Faculty Participants (contact for further information)

UOIT Faculty of Science
Peter Berg (Assistant Professor, Physics)
Dario Bonetta (Assistant Professor, Biology)
Anatoli Chkrebtii (Associate Professor, Physics)
J.-P. Desaulniers (Assistant Professor, Chemistry)
Brad Easton (Assistant Professor, Chemistry)
Franco Gaspari (Assistant Professor, Physics)
Matthew H. Kaye (Assistant Professor, Energy Systems and Nuclear Science)
Fedor Naumkin (Assistant Professor, Chemistry)
William Smith (Dean and Professor, Physics and Chemistry)
Liliana Trevani (Assistant Professor, Chemistry)
Brian Ikeda (Associate Professor, Faculty of Energy Systems and Nuclear Science)
Ghaus Rizvi (Assistant Professor, Faculty of Engineering and Applied Science)

Trent University Physics Department:
Bill Atkinson (Assistant Professor, Physics)
Ralph Shiell (Assistant Professor, Physics)
Al Slavin (Department Chair, Professor, Physics)
Rachel Wortis (Assistant Professor, Physics)

Trent University Department of Chemistry
J.M. Parnis (Professor, Chemistry)
I. M. Svischev (Professor, Chemistry)

A. Vreugdenhil (Associate Professor, Physics)

Materials Science MSc Program

Jointly Offered by UOIT and Trent University

Apply directly to one or the other institution

Contact Information

University of Ontario Institute of Technology
Graduate Program Secretary
Tel: (905) 721-3050
Fax: (905) 721-3304
Email: gradsecretary@science.uoit.ca
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Trent University
Graduate Studies Office
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Email: graduate@trentu.ca
www.trentu.ca/materialscience

MSc in Materials Science

Theory, Practice, Real Life

The field of Materials Science lies at the intersection of physics, chemistry, and biology. It includes many sub-fields, such as energy-related materials, cluster science, nanotechnology, electronic materials, surface science, biomaterials, and materials characterization.
Core Courses (required)

- MTSC 6000G and MTSC 6100G (non-credit): Graduate Seminar in Science Communication I, II
- MTSC 6010G: Physics and Chemistry of Materials
- MTSC 6020G: Advanced Topics in Materials Science

Elective Courses

Students will also select two specialization courses from a list including:

- MTSC 6110G: Thermodynamics and Statistical Mechanics of Materials
- MTSC 6120G: Theory of the Solid State
- MTSC 6130G: Surface Science and Catalysis
- MTSC 6140G: Experimental Techniques in Materials Characterization
- MTSC 6150G: Synthetic Techniques in Materials Science
- MTSC 6240G: Biomaterials
- MCSC 6170G: Computational Chemistry
- MCSC 6180G: Computational Physics
- MCSC 6260G: Advanced Topics in Computational Science

Faculty Research

- **Chemistry**
  - Hybrid organic-inorganic materials
  - Oxidation technologies and applications
  - Doped metal clusters and new materials
  - Nano-crystalline materials for biomedical devices and photovoltaics
  - Molecular-based design of fluids and mixtures
  - Nanometer-scale polyatomic systems
  - Electrochemical materials and molecular interfaces

- **Biology**
  - Biologically-based materials
  - Genetic engineering of biomaterials

- **Physics**
  - Energy-related materials and solar cells
  - Materials growth and characterization
  - High-temperature superconductors
  - Solid state surfaces and applications
  - Proton exchange membrane (PEM) fuel cell materials and processes
  - Carbon Nanotubes: Synthesis, Characterization and Applications
  - Molecular-level simulations of materials

- **Engineering**
  - Polymers and Composites: processing and characterization
  - Corrosion mechanisms for metals in elevated temperature aqueous and molten salt environments.
  - High temperature materials chemistry

Research and Program Support

Supervision by a faculty member from UOIT or from Trent University and an Advisory Committee from both universities.

UOIT and Trent University cover all the research expenses.

State-of-the-art laboratories and computational facilities, including membership in the SHARCNET (Shared Hierarchical Academic Research Computer Network) high-performance computing consortium.

Financial Support

Students will receive a minimum of $16,000/year, from a combination of teaching assistantships, research assistantships, scholarships and other sources.