

Quebec Metallurgy Center



Centre de métallurgie du Québec

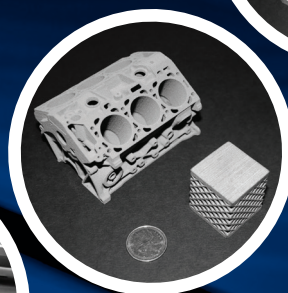
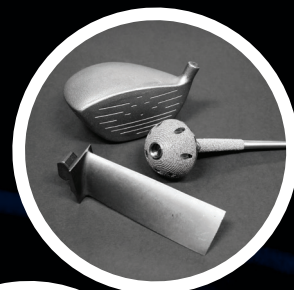
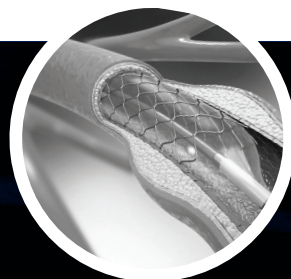
Research and Development

Applied metallurgy

Characterization laboratory

Non-destructive testing (NDT)  
training and examination center

Specialized training



# ABOUT THE CMQ

## Mission

Support the metallurgical industry competitiveness through research and technological development in a collaborative approach with private and public partners while promoting technical college education and knowledge transfer in companies.

## CMQ in action

- Team of **55 people**
- Over **45 000 square feet**
- Nearly **\$25 M** in industrial research infrastructures
- More than **200 manufacturers** served every year
- Several specialized **training**

### – 1985

Foundation of the Quebec Metallurgy Center

### – 1988

Creation of the first francophone center for non-destructive testing practical and theoretical examinations in Canada

### – 2008

Acquisition of a building in the Hautes-Forges industrial park, Trois-Rivières

Creation of the Advanced Alloys Technology Center

### – 2011

Certification of the first mechanical tests according to ISO 17025: 2005

### – 2012

NSERC Industrial Research Chair for Colleges in aluminum processing awarded

### – 2013

Creation of a dedicated Additive Manufacturing section

Recognition as a Technology Access Center, Member of Tech Access Canada (TAC)

### – 2015

Integration of training and exam services in non-destructive testing (NDT)

### – 2019

Creation of a Quebec excellence center in powder metallurgy

NSERC Industrial Research Chair for Colleges on the development of metal powders awarded

# APPLIED RESEARCH AND DEVELOPMENT

INNOVATE  
DEVELOP  
SHARE

## Al

Aluminium  
processing



Advanced  
alloys



Additive  
manufacturing



Powder  
metallurgy



Corrosion and  
Metal protection



Welding



Modelling



Non-destructive  
testing



Metal forming

# INDUSTRIAL RESEARCH CHAIRS FOR COLLEGES



## 2012

### Aluminium processing

Development and optimization of aluminum alloys and processing technologies including foundry, forming, welding, additive manufacturing and surface treatments.

#### Main partners

Rio Tinto Aluminium, Fonderie Paber, Fonderie Powercast, Canimex, CIF Métal, Technologie du magnésium et de l'aluminium (TMA), Withfield Welding and, recently, Centre québécois de recherche et de développement de l'aluminium (CQRDA).

#### Private projects collaborations

Fonderie Lemoltech, Imacro, Dienamex, Proco, Sotrem Maltech, Fiat Chrysler Automotive Canada, MacDonald, Dewilther and Associates, Nematik, Bombardier Recreational Products and many others.

#### Research Collaborations

Université Laval, Université du Québec à Chicoutimi (UQAC) and REGAL.



## 2019

### Powder metallurgy

Development of metal powders for advanced manufacturing processes and applications.

#### Main partners

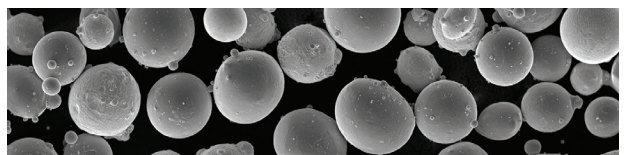
Tekna, Hydro-Québec, P4Bus Systems, General Dynamics, 5N Plus, Precision ADM, RIDD, Polycontrols, Expanse Microtechnologies, SphèreCo.

#### Private projects collaborations

Industrials partners of the Research Chair and new partners are welcome to establish new R&D projects.

#### Research Collaborations

Université Laval, École Polytechnique de Montréal and Centre de recherche industrielle du Québec (CRIQ).



Environment ISO 9001 and 17025

# UNIQUE EXPERTISE



## Non-destructive testing

**NDT Recognized Training  
Organization (RTO)**

**NDT Authorized Exam Center (AEC)**

Canadian bilingual NDT Centre

- Inspector certification in non-destructive testing (NDT) for written and practical exams
- Canadian certification – CAN/CGSB 48.9712-2014
  - Eddy Current Testing (ET)
  - Radiographic Testing (RT)
  - Penetrant Testing (PT)
  - Magnetic Testing (MT)
  - Ultrasonic Testing (UT)
  - XRF Analyzer Operator
  - Certified Exposure Device Operators (CEDO) Level 1, 2 or 3
- Others training
  - Eddy Current Array (ECA)
  - Phased Array Ultrasonic Testing (PAUT)

## Applied metallurgy

- Fractography
- Corrosion
- Consulting

## Characterization laboratory

**R & D Support**

- Modelling
- Chemical and electrochemical testing
- Metallographic testing
- Mechanical and tribology characterization
- Non-destructive testing

## Specialized Equipment

- Gaz and plasma atomizers
- Additive manufacturing by directed energy deposition (DED), binder jetting and ultrasonic welding
- Plasma arc melting furnace
- Belt sintering furnace
- Induction melting furnaces and induction skull melting furnace (ISM)
- Vacuum heat treating furnace and hot isostatic press (HIP)
- Scanning electron microscope (SEM)
- Rolling and forging presses
- Plasma and HVOF thermal spraying
- No-bake sand casting, investment casting and permanent mold casting processes
- Low pressure and high pressure die casting presses
- Welding: GTAW, GMAW, PAW, SAW and GMAW-CMT
- Modelling softwares: foundry and metal forming

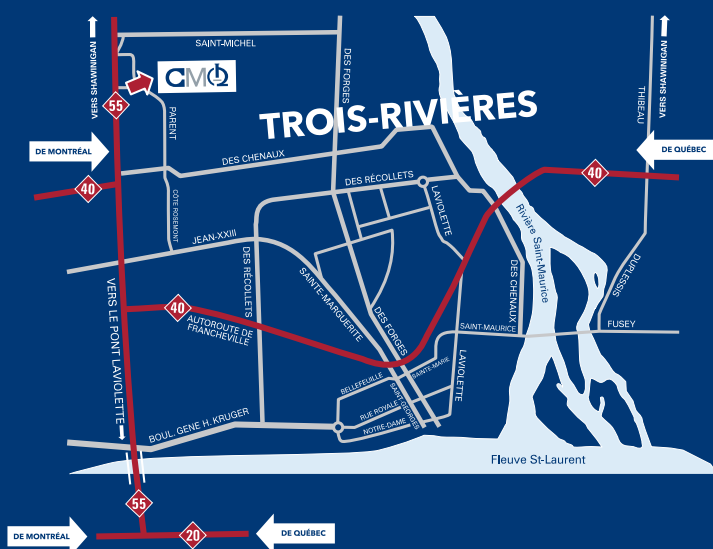




# POUR UNE SOLUTION INNOVANTE FOR AN INNOVATIVE SOLUTION



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SYNCHRONEX  
Le réseau des CCTT

CRIQ  
PARTENAIRE D'INNOVATION

REGAL  
REGROUPEMENT ALUMINIUM  
CENTRE DE RECHERCHE SUR L'ALUMINIUM  
ALUMINIUM RESEARCH CENTRE

PRIMA  
PÔLE RECHERCHE INNOVATION MATÉRIAUX AVANCÉS

QUÉBECINNOVE

Tech-Accès Canada

CORDA  
Centre québécois  
de recherche et  
de développement  
de l'aluminium  
DES IDÉES EN TRANSFORMATION

CRIAQ

CRITM

alu Québec  
Grappe de l'aluminium