



CMC celebrates 500th prototype enabled by MNT financial assistance

U of T microfluidics researcher creates novel material for use in flexible electronics

June 13, 2018

The Micro-Nanotechnology (MNT) Financial Assistance Program, administered by CMC Microsystems, is pleased to announce the 500th technology prototype enabled through its competitive funding process.

The milestone prototype was created by Prof. Xinyu Liu and postdoctoral fellow Dr. Longyan Chen at McGill University's Nanotools Microfab facility. Now Associate Professor in the Department of Mechanical and Industrial Engineering at University of Toronto, Prof. Liu is developing a new material for use in a flexible electronic device with applications in a broad range of electronic components. Three graduate students assisted with the work.

"CMC's MNT support provided tools and cleanroom fees to develop a high-yield fabrication process for a new nanomaterial," says Prof. Liu. "This enabled us to explore microfabrication work in a completely new area that wouldn't otherwise have been possible. This has attracted industry attention and enabled my postdoctoral fellow and four graduate students to gain hands-on experience in this emerging field."

A long-time user of the MNT assistance program, Prof. Liu is highly regarded for his work in microfluidic biosensing and biomanipulation. CMC's MNT support also enabled his earlier work at McGill University to develop an automated, high-throughput microfluidic device for DNA microinjection into nematodes. This innovation has generated several publications (including two "best conference paper" nominations) and has sparked international interest in the U.S., Europe, and China. Today, the efficiency and speed of Prof. Liu's device is showing promise for advancing the exciting new frontier of gene editing.

"This was work I was very proud of, and I really appreciate the support that this program has given me over the past several years," Prof. Liu says. "CMC's MNT program is a great help to researchers."

"We congratulate Prof. Liu on the success of his latest prototype, and we're proud to have assisted him in reaching this goal," says Dr. Andrew Fung, Client Technology Advisor at CMC Microsystems. "Canada's university-based MNT labs are an outstanding resource for technology developers, and we'd like to connect even more innovators in Canada's National Design Network with the advanced R&D capabilities that these facilities offer."

The MNT Financial Assistance Program lowers financial barriers for researchers to access some 40 university-based MNT labs across Canada. These labs offer specialized equipment and expertise for developing the advanced materials and processes needed to create innovative technologies and devices. The program subsidizes a portion of researchers' MNT fabrication costs as well as costs

associated with travel to specialized labs outside their region. Projects already supported by an NSERC Engage grant can get expedited review.

To date the program has awarded more than \$800k to nearly 120 professors using MNT labs across Canada to develop prototypes with applications in a broad range of sectors including telecommunications, energy, health, environment, and consumer products.

To celebrate this milestone, CMC is launching an “MNT 500” photo contest this summer. Professors and students will be invited to submit images from research enabled at these labs through MNT Financial Assistance. Winning photos will be featured in a deck of playing cards showcasing Canada’s MNT network and its innovations. Visit www.cmc.ca/MNTPhotoContest for contest details.

Contact:

Andrew Fung
Client Technology Advisor, Microsystems and Nanotechnology
CMC Microsystems
P: 613. 530. 4785
M: 613. 483. 1287
E: fung@cmc.ca

About CMC Microsystems and Canada’s National Design Network (CNDN):

CMC Microsystems works with researchers and industry across Canada’s National Design Network, providing access to world-class tools, technologies, expertise, and industrial capabilities for designing, prototyping and manufacturing innovations in microsystems and nanotechnologies. CMC reduces the barriers to technology adoption by creating and sharing platform technologies. www.cmc.ca

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