



The Canadian Mining and Metallurgical Foundation

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Red Lake Branch Presents:

Hani Mitri

Breaking Rocks Without Explosives – A Mine Safety Paradigm Shift

This lecture reviews the results of a four-year project sponsored by Natural Resources Canada with support from CANMET Mining, Newmont and the Ministry of Economics and Innovation of Quebec. The project aim was to develop an explosive-free method for hard rock breakage in mines using expansive cement. Phase 1 of 3 was concerned with small-scale laboratory tests for peak expansive pressure measurement in steel cylinders and fracture length estimation in granite blocks. Phase 2 encompassed large-scale tests of one-metre-square panels from concrete and granite subjected to biaxial confinement. Numerical modelling was used extensively to design and analyze the drill hole patterns. In Phase 3, field validation tests were carried out at two underground mines, Hoyle Pond and Éléonore owned by Newmont. They included boulder fragmentation and slashing of drift intersection. Future research focusing on applications for narrow vein mining and boulder fragmentation in subzero temperature will be discussed.

Date: Monday, May 6th, 2024

Time: 6:00 pm

Location: Evolution Curling Lounge

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Pizza will be available for Purchase