

Seminar Series

Mine waste management & mine site reclamation

Good practice and trends in Canada

Luleå University of Technology (LTU) and the SUN program have the pleasure to invite you to a seminar series about mine site reclamation and R&D trends in mining environment in Canada. Seminars will be given by Prof. Thomas Pabst (Polytechnique Montreal, Canada) currently visiting LTU.

For more information about this seminar series, please visit:

<https://www.ltu.se/research/Framtidsomraden/SUN/Aktuella-projekt/Modelleringskurs-och-en-serie-modelleringsseminarier-1.209939>

SEMINAR TITLE	DATE	TIME
Impact of climate change on mine site reclamation <i>Resilience and adaptation</i>	2021-09-08	13.00 – 14.00
Link: https://polymtl-ca.zoom.us/j/87668136830 - Password: 552263		
Integrated mine waste management <i>Innovation for a responsible exploitation of natural resources</i>	2021-09-16	13.00 – 14.00
Link: https://polymtl-ca.zoom.us/j/87668136830 - Password: 552263		
Numerical simulations in mine site reclamation design <i>The right tool, the right way</i>	2021-09-24	13.00 – 14.00
Link: https://polymtl-ca.zoom.us/j/87668136830 - Password: 552263		

**Summaries of seminars on the next page*

Thomas Pabst is an Associate Professor at the Department of Civil, Geological and Mining Engineering at Polytechnique Montréal (Quebec, Canada), and the Scientific Director of the Research Institute of Mines and Environment (RIME). Prof. Pabst's current research includes integrated mine waste management, in-pit disposal, circular economy applied to mining engineering, and effect of climate change on mine site reclamation.

For more information, please contact Prof. **Christian Maurice** (Christian.maurice@ltu.se).

This seminar series is made possible thanks to the support of the SUN program:
<https://www.ltu.se/research/Framtidsomraden/SUN/Om-framtidsomradet>

Seminar Series

Mine waste management & mine site reclamation

Good practice and trends in Canada

Impact of climate change on mine site reclamation (1 hour, September 8, 2021, at 13.00)

Climate change is a reality, and the mining industry is probably more exposed to their impact than any other industry, because of the long lifespan of mine sites and the necessity to build reclamation systems which remain effective for an indefinite period of time (100, 200, maybe 1000 years or even more). Climate change must therefore be considered in reclamation design, but how? This seminar will present the latest developments in Canada on the matter and discuss some preliminary recommendations that should soon become part of provincial regulation. The presentation will detail the main impacts of climate change on mining operations and mine site reclamation, solutions to adapt reclamation design will be presented, and some avenues to improve practices for a more resilient reclamation will be proposed.

Integrated mine waste management (1 hour, September 16, 2021, at 13.00)

Mining operations are growing bigger, yet, at the same time, production and management approaches seem to have reached a limit which makes them less efficient to tackle the new “low grade, large volume” operational challenges. Indeed, despite recent technical developments, tailings dam failures continue to occur, with dramatic consequences. At the same time, conciliating geotechnical and geochemical stability objectives has become more and more difficult. It seems therefore that time has come to reconsider conventional mine waste management approaches and think of new ways to manage and dispose of tailings and waste rocks. This seminar will present some examples of innovative integrated mine waste management approaches, which all aim to better respond to society needs and to make exploitation of natural resources more responsible. During this seminar, techniques such as co-disposal, valorization and circular economy, and new construction methods for mine waste storage facilities will be discussed and illustrated with examples from real case studies.

Numerical simulations in mine site reclamation design (1 hour, September 24, 2021, at 13.00)

Numerical tools have become increasingly powerful during the last decade and models can now be more complex and closer to the reality than ever. Nevertheless, simulation codes remain nothing more than advanced “calculators”. Careful approaches, strict protocols and a good dose of engineering sense therefore continue to be required to ensure that simulation results are reliable. Based on recent examples and real case studies, this seminar will illustrate how numerical tools have changed the way we design mine site reclamation. Concepts such as calibration, validation and numerical extrapolation will be addressed, and good tips and recommendations will be proposed. The seminar is aimed at both those who conduct numerical simulations and those who use and evaluate them. Some time will be reserved at the end of the presentation to exchange ideas on the subject and answer questions.