



# 32<sup>ND</sup> SOMP

ANNUAL MEETING AND CONFERENCE

NAMIBIA UNIVERSITY OF SCIENCE AND TECHNOLOGY

8-11 SEPTEMBER 2022 TOURS AND TECHNICAL VISITS 12-14 SEPTEMBER 2022 CONFERENCE



NAMIBIA UNIVERSITY  
OF SCIENCE AND TECHNOLOGY



SAIMM  
THE SOUTHERN AFRICAN INSTITUTE  
OF MINING AND METALLURGY

## Abstracts received

### Keynote Address

N. Plint, *The University of Queensland, Australia*

### Future need for robots for maintenance in underground mining

N.A. Sifferlinger, *Montanuniversitaet Leoben, Austria*

### Humanitarian Engineering Colombia - HE Colombia: an initiative to provide 'formation' to engineering students to serve historically underserved communities

J.C. Lucena<sup>1</sup>, J.F. Pacheco<sup>2</sup>, O.J.R. Baena<sup>3</sup>, <sup>1</sup>Colorado School of Mines, USA, <sup>2</sup>Uniminuto Bogotá, Colombia and <sup>3</sup>Universidad Nacional de Colombia

### Alignment of tertiary curricula and the needs of the mine of the future: a case study of the world's top ten mining engineering schools

T. Tholana and P.N. Neingo, *University of the Witwatersrand, South Africa*

### Post-Mining for a better future: the development of the research center for post-mining at the TH Georg Agricola University

J. Kretschmann and M. Hegemann, *Georg Agricola University, Germany*

### Access to raw materials for Climate protection

W. Frenz, *Aachen University, Germany*

### Educating world class engineers for the development of Mongolia

T. Hollenberg<sup>1</sup> and F. Wullkopf<sup>2</sup>, <sup>1</sup>German-Mongolian Institute for Resources and Technology GMT and <sup>2</sup>Deutsche Gesellschaft für Internationale Zusammenarbeit, Germany

### The potential contribution of mining universities to improve the license to operate

C. Dauber, P. Goerke-Mallet, and A. Daniels, *TH Georg Agricola University, Germany*

### Multidisciplinary Group Project Based Courses in mining engineering program

B. Li, C. Zhang, and S. Saydam, *The University of New South Wales, Australia*

### Optimizing the Production Schedule for Transition Mines

A. Anani<sup>1</sup>, I.O. Flores<sup>2</sup>, H. Li<sup>3</sup>, <sup>1</sup>University of Arizona, USA, <sup>2</sup>Pontificia Universidad Catolica de Chile and <sup>3</sup>University of Missouri-St. Louis, USA

### Advances in an Autonomous Roof Bolting Module

S. Schafrik, P. Kolapo, and Z. Agioutantis, *University of Kentucky, USA*

### Published grade-tonnage curves and why narrow-tabular gold mines do not achieve the expected average mining grades

C. Birch, *University of the Witwatersrand, South Africa*

### Can Blockchain Technology be the answer to the problem of conflict Minerals: Challenges and the road ahead

W. Pratt-Rogers and I. Kapoor, *University of Utah, USA*

### Compressive strength and controllable blasting parameters analysis for predicting muck-pile size and heave height

A.P. Shivute<sup>1</sup> and B. Adebayo<sup>2</sup>, <sup>1</sup>University of Namibia and <sup>2</sup>Federal University of Technology, Namibia

### A comparison of discounted cash flow and Monte Carlo discounted cash flow valuation techniques on a gold mining project

A.P. Shivute<sup>1</sup> and T. Tholana<sup>2</sup>, <sup>1</sup>University of Namibia, Namibia and <sup>2</sup>University of the Witwatersrand, South Africa

### Developing a framework for blended teaching and learning to enhance the performance of students

P. Twala, K. Chabedi, and M. Nong, *University of the Witwatersrand, South Africa*

### Curriculum review – my experience

S. Raval, *University of New South Wales, Australia*

### The role of the pulp-froth/ water-air interface on particle detachment in froth flotation

C. Chipili and C. Bhondayi, *University of South Africa, South Africa*

### Teaching sustainability in artisanal and small-scale gold mining

J.I. Tobón and O.J. Restrepo-Baena, *Universidad Nacional de Colombia, Colombia*

### The flipped learning model experience in the Resource Estimation Course - Covid-19 Safe teaching option

H.L. Ramandi and J. Barber, *University of New South Wales, Australia*

### Knisselwoods: Our media lab

A. Binder, A. Hutwalker., and O. Langefeld, *Clausthal University of Technology, Germany*

### I+MC: development and implementation of a Modern mine Closure Course

A. Hutwalker, A. Binder, and O. Langefeld, *Clausthal University of Technology, Germany*

### Underground Mine Safety: An integrated approach for the course and personnel development

A. Binder, A. Hutwalker, O. Langefeld, J. Bauermeister, M. Bothe-Fiekert, and S. Nowosad, *Clausthal University of Technology, Germany*

### Future mining education using immersive visualisation technologies

C. Zhang, S. Saydam, and I. Canbulat, *University of New South Wales, Australia*

### The ultimate need for copper mining

L. Rattmann, *TH Georg Agricola University, Germany*

### A curriculum evaluation framework: A case study of the new mining engineering curriculum at the University of the Witwatersrand

P.N. Neingo and T. Tholana, *University of the Witwatersrand, South Africa*



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## Abstracts received

### Introducing mining engineering to first year students: The benefits of a digital uplift

G. Bournival and S. Ata, *University of New South Wales, Australia*

Implementing the Online Teaching in Universities during the COVID-19 Pandemic: Experience and Lessons from China

L. Liu, H. Li, Z. Sun, and Z. Jiang, *Chongqing University (CQU), China*

### Monitoring of land surface movements in a seismically active post-mining area during mine closure - a case study

V. Sokota-Szewiola<sup>1</sup> and Z. Siejka<sup>2</sup>, <sup>1</sup>*Silesian University of Technology*, <sup>2</sup>*University of Agriculture in Krakow, Poland*

### The role of the university in the regional raw materials strategy: The Asturias case

J.M.M. Aguado and A.D. Díaz, *Universidad de Oviedo, Spain*

### Impact of commodity price volatility on the Namibian economy

A.N. Mutimili and P.N. Neingo, *University of the Witwatersrand, South Africa*

### A Building Information Modelling (BIM) framework for underground conventional mines: A plausible alternative

N.S. Mageza, A.S. Nhleko and P.J.K. Leeuw, *University of the Witwatersrand, South Africa*

### Influence of controllable factors affecting pre-split quality at Navachab Gold Mine

S.L. Iyambo, A.P. Shivute, and J.M. Akande, *University of Namibia, Namibia*

### Developing competitive and soft skills in mining engineering students: Mining Games and Mining Competitions

C. Gómez and D. Javier, *University of Huelva, Spain*

### How Industry 4.0 transforms the mining industry safer, smarter and sustainable?

F.R. Nejad, *McGill University, Canada*

### Phytomining pollution at the Tsumeb smelter with the desert tamarisk tree, *Tamarix usneoides*

I.M. Weiersbye<sup>1</sup>, I. Iiyambo<sup>2</sup>, V. Kavindjima<sup>2</sup>, A. Kanime<sup>2</sup>, C. Sililo<sup>1,2</sup>, and B.L. Dawson<sup>1</sup>, <sup>1</sup>*University of the Witwatersrand, South Africa* and <sup>2</sup>*Dundee Precious Metals Tsumeb, Namibia*

### The Expansion of Mineral Education in Southern Africa – an update

G. Dzinomwa<sup>1</sup>, P. Shava<sup>1</sup>, H. Musiyarira<sup>1</sup>, and R.S. Suglo<sup>2</sup>, <sup>1</sup>*Namibia University of Science and Technology, Namibia*, and <sup>2</sup>*Botswana International University of Science and Technology, Botswana*

### Namibia - its potential role in the development and application of green hydrogen

T. Falayi, G. Dzinomwa, H. Musiyarira, *Namibia University of Science and Technology, Namibia*