



Nakul Verma (left), Matthew Ward (centre left), Dr. Ash Parameswaran (centre), and Michael Sjoerdsma (right) at Simon Fraser University are using microsystems tools and technologies provided by CMC to design and build miniature sensors and actuators that will help create quieter cars.

Noise Busters

CMC helps scientists design quieter cars

Researchers at Simon Fraser University are developing intelligent systems and sensors that make vehicles quieter. The technology could become a hot selling feature in future automobiles.

More powerful engines and lighter construction materials are having an unintended side effect on vehicles—too much noise. The automobile industry is counting on university researchers to find solutions that reduce noise levels without driving up manufacturing costs. Those solutions could be available within five years as a result of a national research project, where Dr. Ash Parameswaran and his research team at Simon Fraser University (SFU) are using tools and technologies provided by CMC to design and build miniature sensors and actuators that will help to create a quieter ride.

The SFU research team brings unique microsystems expertise to a collaborative automotive project led by the Université de Sherbrooke with funding from industry partners and AUTO21, a federal Network of Centres of Excellence based at the University of Windsor. SFU's goal

is to reduce structure-borne noise—noise that is transmitted from the road and tires, to the suspension system and into the cabin of the vehicle.

“We have to design a smart suspension system, one that uses electronics and intelligence to somehow avoid having the noise transmitted,” explains Dr. Ash Parameswaran, Director of SFU's Institute of Micromachine and Microfabrication Research. To design this new MEMS (microelectromechanical system) device, Dr. Parameswaran is relying on off-the-shelf products and computing infrastructure provided by CMC.

The researcher says, “CMC will play a significant role in the manufacture and testing of the design, from making integrated circuit chips, to assembling small-scale circuits and providing the technology required to make the device. CMC also has established relationships with potential investors who may be interested in this technology. If we weren't conducting this type of research in Canada with the help of CMC and AUTO21, it would be much more difficult to commercialize this innovation.”

The microsystems technology being developed by this SFU research team will not be limited to automobiles. Dr. Parameswaran says it can also be used to reduce noise in trains, planes and ships, offering improved modes of travel for all Canadians. *cmc*

SFU's Research Team

Dr. Ash Parameswaran
Michael Sjoerdsma
Nakul Verma
Matthew Ward

Industry Partners

Sensor Technology Ltd.
Siemens Canada Ltd.
Soft dB Inc.
Xilinx Inc.
Vibro-Acoustic Sciences Inc.