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UW's new microscope 'better than the one at Harvard'

By **Brian Caldwell, Record staff**

WATERLOO — Tong Leung can't wait to get his hands on his new microscope.

It's one of only 12 in the world, costs more than \$2 million and can clearly show things at the nanometre scale — about 100,000 times tinier than the width of a human hair.

Plus it comes with bragging rights.

"It'll be better than the one at Harvard," Leung told dignitaries crammed into a University of Waterloo chemistry lab Friday.

Funding for the helium ion microscope is part of a \$21-million commitment from the provincial government for research projects at UW and Wilfrid Laurier University.

A chemistry and physics professor at UW, Leung leads a team of scientists at five Ontario universities examining the basic structures of "smart" materials — those that respond readily to external stimuli.

The cutting-edge microscope will allow him to see and figure out how molecules in those materials — particularly organic materials — interact with each other.

Armed with that information, it should then be possible to modify and improve their basic structures, or create new ones entirely.

"Once you can understand, you can control," Leung said.

Possible applications for his research include the development of slow-release drugs and tissue engineering for medical procedures such as hip replacements.

"We try to find the fundamentals," Leung said. "Then the engineers can help us turn them into devices and hopefully market them."

That connection between pure research and practical results — including future job creation — was stressed at the funding announcement by Kitchener-Conestoga MPP Leeanna Pendergast.

"New discoveries will continue to be made and we want those people, those ideas and those jobs right here in our community," she said.

In all, the money from the province will go to 21 projects involving more than 300 researchers at the two local universities.

Other research areas include urban water quality, aging and memory loss, secure communication systems, more durable roads and bridges, lightweight automotive materials and advanced manufacturing.

David Johnston, president of UW, credited the province with a "courageous long-term decision" to continue investing in



Peter Lee, Record staff

Tong Leung, professor of chemistry, talks about research as MPP Leeanna Pendergast and George Dixon look on. The event Friday was a government announcement about research funding.

scientific research despite the tough economic times.

He also noted many of the projects involve collaboration between the two local universities, as well as scientists around the world, to pool talents and improve results.

"That's the theme of research in the 21st century," Johnston said.

The local funding is part of a \$268-million initiative by the Ontario government to support 214 research projects while creating construction jobs in the process.

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