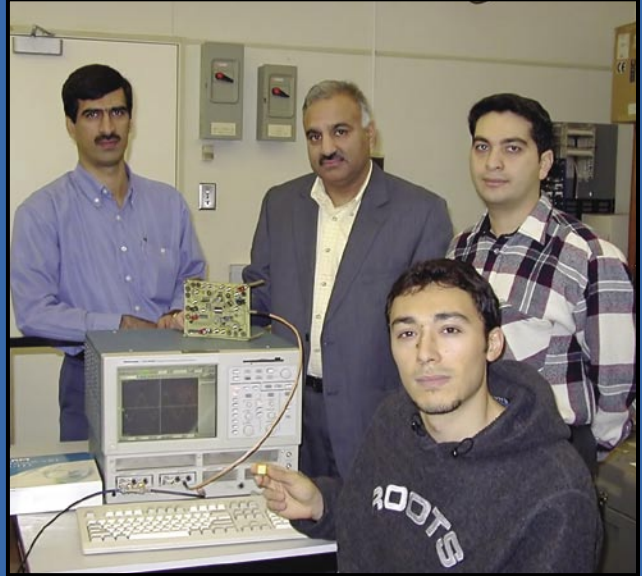


Vital Advances in Preventing Disease

Medical instruments company turns to Waterloo engineers to improve blood pressure monitoring

"In the not too distant future, I see this same type of implantable chip being used in people. This technology has tremendous potential to improve the monitoring of human vital signals and help prevent the onset of diseases."

Dr. Manoj Sachdev
Professor
Electrical and Computer Engineering
University of Waterloo



Researchers from the University of Waterloo are working with Telemetered Scientific Products to design an implantable chip for measuring blood pressure. Left to right: Shahab Ardalan, Dr. Manoj Sachdev, Igor Lovich, and Mohammad Maymandi-Nejad.

Dr. Manoj Sachdev is marrying wireless technology with microsystems to develop a new technology that monitors vital signs in laboratory animals. Telemetered Scientific Products, a small medical instruments company in London, Ontario, approached the University of Waterloo researcher to develop a less invasive way to monitor the blood pressure of mice being used in biomedical research.

Current catheter-based systems require sedation of the mouse, which can interfere with blood pressure and other vital signs. With Telemetered Scientific Products as his industrial partner, Dr. Sachdev has embarked on a two-year project to build a microchip that is small and light enough to be implanted comfortably in the abdominal cavity of a 25-30 gram mouse. The system would then monitor the animal's blood pressure and transmit the results to a wireless receiver located outside the body.

One of the key benefits of Dr. Sachdev's biomedical innovation is the ability to maximize energy use. He says the microchip's off-the-shelf battery should last for two months if power usage is kept low. He credits CMC with providing access to the advanced tools and technologies that are helping him to achieve this goal.

"If Canada wants to become a leader in these areas, researchers must have access to the same technologies used by industry."

Dr. Sachdev and his students plan to submit a design for a complete chip to CMC in early 2004, a precursor to building a prototype device and a commercial product. It is a vital step forward in the war on disease. *cmc*