

Composites Development Center of Quebec (CDCQ)

Cégep de Saint-Jérôme

 Saint-Jérôme, QC



ABOUT CDCQ

Founded in 1989, the Centre de développement des composites du Québec - Composite Development Centre of Quebec (CDCQ) is a College Centre for the Transfer of Technology (CCTT) that is part of Synchronex, the CCTT network. Since March 2020, the CDCQ has been a Technology Access Centre (TAC) of Canada and a member of the Tech-Access Canada network, a national network of innovation and applied research across Canada.

The CDCQ helps companies in the composite value chain with applied research, technical assistance, and information dissemination services, enabling them to improve the quality and performance of their products. For the realization of projects, the Centre benefits from a multifunctional workshop with equipment covering most industrial processes. A state-of-the-art material testing laboratory with ISO 17025 accreditation completes the service offering.

CDCQ's experts, engineers, and technicians have the skills and expertise needed to provide innovative solutions for entrepreneurs looking to improve their skills and prosper in a competitive environment here in Quebec, Canada, and around the world.

The Centre offers a range of services to exploit the full potential of new technologies, with the ultimate goal of transferring both the technology and the intellectual property to industry.

The CDCQ has access to key grants to help finance innovative technology research projects for its clients.



TAC - CDCQ, Saint-Jérôme, Qc

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RESEARCH AND INNOVATION EXPERTISE

EXPERTISE

1. Research involving materials, processes or equipment in the composites sector
2. Composite processes development and start-up, assistance in the conversion of metal parts to composites
3. Molding tests and prototyping
4. Prototyping and 3D printing of molds and tools for research and development
5. Expertise in sustainable development in composites: composite recovery, pyrolysis, recyclable thermoplastic composites, process optimization, automation and robotization.
6. Mechanical characterization of materials or products
7. Staff training, knowledge transfer
8. Conference organization, promotion of the composite sector environment

Previous Research Projects

- **CDCQ-rCF:** Developmental use of recycled carbon fibers in aircraft, helicopter and train secondary structure.
- **CDCQ-Argon:** Development of high performance bicycle parts in composite materials.
- **CDCQ-composite thermoplastics:** Development of in situ polymerization thermoplastics with continuous long fibers reinforcements
- **CDCQ-Mawashi:** Development of composite materials suitable for the manufacture of a human augmentation system.
- **CDCQ-Biorenfort:** Use of cellulosic reinforcement for pultrusion of composite structures.
- **CDCQ-Valuation:** Valorization of composite materials by pyrolysis process.
- **CDCQ-ACV Land transport:** Life cycle analysis of train, bus and coach parts made of composite materials.
- **CDCQ-RMC:** Development of an innovative preforming technology for the molding of parts in composite materials.
- **CDCQ-3D hollow parts:** Development of hollow parts with 3D printing.
- **CDCQ-recycled bus parts:** Development of bus parts made from recycled composite materials.
- Development of carbon rods for lightweight wheelchairs.
- **CDCQ-compression molding pastes:** Development of molding pastes for the compression production of composite structural parts.
- **CDCQ-nanofibriles:** Evaluation of performance criteria for the manufacture of composite parts with robotic deposition of cellulose nanofibriles.
- **CDCQ-Dev Carbone recycled:** Development of a molding material from recycled carbon fibers.
- **CDCQ-recycling waste composite production:** Recycling of production scraps of composite materials and end-of-life parts.

- **CDCQ-composites:** Analysis of the behavior and performance of new cellulosic reinforcements replacing fiberglass, for the manufacture of thermosetting composite parts
- **CDCQ-fiber composite laser:** Laser cutting of fiber reinforced composites.
- **CDCQ-Wind turbine repair:** Development of composite materials suitable for repairing wind turbines in northern environments.
- **CDCQ-Dev ultralight aircraft:** Development of a new manufacturing method for the fuselage of an ultralight aircraft.
- **CDCQ-tidal turbine:** Development of a composite wing for a tidal turbine with oscillating wings.
- **CDCQ-aerospace:** Development of an innovative technique for the controlled generation of porosity in injected aerospace composite parts.
- **CDCQ-rehab without trench:** Development of a resin and a prepreg for the rehabilitation of trenchless conduits.

Fields of projects

- Molding of thermosetting composites with commonly used processes (ex: infusion, RTM, RTM light and compression)
- Molding of long-fiber thermoplastic composites
- Recycling and recovery of composites
- Bioreinforcement molding
- Molding of small "net shape" parts
- 3D printing of large-scale tools
- Development and evaluation of molding pastes
- Upgrading of recycled carbon fibers
- Preforming technologies
- Molding of hollow parts

