



Thank-you Francois.

At the end of June, after 14 years, Prof. Francois Lagugne-Labarhet stepped down as Director of the Western Nanofabrication Facility.

When the Western Nanofab was created in 2002, we received a generous donation of equipment from Nortel Networks. These tools were older but had been exceptionally well maintained at Nortel. By the time Francois became Director in 2011, these donated tools were nearing 30 years old and in need of replacement. During his tenure, Francois led the modernization of the Nanofab by securing funding to replace or upgrade the older instrumentation in the Facility. Leading six successful NSERC RTI applications for a total of \$643,000: Stylus Profilometer \$53k (2013), Reactive Ion Etcher \$150k (2015), E-beam deposition System \$150k (2017), E-beam deposition upgrade \$57k (2020), FIB/SEM BSD detector \$83k (2023) and most recently \$150k towards a new Sputter deposition tool. Additionally, as a co-applicant in the successful 2017 CFI, Francois secured funding for the Nanoimprinter, the e-beam lithography replacement, the upgrade to the Reactive Ion Etcher and the TEM lift-out tool.

We thank Francois for his exemplary service in leading the Nanofab over the past 14 years.

Students and Post-Docs are invited to submit articles for future WAMF New editions: receive a \$250 Gift Card



It is my great pleasure and joyful obligation to introduce you to Western Advanced Materials Foundry (WAMF) <https://wamf.uwo.ca/> . WAMF was created in July 2025 combining the planned HRTEM facility <https://hrtem.uwo.ca/>, the Tandetron accelerator <https://tandetron.uwo.ca/>, and the Nanofabrication Facility <https://nanofab.uwo.ca/> into a single core research facility within the Faculty of Science. WAMF provides expertise and cutting-edge instrumentation for the modification and characterization of hard and soft materials, including biological samples.

Located in specially engineered sites, the WAMF provides a stable, vibration and interference-free setting equipped with more than thirty state-of-the-art instruments. These integrated capabilities – including electron microscopy, scattering and ion beam methods, and comprehensive surface and bulk preparation and modifications methods – enable researchers to fabricate, visualize, measure and manipulate materials with excellent resolution, sensitivity and insight.

WAMF has great history of excellent experimental research. The Tandetron facility was established by the research group headed by Profs. Ian Mitchell and Peter Norton, including Willy Lennard, Keith Griffiths, Leighton Coatsworth and Dan O'Dacre who moved from Chalk River around 1985. The Tandetron Accelerator was originally installed in the Physics and Astronomy building in 1988 and moved to then new Western Science Centre in the fall of 1991. The Western Nanofabrication Facility officially opened its doors in 2004 (funded by CFI in 2001), and is a critical research infrastructure, supporting a variety of applications from photonic waveguides, microfluidics, optical sensors as well as many other applications. We were thrilled to hear about success of CFI grant led by Prof. Yolanda Hedberg to fund HR-TEM. New microscope will be installed in Biotron building upon completion of the renovations in the summer 2026.

It has been several months since I became the WAMF Scientific Director, and I appreciate the great welcome from Western research community. Supported by dedicated and experienced scientific staff, Dr. Todd Simpson, Jack Hendriks, Dr. German Popov, robust training programs and advanced access and data system, WAMF will ensure safe, equitable and effective use of its resources.

I would like to invite students, researchers and collaborator to join us exploring fascinating world of materials and unlocking new possibilities though fabrication, imaging, analysis and scientific curiosity.

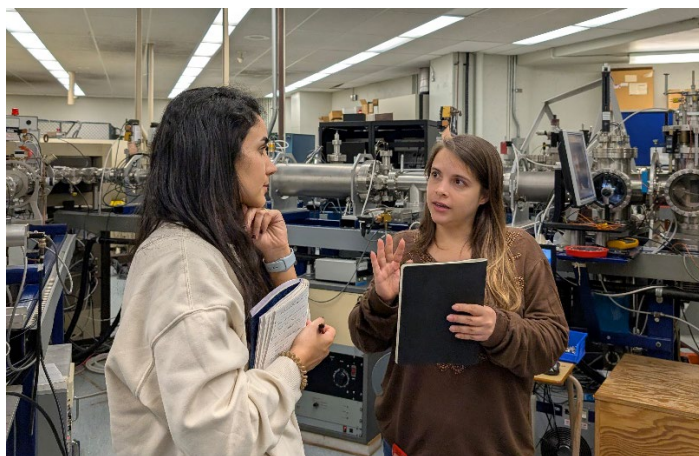
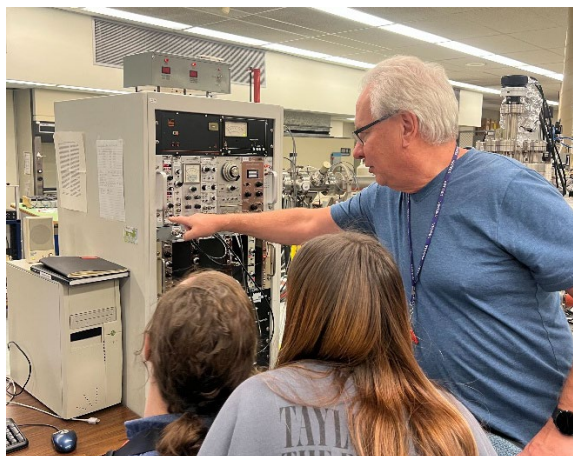
Prof. Lyudmila Goncharova  
WAMF Scientific Director

## Elastic Recoil Detections Analysis (ERDA) Workshop

**November 7, 2025:** WAMF hosted a hands-on workshop on Elastic Recoil Detection Analysis (ERDA) dedicated to hydrogen detection in materials and thin films. Detection of hydrogen is challenging due to a lack of techniques sufficiently sensitive to detect such a small molecule with low electron density. The goal of ERDA is often to measure the absolute hydrogen concentration in an unknown sample, as well as create a hydrogen depth profile.

ERDA was invented in Canada by two research groups based in the Montreal area. The work was submitted for publication during the summer of 1975 and published on January 1<sup>st</sup>, 1976. This year we celebrate 50 years of the invention of ERDA!

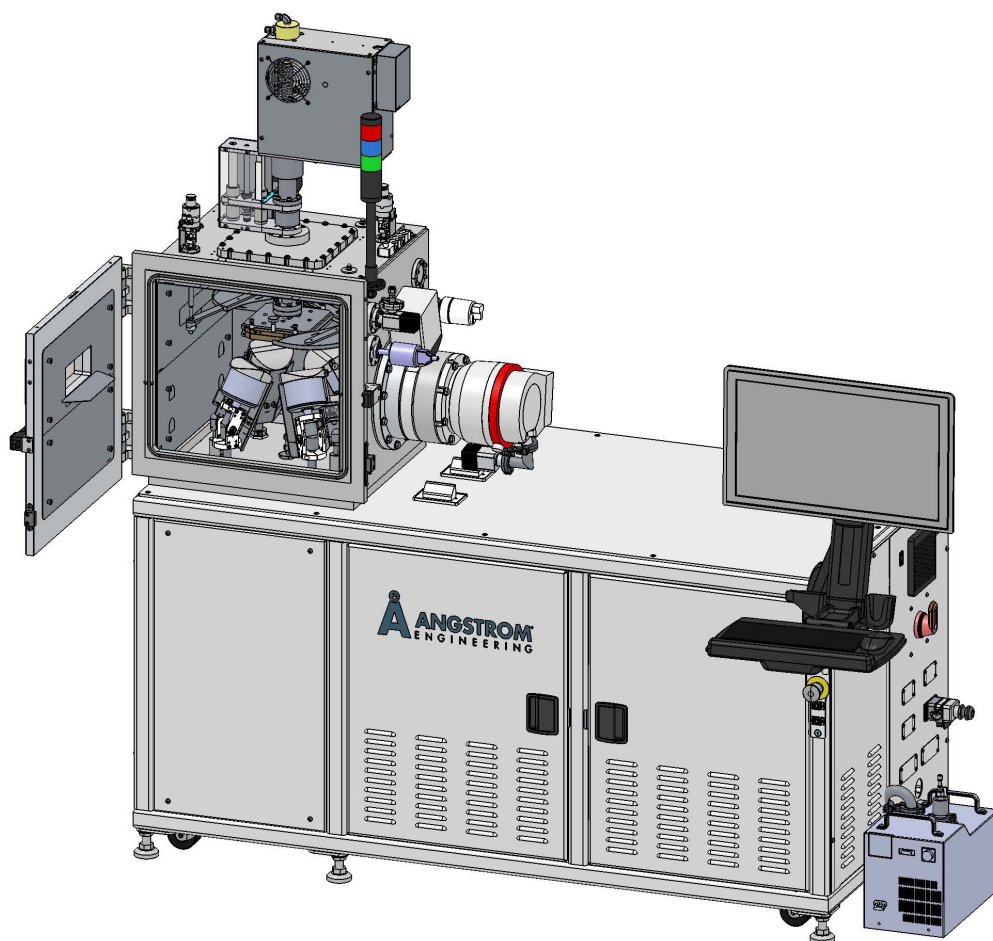
This workshop was delivered by Dr. Lyudmila Goncharova, with the assistance of Casee Griffith and Jack Hendriks in the Tandetron Accelerator Lab. This event had participants from Western Science and Engineering and McMaster Engineering Physics, and summarized fundamentals of hydrogen detection methods, practical aspects of handling samples, vacuum instrumentation used and advantages and disadvantages of ERDA compared to SIMS. Using ERDA and SIMS in tandem allows for a comprehensive analysis of hydrogen and other elements quantitatively and with good depth resolution. Participants had an opportunity to test their own samples and find hydrogen concentration and depth profiles throughout the day.





## New Sputter Deposition System

Following a successful 2025 NSERC RTI grant application led by Prof. Francois Lagugne-Labarthe, a Request for Proposal for a sputter-deposition tool was awarded to Angstrom Engineering Inc. An order has been placed with Angstrom to supply a PC/PLC controlled sputter deposition system, expected to be delivered summer 2026. Funding to upgrade the tool from 2 sources and power supplies to 4 of each was secured by Profs. Lyudmila Goncharova and Amir Mirzaei through the Physics and Astronomy Hunt Fund. The remainder of the cost will be covered from the Nanofabrication Facility operating account. The installed system will have four 3-inch sputter sources, one with a high-field strength magnet capable of depositing magnetic material. One RF power supply and three pulsed-DC power supplies will be provided. The system will be capable of co-sputtering any combination of the four sources and supplies.



## WESTERN ADVANCED MATERIALS FOUNDRY

WAMF  
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Nanofabrication Facility  
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Tandetron Accelerator  
tandetron.uwo.ca

High Resolution TEM  
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