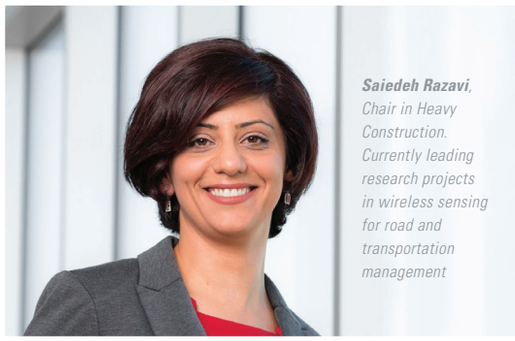
NEXT-GENERATION AUTOMOTIVE INNOVATION

McMaster Engineering's leading researchers are looking ahead to the Next Generation Vehicle. Working with upwards of $200M in program and infrastructure funding, our Engineers are collaborating with over 250 researchers and more than 200 students in Science, Business, Economics and other areas to actively overhaul Auto R&D and guide public policy. We are making advancements that integrate and optimize the newest technologies in every area and are providing solutions for Canada's automotive industry that will bring greater competitive advantage to connected businesses in local and international markets.

EcoCAR 3

McMaster is proud to be one of only two Canadian Universities participating in North America's premier collegiate-level automotive engineering competition (U.S. Department of Energy (DOE) Advanced Vehicle Technology Competition (AVTC) series).

Students experience hands-on learning at McMaster Automotive Resource Centre (MARC)



***Saiedeh Razavi**, Chair in Heavy Construction. Currently leading research projects in wireless sensing for road and transportation management*

*Director **Stephen Veldhuis** works with a student in the McMaster Manufacturing Research Institute*

We Solve Technical and Logistical Transportation Challenges:

- Developing materials, coatings and paints that are long-lasting and ahead of the curve
- Stronger, lighter steels & mircoalloys for safer, more cost-effective vehicles
- Highly intuitive safety critical software for smart systems and smart cities of the future
- Innovative precision machining gives Canadian companies strong competitive advantage

We Support Industry Innovation and Commercialization:

- First-hand opportunity to recruit talent trained to work with the most cutting edge technologies
- Opportunity to apply fresh perspectives and expertise to your design and manufacturing challenges
- Explore new processes without shutting down operations
- Access to unique facilities and state of the art equipment
- Privileged access to licensing of emerging technology development

Our researchers can help you succeed. Connect with us.

Office of the Associate Dean, Research & External Relations
T: 905.525.9040 ext. 27129 | **E:** engresearch@mcmaster.ca
www.research.mcmaster.ca

McMaster Industry Liaison Office (MILO)
T: 905-525-9140 ext. 28646
milo.mcmaster.ca/industry

INNOVATION.CA
CANADA FOUNDATION FOR INNOVATION | FONDATION CANADIENNE POUR L'INNOVATION

NSERC CRSNG

Ontario

McMaster University ENGINEERING

ACCESS CUTTING EDGE TALENT AND TECHNOLOGY

The calibre and scope of our research is unmatched. Our researchers know that collaborative work yields the most informative solutions for automotive challenges, from creating software and simulation programs to understanding visual attention and motion perception.

***Ali Emadi**, Canade Excellence Research Chair (CERC), in Electric, Hybrid & Plug-In Hybrid Powertrain*

***MARC** (McMaster Automotive Resource Centre), home to Ali Emadi's CERC Research Group, one of the largest institutes in academia in transportation electrification.*

Access our expexpertise and equipment at:

- Our 80,000 sq. ft. McMaster Automotive Resource Centre (MARC)
- McMaster Manufacturing Research Institute
- McMaster Centre for Software Certification
- Brockhouse Institute for Materials Research
- Canadian Centre for Electron Microscopy
- Centre for Automotive Materials and Corrosion
- Initiative for Automotive Manufacturing Innovation
- Leadership in Automotive Powertrain (LEAP) Program
- Centre for Mechatronics and Hybrid Technologies
- Network on Engineering Complex Software Intensive Systems
- McMaster-Mohawk Bachelor of Technology Program
- McMaster Institute for Transportation and Logistics
- McMaster Steel Research Centre
- Centre for Engineering Design

***Greig Mordue**, ArcelorMittal Dofasco Chair in Advanced Manufacturing*

"My goal as chair is to elevate the importance of manufacturing within Canada and to position McMaster at the centre of advanced manufacturing policy in this country."

Our Research Pillars:

Electrification

- Electric, Hybrid & Plug-In Hybrid Powertrain Research
- Power electronics design and development (100 w to 400 kw & 100 rpm to 22,000 rpm)
- DC/DC converters, AC/DC rectifiers, DC/AC inverters,
- Electric Motor Design & Development: switched reluctance motors, interior permanent magnet motors

Software Certification & Safety

- Testing, monitoring, fault-prediction, optimization systems
- Prognostics & health monitoring for in-vehicle applications and operational reliability
- Applications of formal methods to safety critical real-time systems
- Supervisory control of discrete event systems

Lightweight Automobiles

- Lightweight alloys development
- Testing spring-back and trimming of Aluminum sheets
- Galvanizing of high strength, light steels
- Advanced paints, coatings, & corrosion products

Autonomous Vehicles

- Robotics & manufacturing automation
- Wireless sensing for road and transportation management
- Intelligent infrastructure for transportation systems, logistics and construction
- Public policy initiatives for electric and autonomous transportation across all sectors

Invest in Excellence with the Scientific Research & Experimental Development Tax Incentive Program

Funds spent on Canadian university research are eligible for tax credits through programs such as the Scientific Research & Experimental Development Tax Incentive Program, the largest single source of federal government support for Industrial Research and Development in Canada. Any business involved in basic or applied research, or in developing new or improved materials, devices, products, or processes may be eligible. Visit **www.cra.gc.ca/srec-assessment** for more details.

McMaster University ENGINEERING