

# Ground Support 2019

## Proceedings of the Ninth International Symposium on Ground Support in Mining and Underground Construction

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### *Editors*

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# Preface

The First International Symposium on Ground Support in Mining and Underground Construction took place in Abisko, Sweden, 1983 under the theme of rock bolting: theory and application in mining and underground construction. This series of symposia has evolved over the years to cover all areas of ground support and provide a documented timeline of the significant advancements in ground support technology and practice in the last 35 years. These are reflected in the improved safety statistics and performance of excavations.

The Ninth International Symposium on Ground Support in Mining and Underground Construction covered the complete spectrum of ground support, from new reinforcement and surface support products, new laboratory and in situ testing methods, quality control, monitoring, numerical modelling and applications in difficult ground conditions.

The organisers of Ground Support 2019 gratefully acknowledge the keynote speakers, Dr Mark Board, Frédéric Mercier-Langevin and Peter Andrews who provided a practical and international perspective from the USA, Canada and Australia.

The organisation of this symposium was conducted by a committee whose membership consisted of Dr Ming Cai, Professor Bruce Hebblewhite, Professor Charlie C Li, Professor Erling Nordlund, Professor Yves Potvin, Professor Pekka Särkkä, Brad Simser, Dr Jonny Sjöberg, Eduardo Rojas Valdivia, Dr Mike Yao and Professor Weishen Zhu. All administrative elements of the symposium were provided by the competent and enthusiastic Australian Centre for Geomechanics team. The symposium benefited from the financial support of many industry sponsors and the organisers gratefully acknowledge them.

Finally, this symposium would not have been possible if it were not for the authors who shared their experiences, and the independent reviewers who provided useful and insightful suggestions.

These proceedings are also freely available from the ACG Online Repository of Conference Proceedings. The papers can be accessed by scanning the QR code on this page or by visiting [papers.acg.uwa.edu.au/gS2019](http://papers.acg.uwa.edu.au/gS2019).



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