

## Improving operational reliability in the oil sands

The Materials and Reliability in Oil Sands (MARIOS) program tackles industry-wide maintenance and reliability issues. The goal of MARIOS is to develop knowledge and validate technologies to significantly reduce downtime, and improve operational reliability and productivity in the oil sands industry. The consortium links oil sands producers, materials and equipment suppliers, fabricators, and technology providers to collaboratively solve industry-wide problems.



## PROGRAM FOCUS

### Mining Equipment

Improving the design and operation of equipment such as ground engaging tools and haul truck tires to improve operations and decrease maintenance costs.

### Processing equipment

Development and selection of advanced manufacturing processes and materials to enable improved equipment reliability in aggressive wear conditions.

### Corrosion

Providing solutions to address corrosion issues such as tuberculation in piping.

### Robotics and Monitoring

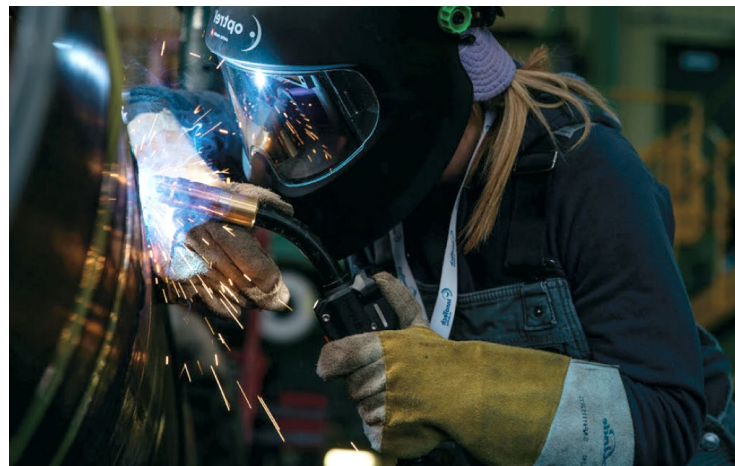
Identification and selection of advanced technologies to enable monitoring and inspection of equipment.

### Materials

Assessment of new advanced materials that can provide step changes in protection from wear and corrosion.

## MEMBER BENEFITS

- Access to technical research in the four portfolios
- License-free use of technology developed in MARIOS to support members' research and development
- Attendance at workshops
- Opportunity to present at semi-annual technical workshops
- Networking with oil sands mining companies and suppliers/manufacturing supply chain
- Access to training seminars and courses.



**“Syn crude spends in the order of \$1 billion each year on maintenance, not including the production time that is lost when equipment is out of service. Innovation in materials and reliability can pay double benefits as it can reduce maintenance costs and increase production by keeping equipment working more reliably.”**

– Stefano Chiovelli, Syn crude

## MARIOS MEMBERS 2023-24

### Producers

- Canadian Natural Resources Ltd.
- Imperial Oil Resources Limited
- Suncor Energy Inc.
- Syncrude Canada Ltd.

### Government

- InnoTech Alberta Inc.

### Suppliers

- Apollo Clad
- Arctec Alloys
- Black Cat Blades Ltd.
- Bradken Canada Ltd.
- Canadian Innovative Materials Ltd.
- Canadian Wear Technologies
- Castolin Eutectic
- Corrosion & Abrasion (CASL)
- Demir Engineering

- ESAB
- ESCO Canada (WEIR Minerals)
- Exergy Solutions
- Filotech Electrodes
- Flint Corp.
- Fuller Industrial
- Good Earth Tools
- Group Six Technologies
- HDIM Protective Coatings
- Heavy Equipment Repair
- Indurate Alloys
- IRISNDT
- Kennametal
- KSB GIW
- Manluk Mining Inc.
- Oerlikon Metco (Canada) Inc.
- Penticton Foundry Ltd.
- Phaseshift Technologies

- PIP360 Inc.
- Polycorp
- Postle Industries
- Primoris Willbros Canada
- Progressive Rubber
- Rapid 3D
- Raptor Mining
- Rosen IPS Canada Ltd.
- SPRS
- SSAB
- Stress Engineering Services
- Summit Valves
- Taskmaster Technologies
- Trimay Wear Plate
- Welding Alloys Inc.
- Westpower Equipment
- Whitfield Welding

## SIGNIFICANT PROJECTS

- Design and selection of materials for slurry systems
- Evaluation of recycled water issues
- Design, selection and repair of overlay materials
- Design and selection of sintered carbides
- Guidelines for FCAW

**“Oerlikon Metro finds tremendous value in being part of the MARIOS consortium, which plays an important role in bringing together and aligning oil sands producers and service providers, ensuring members are focused on the most relevant issues facing the industry today. The program provides a neutral form for members to share information and ideas while creating a great environment to connect with key personnel within the field.”**

**– Tom Petruch, Oerlikon Metro**

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**FOR MORE INFORMATION,  
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