

# Chrysler sets up shop in \$24m MARC research project

Collaborations aimed at bolstering domestic industry

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The Hamilton Spectator

Three new automotive research projects will help McMaster University fight for jobs in Canada, said the man in charge of \$24.2-million in new funding.

Ali Emadi was effusive in his praise for government and industry money announced at the McMaster Automotive Resource Centre Friday.

"We are facing fierce global competition to develop the next generation of cars and automotive technology. It's all about jobs and developing a workforce," said Emadi, who holds the Canada Excellence Research Chair in hybrid powertrain and was lured to McMaster from the United States to lead MARC.

Research at the university will be aimed at helping Canadian manufacturing commercialize advanced technology across the world, he said.

"My colleagues and I are committed to fight for Canada."

There are three components to the funding.

The biggest is \$18.2 million to make MARC the centre of Chrysler's development of high-performance electric and hybrid powertrains.

Over five years, 20 engineers from Chrysler's global electrified powertrain group and seven McMaster research engineers will team up with 16 faculty and 80 graduate and undergraduate engineering students to produce prototypes of components, platforms and tools.

Emadi says the project was reviewed by 10 international experts



Greg Rickford, minister of state for science and technology, outlines the details of the funding announcement during a special event at the McMaster Automotive Resource Centre (MARC).

and seven of them said such a collaboration would not happen in the United States or Europe.

The deal includes \$9.25 million from Chrysler Group and \$8.93 million from the Natural Sciences and Engineering Research Council of Canada. The partnership will roll out in three phases, with the final to conclude in March 2018.

The second \$3.8-million project will study improving fuel economy by replacing steel components with lighter metals such as aluminum and magnesium.

The most eye-catching aspect of the announcement was a gleaming red Viper SRT cooling its heels beside the podium. The 640-horsepower beast includes a structural dashboard component that is the largest piece of magnesium used in any vehicle in the world.

The third announced project will examine the potential societal

and economic impacts that could come with wide adoption of electric cars in Canada.

McMaster president Patrick Deane said the university is "grateful for the investments of resources and trust from our partners" in the quest for technological advances.

"It allows our researchers to focus on developing the automotive technology that will enable more sustainable, efficient and safe travel, as well as promote greater economic stability."

According to Chrysler, electric vehicles have limited market penetration due to high component costs.

"Affordability will be a hallmark of the technology that emerges from the Chrysler-McMaster partnership," reads a press release about Friday's announcement. For instance, re-

searchers will look for ways to reduce rare mineral content in the magnets within electric motors.

MARC, an 80,000-square-foot, \$26-million conversion of part of a former appliance warehouse, opened within the McMaster Innovation Park in May. It is home to about 500 researchers, faculty and students and serves as the main campus of a joint automotive technology program offered by Mac and Mohawk College.

MARC also does work with Ford, General Motors and ArcelorMittal Dofasco.

Chrysler Canada operates plants in Windsor and Brampton and a casting plant in Etobicoke and is a partner in the University of Windsor Automotive Research and Development Centre.

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## PROJECTS AT A GLANCE

### Electrified powertrains

- Led by Ali Emadi, Canada Excellence Research Chair in hybrid powertrains
- \$18.2 million
- Studying energy storage and component reliability, durability, weight, size and scalability across a range of vehicles
- Partnership with Chrysler Group, Natural Sciences and Engineering Research Council of Canada

### Lighter alloys

- Led by McMaster mechanical engineering professor Sumanth Shankar
- \$3.8 million
- Focus on wider use of aluminum and magnesium alloys in building automobiles
- Funding partners include NSERC, CANMET and four manufacturers.

McMaster researchers will collaborate with those at Ryerson University, the University of Trento in northwestern Italy and Fiat Group.

### Costs and benefits of electric mobility

- Led by geography professor Pavlos Kanaroglou
- \$2.4 million
- Will consider the social costs and benefits of electrified vehicles, enabling manufacturers to better design and market vehicles that meet consumer needs
- Funded by the Social Sciences and Humanities Research Council, Ford Motor Company of Canada, Burlington Hydro, Electric Mobility Canada, the Canadian Automotive Association and the Ministry of Transportation