



**SAIMM**  
THE SOUTHERN AFRICAN INSTITUTE  
OF MINING AND METALLURGY



# Surface Mining Masterclass 2019

4–5 September 2019

Birchwood Hotel & OR Tambo Conference Centre, Johannesburg

## BACKGROUND

As the mining industry is rapidly pursuing Artificial Intelligence and Machine Learning - definitely the right thing to do – there is still a need to keep the miner grounded in leading practices in the field of surface mining. For example, poor drilling or the incorrect selection of the blast hole diameter can lead to poor blasts which impacts on the whole mining process such as highwall stability, fragmentation, loading and hauling, dilution, mining loss and increased comminution costs - just to name a few. Incorrect equipment selection or matching of equipment results in unoptimized cycle times and higher operating costs.

## OBJECTIVES

The objective of the masterclass is to reinforce learning around the surface mining cycle. The mining cycle is an interrelated process whereby drill-blast-load-haul impacts on each other as well as other aspects to surface mining e.g. safety, highwall design and stability, environment and economic sustainability. The symposium's objective is to review specifics aspects of the mining cycle so as to inform the attendee of leading practices in the area of surface mining.



## Preliminary Programme

### Day 1 – 4 September 2019

|             |                                                                                            |
|-------------|--------------------------------------------------------------------------------------------|
| 08:00–09:00 | <b>Scene setting</b><br>J.G. Taylor, <i>MineRP, South Africa</i>                           |
| 09:00–10:00 | <b>Drilling Session 1</b><br>K. Landey, <i>Drill Consultant, South Africa</i>              |
| 10:00–10:15 | <b>Mid-Morning Refreshments</b>                                                            |
| 10:15–10:45 | <b>Drilling best practice</b><br>K. Landey, <i>Drill Consultant, South Africa</i>          |
| 10:45–12:30 | <b>Blasting</b><br>S. Tose, <i>Global Manager - Mining Optimisation, AEL, South Africa</i> |
| 12:30–13:30 | <b>Lunch</b>                                                                               |
| 13:30–15:00 | <b>Equipment selection</b><br>H. Fourie, <i>Mining Engineer, FTY Mining, South Africa</i>  |
| 15:00–15:15 | <b>Afternoon Refreshments</b>                                                              |
| 15:15–6:00  | <b>Equipment costing</b><br>H. Fourie, <i>Mining Engineer, FTY Mining, South Africa</i>    |

### Day 2 – 5 September 2019

|             |                                                                                                                                                                                                                                                                 |
|-------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| 08:00–09:30 | <b>Geotech</b><br>B.W. Motlhabane, <i>University of Johannesburg, South Africa</i> <ul style="list-style-type: none"><li>• Guidelines</li><li>• High Wall Stability</li><li>• Monitoring, M. Bornman, <i>University of Johannesburg, South Africa</i></li></ul> |
| 09:30–10:00 | <b>Mid-Morning Refreshments</b>                                                                                                                                                                                                                                 |
| 10:00–12:30 | <b>Haul road</b><br>A. Visser, <i>University of Pretoria, South Africa</i> <ul style="list-style-type: none"><li>• Design</li><li>• Construction</li><li>• Maintenance</li><li>• Dust Pallatives</li></ul>                                                      |
| 12:30–13:30 | <b>Lunch</b>                                                                                                                                                                                                                                                    |
| 13:30–14:00 | <b>Contract mining</b><br>S.M. Rupprecht, <i>University of Johannesburg, South Africa</i>                                                                                                                                                                       |
| 14:00–15:30 | <b>Technology advances</b> <ul style="list-style-type: none"><li>• Fatigue Management</li><li>• Proximity Detection</li><li>• Drones</li></ul>                                                                                                                  |



## FOR FURTHER INFORMATION CONTACT:

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## SPONSORSHIP

Sponsorship opportunities are available. Companies wishing to sponsor or exhibit should contact the Conference Coordinator.

## Announcement & Preliminary Programme



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## Preliminary Programme

### Day 1 – Wednesday 4 September 2019

|             |                                                                                                        |
|-------------|--------------------------------------------------------------------------------------------------------|
| 07:00–08:00 | <b>Early Morning Registration</b>                                                                      |
| 08:00–08:05 | <b>Welcome Address</b><br>S.M. Rupprecht, <i>Chairperson</i>                                           |
| 08:05–08:10 | <b>Emergency and Safety Briefing</b><br>Birchwood                                                      |
| 08:10–08:20 | <b>SAIMM Presidential Opening Address</b><br>M.I. Mthenjane, <i>Exxaro Resources Ltd, South Africa</i> |
| 08:20–09:00 | <b>Scene setting</b><br>J.G. Taylor, <i>MineRP, South Africa</i>                                       |
| 09:00–10:00 | <b>Drilling Session 1</b><br>K. Landey, <i>Drill Consultant, South Africa</i>                          |
| 10:00–10:15 | <b>Mid-Morning Refreshments</b><br>(Review Poster Submissions)                                         |
| 10:15–10:45 | <b>Drilling best practice</b><br>K. Landey, <i>Drill Consultant, South Africa</i>                      |
| 10:45–12:30 | <b>Blasting</b><br>S. Tose, <i>Global Manager - Mining Optimisation, AEL, South Africa</i>             |
| 12:30–13:30 | <b>Lunch</b>                                                                                           |
| 13:30–15:00 | <b>Equipment selection</b><br>H. Fourie, <i>Mining Engineer, FTY Mining, South Africa</i>              |
| 15:00–15:15 | <b>Afternoon Refreshments</b>                                                                          |
| 15:15–16:00 | <b>Equipment costing</b><br>H. Fourie, <i>Mining Engineer, FTY Mining, South Africa</i>                |

### Day 2 – Thursday 5 September 2019

|             |                                                                                                                                                                                                                                                                 |
|-------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| 07:00–08:00 | <b>Early Morning Registration</b>                                                                                                                                                                                                                               |
| 08:00–08:05 | <b>Emergency and Safety Briefing</b><br>Birchwood                                                                                                                                                                                                               |
| 08:05–09:30 | <b>Geotech</b><br>B.W. Motlhabane, <i>University of Johannesburg, South Africa</i> <ul style="list-style-type: none"><li>• Guidelines</li><li>• High Wall Stability</li><li>• Monitoring, M. Bornman, <i>University of Johannesburg, South Africa</i></li></ul> |
| 09:30–10:00 | <b>Mid-Morning Refreshments</b><br>(Review Poster Submissions)                                                                                                                                                                                                  |

|             |                                                                                                                                                                                  |
|-------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| 10:00–12:30 | <b>Haul road</b><br>A. Visser, <i>University of Pretoria, South Africa</i> <ul style="list-style-type: none"><li>• Design</li><li>• Construction</li><li>• Maintenance</li></ul> |
| 12:30–13:30 | <b>Lunch</b>                                                                                                                                                                     |
| 13:30–14:00 | <b>Contract mining</b><br>S.M. Rupprecht, <i>University of Johannesburg, South Africa</i>                                                                                        |
| 14:00–15:30 | <b>Technology advances</b> <ul style="list-style-type: none"><li>• Fatigue Management</li><li>• Proximity Detection</li><li>• Drones</li></ul>                                   |

### Poster Presentations

**The use of the bulk push dozing method's techniques in an open pit surface mine for waste rock removal to reduce operating costs**

I. Sedumedi and P. Nelwamondo, *University of Johannesburg, South Africa*

**Optimum pit selection for K04 satellite kimberlite pipe at De Beers Venetia mine: A case for optimum pit selection during transition phases**

E. Mushongahande, *De Beers Group, South Africa*

**The consequences of inadequate upfront consultation with communities on surface mining operations (a critical review)**

P. Nelwamondo and M. Mpanza, *University of Johannesburg, South Africa*

**Mining earth moving equipment optimization**

RAN Ramalepe and SM Rupprecht, *University of Johannesburg, South Africa*

**Truck tub factors and loads per hour - A case study of an open cast coal mine**

B. Genc, *University of the Witwatersrand, South Africa*

**Characterization of Decision Making in the South African Mining Industry**

A.G. Moyo and S.M. Rupprecht, *University of Johannesburg, South Africa*