# Electronics and Semiconductors

**Research**

- Bipolar Magnetic Junction
- Organic Ferroelectronics
- Emitter-Coupled Transistor Logic
- All Carbon Spin Logic
- Two Qubit Gate
- Computing Logic Family
- Polymers for Protecting Circuity
- Ultralow Power Carbon Nanotube Logic Circuits
- Novel Logic Family with Nanowire Transistors
- Inks for Use in Next Generation Solar Cells
- Quantum Interference Molecular Electronic Devices

**Research Validation**

- Nanophotonics Directional Coupler
- Efficient Thin Film Synthesis
- p-Type Transparent Conductors
- Thiophene Based Materials for Optoelectronics
- Electro-Optic Films
- Nanoscale Self-Assembled Dielectrics
- Silver Cathode for Lithium Batteries
- Magnetic Field Sensors
- Organic Electro-Optic Chromophores
- Microscopy for Current Flow
- Superlattice Dielectrics
- Hot Pressing Method for Transistors
- Conductive Thin Films Doped with Tin and Zinc
- Self-Assembled Organic Nanodielectrics
- High Energy Density Nanocomposites
- Transparent Conducting Graphene/Ultra Thin Films
- Transparent Nanowire Transistors
- Organic Photovoltaics with Nickel Oxide
- Two Dimensional Nanomaterial Sorting
- Nanoscale Doping For Transparent Conducting Oxides
- Self-Assembled Organic Monolayers on Graphene
- Generation of Multifunctional Nanocomposites

**Commercial Validation**

- Integrated On-Chip Thermocouple Array
- TEM Nanostructure Characterization Device
- Chalcogenides for X-Ray and γ-Ray Semiconductor Detection
- Low-Cost Semiconductor Single Walled Nanotubes
- Magnetic Diode Based Programmable Logic
- Organic Semiconductors
- Transverse Thermoelectrics
- Spin Diode Logic Family
- Contactless Probe for Detecting Buried Semiconductors
- Planar Photonic Jet Lens
- Gate Tunable p-n Heterojunction Diode
- Low Voltage Organic Electro-optics
- Atomic Force Microscopy with Electroluminescence
- Non-Linear Optic Glassy Fibers and Thin Films
- Organic Transparent electrodes
- Scanning Near Field Thermoelastic Acoustic Holography
- Broad-Frequency Electric Field Sensor
- Magnetic Shape-Memory Foams
- Metal Oxide Thin Films
- Siloxe-Containing Polymers
- Acne-Based Organic Semiconductors
- Hybrid Thin Film Transistors

**Market**

- High Conductivity Graphene Inks
- Barium Titanate Waveguides

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