NORDIC GROUTING SYMPOSIUM 2019

SEPTEMBER 2-3, 2019
HELSINKI, FINLAND
WWW.NGS19.FI

ORGANIZED BY

ENDORSED BY
11.30 Registration opens and lunch

12.30 Opening session
Opening by Finnish Tunneling Association
Session chaired by Janne Lehto, Finnish Tunneling Association / Oy Forcit Ab

12.40 Keynote presentation: Eivind Grøv

13.10 Keynote presentation: Jari Heikkilä

13.40 Optimization of Grouting Material by the Analytic Hierarchy Process
Hanna Lehtonen (Pöyry Finland Oy, Finland)

13.55 An experimental study of 2D radial flow of a yield stress fluid between parallel disks
John Shamu (KTH, Sweden)

14.10 Sponsor presentation by Epiroc
Patrik Ericsson (Epiroc)

14.20 Break and exhibition

Session chaired by Erik Johansson, AINS Group

14.40 Characterization of effective transmissivity for cement grout flow in rock fractures
Liangchao Zou (KTH, Sweden)

14.55 Hydraulic Jacking and Pressure Distribution During Rock Mass Grouting With Cement Based Grouts
Martin Hovda Haugsand (COWI, Norway)

15.10 Rock excavation cycle and its effect on grouting
Johan Funehag (Luleå University of Technology, Sweden)

15.25 Physical modeling of grout spreading in discrete fractured rocks
Masoud Torkan (Aalto University, Finland)

15.40 Sponsor presentation by Mapei
Davide Michelis (Mapei)

15.50 Coffee and exhibition

Session chaired by Ilkka Satola, City of Helsinki

16.20 Characterisation of colloidal silica grout under saline groundwater – Overall results for 3-year research project
Masakuni Tsujii (Shimizu Corporation, Japan)

16.35 Identifying jacking and fracturing of soil and rock mass
Philipp Maroschek (Eguana GmbH, Austria)

16.50 Automation and digitization of chemical grouting for sealing rock mass
Sewerin Säbe (Renesco GmbH, Germany)

17.05 Characterisation of colloidal silica grout under saline groundwater – Penetration theory and injection tests in a fracture test system
Jari Martikainen (AINS Group, Finland)

17.20 Digital documentation- and data management for grouting measures
Michael Ouschan (Eguana GmbH, Austria), Leopold winkler (Technical University of Vienna, Austria)

17.35 A laboratory study on grouting in vibratory host rock
Ali Nejad Ghafar (RISE Research Institutes of Sweden, Sweden)

17.50 Sponsor presentation by Normet
Lawrence Halls (Normet)

18.00 Sponsor presentation by Häny / Semtu / Tradecc
Elise Corens (Tradecc)

18.10 Break and exhibition

18.30 Bus transportation from the venue to dinner

19.00 Dinner
Restaurant Kappeli
Address, ETELÄESPLANADI 1, Helsinki
### Session chaired by Pekka Särkkä, Concave Oy

**8.30** Keynote presentation: Thomas Dalmalm

**9.00** Invited Lecture: Minimal flow criterion for RTGC
Mohamed El Tani (Rockgro, Lebanon)

**9.30** Physical Properties of Polymer-Based Emulsion: A Unique Flexible Grout Used for Water-Sealing
William Goodman (Sovereign Hydro, Australia)

**9.45** Leaky rock bolt hole, investigation of cause and development of measures to minimize its occurrence
Hossein Khodaeverdian (Abeis Konsult AB, Sweden)

**10.00** Analysis and Application of Laboratory and Field Data to Improve Rock Mass Grouting
Martin Hovda Haugsand (COWI, Norway)

**10.15** Strategies for designing a prognosis of grouting classes
Magnus Zetterlund (Norconsult AB, Sweden), Sara Kvartsberg (Norconsult AB, Sweden)

**10.30** Grouting Strategy: Experiences, Principles & Suggestions Towards Increasing Grouting’s Efficiency
Ioannis Konstantas (Kalliosuunnittelu Oy Rockplan Ltd, Finland)

**10.45** Sponsor presentation by Sandvik
Ari Laitinen (Sandvik)

**10.55** COFFEE AND EXHIBITION

### Session chaired by Visa Myllymäki, YIT Finland Ltd.

**11.25** Pre-grouting in a TBM bored tunnel - experience from the Follo Line Railway Project
Anne Kathrine Kalager (BANE Nor, Norway)

**11.40** Pre-grouting of large rock caverns in the Oslo Field
Kristine Sæthern (NGI, Norway)

**11.55** Post-grouting in aggressive environment: case Ring Rail Line
Klaus Einsalo, Pöyry Finland Oy, Finland

**12.10** Sponsor presentation by Sovereign
William Goodman (Sovereign Hydro, Australia)

**12.20** Sponsor presentation by Eguana
Philipp Maroschek (Eguana GmbH, Austria)

**12.30** Post-grouting in Suomenlinna maintenance tunnel
Klaus Einsalo (Pöyry Finland Oy, Finland)

Closing words and announcement of NGS 2022

**13.00** LUNCH

**13.45** EXCURSION TO SUOMENLINNA TUNNEL
Sponsored by YIT

**17.45** END OF EXCURSION AT AIRPORT