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## **FCA Canada Honoured as 2019 Top Research Recipient in NSERC 'Synergy Awards' for Partnership With McMaster University on Electrified and Hybrid Powertrain Development**

- FCA receives 2019 Natural Sciences and Engineering Research Council (NSERC) of Canada "Synergy Award for Innovation" in the "Partnership with a Large Company" category
- Award honours outstanding research and development partnerships between a university or a college and industry in natural sciences and engineering
- Award highlights FCA's partnership with McMaster University's Automotive Resource Centre in developing next-generation, energy-efficient, high-performance electrified powertrains and powertrain components
- Current integrated multidisciplinary research work continues between FCA and the McMaster Automotive Resource Centre on "The Car of the Future" project, providing innovative solutions to address complex issues pertaining to electrified vehicles of the future

November 10, 2020, Windsor, Ontario - FCA Canada announced today that it has received a 2019 Natural Sciences and Engineering Research Council (NSERC) of Canada "Synergy Award for Innovation" in the "Partnership with a Large Company" category.

The nomination was for a project titled "Electrified Vehicles: The Car of the Future" in partnership with the McMaster Automotive Resource Centre (MARC) at McMaster University in Hamilton, Ontario, led by Dr. Ali Emadi, who oversees a robust research group at MARC with more than 250 graduate and undergraduate students, post-doctoral research fellows and engineers. The award highlights FCA and FCA Canada's commitment, along with its academic partners, to develop next-generation, energy-efficient, high-performance electrified powertrains and vehicle components.

Since 1995, the Synergy Awards for Innovation honour outstanding research and development (R&D) partnerships between a university or a college and industry in natural sciences and engineering. They are judged on the partnership, effective use of resources and tangible benefits to Canada.

"We're honoured to receive this award from the Natural Sciences and Engineering Research Council of Canada as it serves as a testament to FCA's leadership in the development of next-generation electrification and hybrid powertrain systems, as well as emerging technologies that position our company for future growth," said Tony Mancina, Head of Engineering, FCA Canada. "Our partnership with Dr. Emadi and the McMaster Automotive Resource Centre has been especially rewarding in that we are not only developing future vehicle technologies, we're also developing future skilled workers in Canada."

"McMaster's collaboration with FCA is an example of how effective NSERC has been in empowering partnerships between academia and the private sector. FCA has helped us tremendously as we have built one of the finest R&D programs in the world in transportation electrification at the McMaster Automotive Resource Centre to develop the electrified vehicles of the future," said Dr. Ali Emadi, Professor, Canada Excellence Research Chair Laureate and NSERC/FCA Industrial Research Chair in Electrified Powertrains, McMaster University. "Thank you to FCA for their support, even during this trying time of COVID-19, and to NSERC for valuing applied research and supporting industry partnerships."

"This year is about highlighting and celebrating how much science is playing an important role in our everyday lives," said Professor Alejandro Adem, President of NSERC. "The prize winners showcase their excellence in science research with their breakthrough successes in diverse fields. Congratulations to all prize winners for their significant achievements."

Universities honoured with a Synergy Award receive a \$200,000 NSERC research grant. Industrial partners receive a \$30,000 voucher valid toward the cash portion of their required contribution for a new Alliance grant, which encourages university researchers to collaborate with partner organizations in the private, public or not-for-profit sectors.

### **FCA – McMaster Additive Manufacturing Project**

As a result of FCA's research partnership with McMaster University that began in 2013, several electrified vehicle powertrain components have been developed in collaboration with Dr. Emadi and his student team. Examples include a high-power inverter prototype, a tractor motor not only designed to FCA specifications, but also with significantly reduced permanent magnet volume, and improved powertrain operation through an optimized drive unit design. Key components of these innovations have been incorporated in the powertrain system of the current Canadian-built, [Chrysler Pacifica Hybrid](#) minivan.

This multidisciplinary and comprehensive co-development of technologies, designs, tools and processes has also been integrated into FCA's wider electrified powertrain program.

In addition, FCA has employed more than 30 McMaster students and post-doctoral trained individuals with this research project in the form of direct hires and interns who work alongside more than 40 dedicated full-time FCA engineers.

As the partnership between FCA and McMaster continues, work is ongoing with Dr. Emadi on the "The Car of the Future." The goal of this multimillion-dollar project between FCA and MARC, which runs through 2023, remains to provide innovative solutions to address complex issues of the electrified vehicles of the future, through integrated multidisciplinary research.

Specifically, the objective is to accelerate the development of next-generation electrified vehicles through higher efficiency, better performance and lower cost.

Further insights will look to identify and improve electrified powertrain core competency (models, algorithms, tools and software) and develop production-ready electrified powertrain systems and component solutions in the years ahead.

### **McMaster University**

McMaster University, one of four Canadian universities listed among the Top 100 universities in the world, is renowned for its innovation in both learning and discovery. Located in Hamilton, Ontario, McMaster has been named the most research-intensive Canadian university for three consecutive years by Research InfoSource. It has a student population of more than 34,000 and a community of more than 205,000 alumni representing 163 countries.

### **NSERC**

NSERC is a federal agency that helps make Canada a country of discoverers and innovators for all Canadians. The agency supports some 30,000 postsecondary students and postdoctoral fellows in their advanced studies. NSERC promotes discovery by funding more than 12,000 Dr.s every year and fosters innovation by encouraging about 2,400 Canadian companies to participate and invest in postsecondary research projects.

### **FCA Canada**

Founded as the Chrysler Corporation in 1925, FCA Canada Inc. is based in Windsor, Ontario, and celebrates its 97th anniversary in 2022. FCA Canada is a wholly owned subsidiary of FCA, a North American automaker based in Auburn Hills, Michigan and member of the Fiat Chrysler Automobiles N.V. (FCA) family of companies. FCA Canada has approximately 440 dealers that sell Chrysler, Dodge, Jeep®, Ram, FIAT and Alfa Romeo products, as well as SRT performance products. The company also distributes Mopar and Alfa Romeo parts and accessories. In addition to its assembly facilities, which produce the Chrysler Pacifica, Chrysler Pacifica Hybrid, Chrysler Voyager and Chrysler Grand Caravan (Windsor) and Chrysler 300, Dodge Charger and Dodge Challenger (Brampton), FCA Canada operates an aluminum casting plant in Etobicoke, a research and development centre in Windsor, and has sales offices and parts distribution centers throughout the country.

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