



Materials Engineering

Model of the atomic structure of strontium titanate, a ceramic material that is used in

"Each investigation is different from the rest and can take me from the vast wilderness (to look at ruptured or leaking pipelines) or into the smallest nooks and crannies of a vessel (such as a collapsed boiler in an NHL arena). I enjoy the challenge of solving these problems and learn something new every day."

- Eric Dowdle (B.A.Sc. 1995, M.A.Sc. 1997), Failure Analyst, Acuren Group





Everything materials.

The scope of materials engineering encompasses everything to do with materials and their use.

- The recovery of materials from minerals
- Designing new materials
- Making engineered materials

Materials engineers design, produce and evaluate materials. To do this, they need to understand the properties of materials – chemical, physical and mechanical – and the scientific principles that underlie the relationship between a material's structure or composition and how it performs.

Today's materials engineers are developing clean strategies for processing materials and are leading the way in the application of new lighter, stronger materials in airplanes and cars.

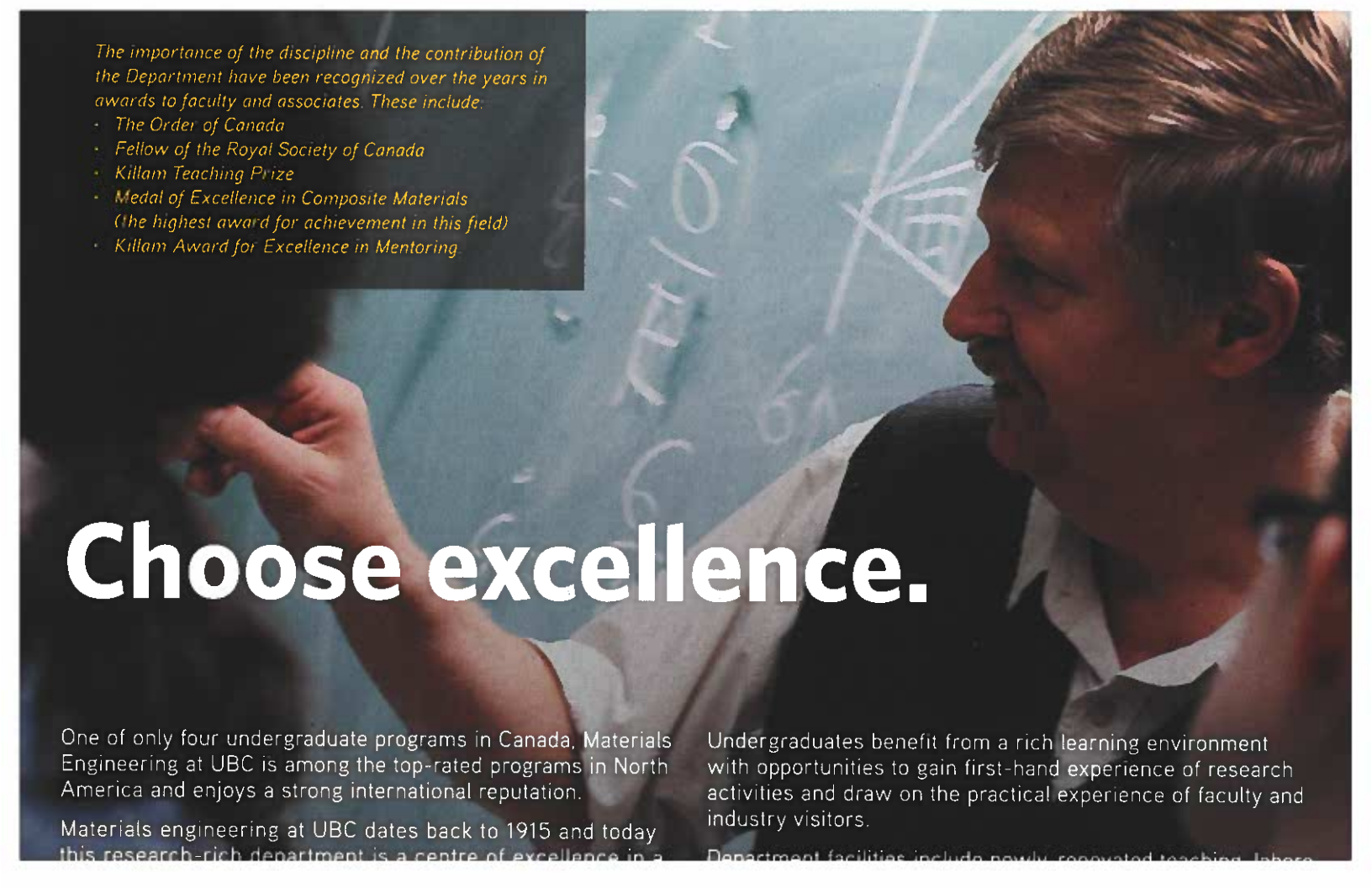
Materials engineers are also an integral part of the bio-engineering fields, creating better ways of combining synthetic materials with natural ones.

This is a great time to study materials.

Both exciting new opportunities and well-established industries rely on materials and the skills of materials engineers.

Materials have been among the greatest achievements of every age, driving technological advances, from bronze and copper to steel and plastics. They continue to stimulate and enable

X-ray of a prosthetic hip replacement.

A man with a mustache, wearing a white shirt and a dark vest, is shown in profile, pointing his right hand towards a chalkboard. The chalkboard is filled with white chalk drawings of geometric shapes, including circles and lines, suggesting a technical or mathematical lecture. The lighting is soft, highlighting the man's face and the texture of the chalkboard.

The importance of the discipline and the contribution of the Department have been recognized over the years in awards to faculty and associates. These include:

- The Order of Canada*
- Fellow of the Royal Society of Canada*
- Killam Teaching Prize*
- Medal of Excellence in Composite Materials (the highest award for achievement in this field)*
- Killam Award for Excellence in Mentoring*


Choose excellence.

One of only four undergraduate programs in Canada, Materials Engineering at UBC is among the top-rated programs in North America and enjoys a strong international reputation.

Materials engineering at UBC dates back to 1915 and today this research-rich department is a centre of excellence in a

Undergraduates benefit from a rich learning environment with opportunities to gain first-hand experience of research activities and draw on the practical experience of faculty and industry visitors.

Department facilities include newly renovated teaching laboratories



The curriculum begins with the core material groups: metals, ceramics, polymers and composites.

By the final year, students tackle complex process design and materials selection problems. Recent fourth year design projects have included

- a new metallurgical processing plant*
- a shape memory alloy engine*
- a major offshore natural gas pipeline*
- materials for drug delivery systems*
- composite materials using nanofibres.*

The Materials Engineering BAsc is a fully accredited, interdisciplinary program. Students can register as an Engineer in Training upon graduation and, after four years, as a Professional Engineer in Materials Engineering or a discipline consistent with their further specialization.

Expand your options.

Gain specialized knowledge, general engineering skills and a wide variety of career choices.

Students entering the program build on the foundation of math, chemistry and physics acquired during their first year engineering studies. The next three years provide a structured training

In the final year, students can specialize further, choosing from:

- Manufacturing and performance
- Minerals and metals extraction
- Biomaterials engineering.



This laser scanner can be used to examine materials in use, such as this Kevlar® fibre reinforced aircraft component.

It's your career. Make it interesting.

The job market for MTRL graduates is vast, locally and internationally, with opportunities in established industries and in cutting-edge, rapidly expanding fields.

The valuable skills of our graduates make them in high demand regardless of economic climate. Starting salaries are very

Some graduates do further studies and research in the materials field while others go on to pursue degrees in law, medicine or business. Whatever your choice, as a materials engineer you will continue to learn throughout your career with challenging, interesting work, post-graduate training or further study.



"In June of 2007, I began working at Intel Corporation as a Senior Packaging Engineer. I am in the metallurgy core competency group, leading research and development for next generation material solutions for Intel microprocessors."

- Rajen Sidhu (BASc 2003), Senior Packaging Engineer, Intel Corporation

Where in the World

- Undergraduate field trips
- MTRL alumni
- Faculty research and industry collaborations