Innovating Together: How Strategic Academic-Industry Collaboration can Drive Advances in Materials Discovery and Create Economic and Socio-economic Benefits

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Bringing together teams with complementary expertise is critical to move forward multi- disciplinary projects and particularly critical when resources are limited. While often considered separate entities academic and industrial collaborations can be extremely advantageous to simultaneously advance fundamental research and bring new products and services to market. This talk will highlight one such strategic partnership between PROTO Mfg. Ltd. and the University of Windsor which has led to the development of a new High-Throughput Laboratory Powder Diffractometer (LPD-HT) for the rapid screening and characterization of new crystalline materials, such as pharmaceuticals and stimuli- responsive materials, such as metal-organic frameworks. Academic partners allow for critical end-user information which is essential in the product development feedback loop. The successful development and commercialization of scientific instruments highlights several of the potential benefits of academic-industry collaborations in this space. For example, new instrumentation locally enhances the research capabilities of universities, creates jobs related to the manufacturing and technical sales of systems, while also providing an excellent training environment for students who get to use the newly developed equipment, and get exposure to 'behind-the-scenes' aspects of the development process.

Globally instrument development gives academic and industrial researchers new tools to speed up their research and reduce the time required to make ground-breaking discoveries. The development of the LPD-HT platform could not have been possible without financial support from both the government of Canada (Natural Sciences and Engineering Research Council of Canada), industry (PROTO Mfg. Ltd.), and academia (University of Windsor) highlighting the need for collaborative investment from multiple stakeholders. Such partnerships have the potential to drive innovation, boost productivity and economic growth, and provide opportunities for the next generation of scientists and researchers to develop their skills and expertise.

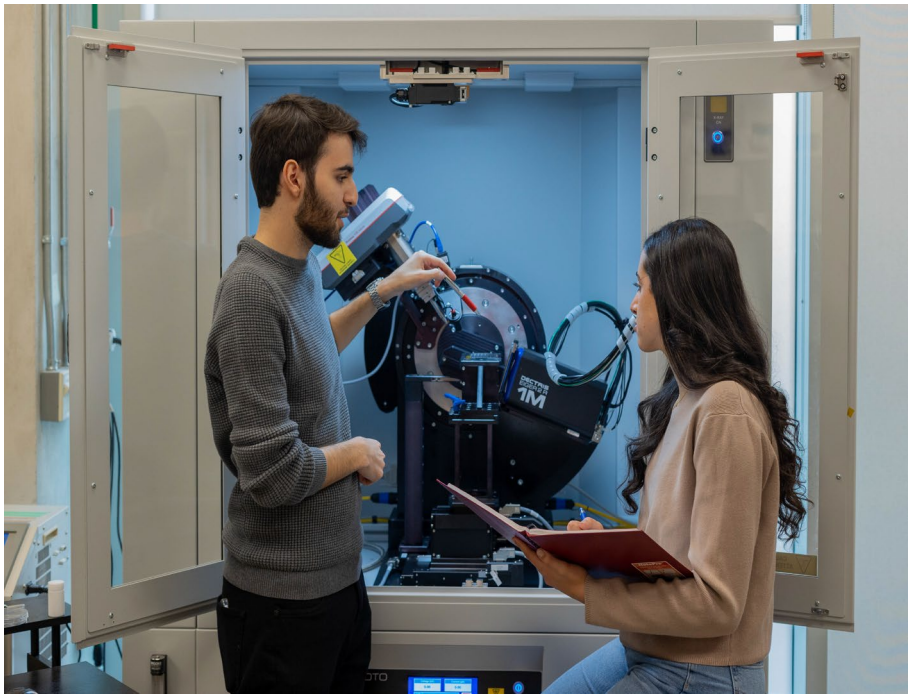

Figure 1