.ca/>

## Location

E3 1157

## Management

Director:

* William Wong ([william.wong@uwaterloo.ca](mailto:william.wong@uwaterloo.ca); x31121)

Tour operator:

* William Wong
* Hany Aziz ([h2aziz@uwaterloo.ca](mailto:h2aziz@uwaterloo.ca); x36848)

## Users

* Academic Users
  + Professors
  + Staff
  + Students
  + Graduates
  + research assistants
  + Post-docs
  + Visiting scholars
  + Students (Chemical engineering, chemistry, physics, ECE, mechanical engineering, nanotechnology engineering & mechatronics engineering)
* Industrial Contracts
  + Ignis Innovation
  + Kodak – Carestream
  + Vitek
  + Dalsa
  + Rhodia
  + Arise Technology

## Research

* Medical Image Sensors
* Flexible Electronics
* Organic Light Emitting Diodes
* Large Area Electronics
* Development of Novel Electronic Materials
* Design, Processing & Integration of Electronic Devices and Circuits
* Rapid System Prototyping (includes design, fabrication & testing)
* Nanowire Synthesis
* Thin film transistors
* Transparent Flexible Electronics
* Nano-imprint Lithography
* Organic Semi-conductors

## Lab Capability

* Materials Integration
* Materials Characterization
* Device Testing
* Process Development
* Circuit Design & Fabrication
* Prototype

## Selected Projects

* Ignis: Transparent flexible electronic paper
* Kodak: Digital medical imaging electronic sensors
* Photovoltics: solar cells; organic semi-conductors; silicon cells

## Equipment

* Edward Sputtering
* Mask Aligner MA6
* Phantom II RIE
* Dimension 3100 Scanning Probe Microscrope
* MVS Cluster Tool
* Wet Processing Stations
* DISCO DAD-2H/6 Dicing Saw
* Keithley 4200-SCS Semiconductor Characterization
* Hitachi S-3000N Scanning Electron Microscope
* OLED Intelvac
* PlasmaTherm PECVD
* CVE Sputtering
* Cluster Sputtering
* High Temperature PECVD
* Rapid Thermal Processing
* Reel to Reel Cluster Tool
* Mask Aligner MJB3
* Karl Suss Photoresist Coater
* Kulicke and Soffa Model 4123 Bonder
* Dektak 8 Profilometer
* Wyko Optical Profiler
* WVASE32 Spectroscopic Ellipsometer
* Stressguage
* Reichert Polylite 88
* UV-2501PC Spectrophotometer
* FT-IR 8400S Spectrophotometer

## Supporting Partners

* CFI: funded to build the lab ($17 million)
* NSERC
* ORF
* OCE
* CRD
* Industrial Contracts

## Access Rights

* **Open to University Students/ Faculty**  
  $1600/term (cost may be different depending on usage)
* **Open to Public/Industry for a Fee**
  1. Company with research grant - $3200/term
  2. Independent researcher without research grant - $7500/annual per user + $3200/term per user + hourly wage for equipment
  3. Independent researcher without research grant - $7500/year for 4 people (money upfront)
* **Process:**  
  First contact the director about project and set up a meeting, draft agreement and finalize it.