

# ADVANCED MANUFACTURING IN NORTHERN ONTARIO

*Rising to Today's Challenges and Tomorrow's Opportunities.*

Northern Ontario companies and communities are responding to the needs of today's marketplace through investment in leading-edge technologies and processes to increase productivity and competitiveness. Coupled with this are a number of research and educational initiatives to grow and retain highly skilled personnel in a range of sectors, all with the purpose of leveraging new investments and strengthening our manufacturing sector to better compete on a global scale.



Our companies and institutions are continually involved in rigorously reviewing their technical, operational, financial and human resource processes and protocols to ensure that they, at all times, remain focused on being innovative, competitive and of a scope which promotes and supports the introduction of new products and processes to the market.

The range of activities and processes incorporated within this practicum include:

- Industrial Research & Development focused on the commercialization of new products, methods and processes.
- Design, engineering and development of new materials, prototypes and systems.
- Innovative / advanced manufacturing processes, techniques and technologies for the creation of new products, services and their applications.
- Design and use of robotics, innovative software, automation and advanced control systems.
- Creation and adaptation of waste and energy conservation technologies resulting in reduced environmental impact and emissions.
- A focus on *Global Excellence* in the commercialization of technologies and products which provide global economic opportunities for manufacturers and the communities they represent.



Northern Ontario companies are now using the expertise that they have developed in the manufacture, supply and service of equipment, systems and parts to the global resource and transportation industries to diversify into other sectors such as aerospace, ICT and renewable energy. Many of these utilize some of the most advanced quality control, precision product inspection and measurement systems such as Zeiss Accura 10 CMM and are certified to an ISO 9001 quality management system and Canadian Welders Bureau (CWB) certification to W47.1, Division 2.1.



Some of our companies are also involved in research, development and prototyping activities focusing on the implementation of 3d printing, robotics and automation solutions. Through the implementation of the fundamental principles of robotics and automation including teleoperation, specialty communications, software and robotic machines, expert electronics, tele-autonomy and mobile mechatronics, they are able to both formulate existing technologies and develops new ones. One such example is the *Teleoperation Control Station* which includes a suite of sensors which provide critical information for an operator to remotely see, hear and feel what the machine orientation and conditions are. This technology can be applied to numerous environments including underground, open pit, underwater, in space and on surface in a variety of applications such as mining, construction, exploration and security.



In today's Ontario's North, the focus is on excellence and the creation of global solutions through research and development, innovation of products, processes and systems, and a commitment to technology. We believe that success is achieved through an understanding of global opportunities combined with a customer-centric attitude. With vision and passion, our companies and institutions are "re-purposing", not only thinking about how to make existing products better, but moreover looking for opportunities to innovate and think strategically about how to address the needs of their customers with new and innovative products, processes and solutions.



The Colleges and Universities in Northern Ontario will continue to support innovation in advanced manufacturing.

In all of this, Northern Ontario companies continue to be guided by three key principles to success ***good people, good planning, and good management.***