

## 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
- Photovoltaics: solar cells; organic semi-conductors; silicon cells

## Equipment

- Edward Sputtering
- Mask Aligner MA6
- Phantom II RIE
- Dimension 3100 Scanning Probe Microscope
- 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
- Stressgauge
- 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.