

Free Public Lecture

GEOLOGY DEPARTMENT **Seminar Series 2018-2019**



Guest speaker:

Dr. Dogan Paktunc

**Senior Research Scientist
Natural Resources Canada
CanmetMINING**

“Towards sustainable development of the Ring of Fire chromite resources”

The Ring of Fire chromite deposits in northern Ontario are considered world-class offering significant economic development potential. To ensure that the resources are developed in a sustainable and responsible manner while the Canadian value and benefits are maximized, CanmetMINING has undertaken a research program with the objectives of (1) improving & optimizing the critical unit processes and developing clean technologies in value-added products, and (2) evaluating the long-term environmental stability of mine and metallurgical wastes. Mineral processing challenges include utilization of lower grade deposits, improving grade recoveries and minimizing mining wastes. Chromite fines lost to the tailings fraction present an economic opportunity for recovering the contained value while lowering the burden on the tailings impoundments. Metallurgical processing challenges include high-energy requirements and greenhouse gas emissions associated with the conventional smelting processes. These challenges are being addressed by identifying technologically most advanced ferrochrome production flow sheets and through the development of new technologies as alternates to the conventional smelting processes. Environmental challenges include potential metal(loid) releases from mine tailings and slag, Cr(VI) formation during smelting, and liability associated with large slag piles. Our studies aim to reduce liabilities (both environmental and cost) by making slag unreactive and inert so that it is utilized as a by-product. The presentation will discuss these challenges and offer possible solutions for moving forward in a responsible manner and in accordance with NRCan's mandate on low carbon processes and clean technologies, and helping Canadian industry in choosing best available technologies.

Short bio:

Dr. Dogan Paktunc is a senior research scientist with CanmetMINING and the principal investigator of Canada's Chromite/Ferrochrome R&D program aiming for responsible and sustainable development of the Ring of Fire chromite resources. He possesses over 35 years of experience in earth, environmental and metallurgical sciences with research interests on the development of new and clean technologies through experimental studies, supported by advanced mineralogical and materials characterization at the molecular-scale to provide insights into mineral-solution interactions and mineralogical/phase transformations during mineral processing, hydrometallurgy and pyrometallurgy operations. He has published over 150 scientific papers and technical reports.

Wednesday, December 12, 2018

3:00 pm in CB 3031