Postdoctoral Associate Position Opening

Functional Materials for Nanophotonic Sensing at Western University

The **Data-Driven Advanced Manufacturing (D2M) Group** and the **Nanophotonic Energy Materials (NEM) Group** at Western University are seeking a Postdoctoral Associate to develop materials and sensing technologies for wearable health-monitoring devices. The position is based in the Department of Mechanical and Materials Engineering.

The Postdoctoral Associate will investigate how additive manufacturing can control material structure across length scales and how those structures affect device performance. The project combines materials science, mechanical design, and nano-optics to develop sustainable functional materials and integrate them with chemical sensing and optical readout. Research areas include:

- **Wearable sensing and microfluidics**, including tactile sensing, strain sensing, and microfluidic sample handling
- **Biochemical sensing**, including biomarker detection with molecularly imprinted polymers
- **Optical readout**, including structural colour and soft photonics

We welcome applicants with a PhD in mechanical engineering, materials science and engineering, chemical engineering, engineering science, biochemistry, medical and health sciences, chemistry, physics, or a related field. Candidates should bring strong theoretical and experimental skills relevant to materials or device development. Experience in chemical sensing, microfluidics, optics, photonics, or nanofabrication are assets.

About Us

Prof. HaoTian Harvey Shi is an Assistant Professor and the Director of the Data-to-Manufacturing (D2M) lab in the Department of Mechanical & Materials Engineering at Western University, Ontario, Canada. His research focuses on developing the next generation of functional materials using additive hierarchical manufacturing across multiple length scales. Dr. Shi received his PhD in Mechanical Engineering from the University of Toronto, Canada, as part of the Toronto Institute for Advanced Manufacturing, where he worked on flexible, wearable electrodes for electrochemical energy storage devices. He was a postdoctoral research associate at the University of Cambridge, U.K., with a focus on biosensors and biocompatible functional structures across multiple length scales. He has contributed to several high-impact journals, including *Nature Materials, Advanced Materials, Advanced Energy Materials, Advanced Functional Materials, Chemical Engineering Journal, ACS Applied Materials & Interfaces,* among others. Dr. Shi serves on the Early Career Editorial Board for *ACS Applied Materials & Interfaces*, and he is the Associate Editor of the journal *Transactions of the Canadian Society for Mechanical Engineering (CSME)*. Dr. Shi was awarded the Western Engineering Junior Faculty Award for Excellence in Research in 2025-2026.

Prof. Eric Johlin is an Assistant Professor in the Department of Mechanical and Materials Engineering at Western University, leading the Nanophotonic Energy Materials (NEM) Laboratory. His research integrates nanophotonics, computational inverse design, and nanofabrication, with particular expertise in two-photon lithography, for applications in optoelectronics, photovoltaics, and imaging. He has authored over 25 peer-reviewed journal articles, including *in Nature Communications, PRL, Nano Letters,* and *ACS Photonics*, and with

over 1,500 citations. Prof. Johlin's group has received approximately $1M in personal research funding, and with patents and filings in nanophotonic color splitters and perovskite-silicon tandem photovoltaics. Since his start at Western University, Prof. Johlin has supervised over 20 HQPs across undergraduate, graduate, and postdoctoral levels, with alumni at institutions including Xanadu Quantum Technologies and multiple NRC labs.

How to Apply

If interested, please send an application package (as a Single PDF) to Dr. Shi (Harvey.shi@uwo.ca) and Dr. Johlin (ejohlin@uwo.ca) containing the following information. Applications will be considered for Spring 2027 start dates. Further information about MME can be found at https://www.eng.uwo.ca/mechanical/. Please apply before **Nov. 30th, 2026.**

- Cover Letter
- Academic CV
- A brief description of your expertise and research interests
- Contact information for at least 3 academic references
- Examples of relevant publications, research projects, or technical experience, if available.

Salary Ranges

- The salary for this position is $51,375 CAD annually + Benefits
- The position is fully funded for research and is available from Spring 2027 to End of 2028

About Western University

Situated along the banks of the Thames River in picturesque London, Ontario, Canada, a city with a population of approximately 500,000, Western University is a prominent academic institution routinely ranked as a top research-intensive university in Canada and is committed to excelling as a leading research institution internationally (2027 QS #142 globally and #6 in Canada). Western University has a full-time enrollment of about 32,000 students in a range of academic and professional programs. Western University is committed to creating an inclusive and supportive research environment and welcomes applications from qualified candidates from diverse backgrounds.