

7TH YOUNG PROFESSIONALS CONFERENCE

29-30 SEPTEMBER 2026
ROYAL MAJESTIC HOTEL ROSEBANK, JOHANNESBURG

The role of youth and young professionals in Future Proofing African Mining, Today

ECSA and SACNASP Validated CPD Activity Credits = 0.1 per hour attended



YOUNG PROFESSIONALS CONFERENCE 2026 – PRELIM PROGRAMME

Day 1, Tuesday 29 September 2026

- 08:00 – 09:00 Registration Opens & Early Morning Refreshments
- 09:00 – 09:05 Safety Briefing Venue Official
- 09:05 – 09:10 Welcome and Opening by the YPC Council Chairperson
T. Ndlela
- 09:10 – 09:25 SAIMM Presidential Address
T. Mmola

Session 1

- Session Chair: T Ndlela, YPC Council Chairperson and Tokyo Ndlela Attorneys
- 09:25 – 09:55 **Keynote address: The power and purpose of a dream**
P. Mantlhakga, Leadersphere Institute, South Africa
 - 09:55 – 10:15 **Future Proofing Mine Water Monitoring with AI and Earth Observation**
M. B Smith, University of the Witwatersrand, South Africa
 - 10:15 – 10:35 **Investigating the distribution of microscopic fractures and developing brittleness index of the Proterozoic and Phanerozoic sandstones**
P. Pitso, F. Sengani, F. Mulenga, University of South Africa
 - 10:35 – 10:55 **Microbes at Work**
P. M Pale, S. Mbedla, University of Johannesburg, South Africa
 - 10:55 – 11:05 Sponsor Presentation, Hatch **HATCH**
 - 11:05 – 11:25 **Mid-Morning Refreshments**
 - 11:25 – 11:40 From qualification to influence: Building career pathways through mentorship, technical excellence and intentional leadership
J. Mvita, SAIMM Young Professionals, Council
 - 11:40 – 12:00 **A root cause analysis of lost blast occurrences in South African Underground gold mining: beyond technical failures to supervisory and systemic deficiencies**
R. Oliphant, University of Johannesburg, South Africa
 - 12:00 – 12:20 **Developing a Framework for Young Consulting Engineers to Future-Proof the African Mining Industry**
N. Rabothata, M. Mutshaeni, G. Mulder, B. Moolman, Hatch, South Africa
 - 12:20 – 12:40 **Re-Designing Mining Systems as Integrated Ecosystems: Operationalising South Deep's Mine Orchestrator Model**
T. Dlamini, T.G. Gwanzura, Goldfields South Deep Mine, South Africa
 - 12:40 – 13:40 **Lunch**

Session 2

- Session Chair – J. Mvita, SAIMM Young Professionals Council
- 13:40 – 14:00 **Towards environmentally sustainable critical mineral extraction in Africa: Sustainable mining and processing methods and governance frameworks in the context of rising global ai demand**
D.T. Vengesai, University of Zimbabwe, Zimbabwe Institution of Engineers
 - 14:00 – 14:20 **Machine learning-driven texture quantification of chromite ore for improved comminution prediction**
A.Y. Nke, D. Chetty, Y. Thakurdin, Mintek, South Africa
 - 14:20 – 14:40 **Solid-State reduction of South African ug2 chromite in a hydrogen-methane gas system**
K.E. Lekgau, X.C. Goso, M. Khama, P. den Hoed, E. Matinde, Mintek, South Africa
 - 14:40 – 15:00 **Evaluating the effects of paper-based reporting systems on safety and data management in South African mines**
T.J. Moahloli, L. Ramokonyane, University of Johannesburg, South Africa
 - 15:00 – 15:20 **Afternoon Refreshments**
 - 15:20 – 15:40 **Review of spontaneous combustion in coal discard dumps**
M.I. Ndlazi, M. Mekgwe, M.Mpanza, University of Johannesburg, South Africa
 - 15:40 – 16:00 **Developing new sustainable demand streams for Africa's minerals through Youth-Driven innovation to Future-Proof Africa's mining sector**
E. Msimango, SAIMM YPC Committee Member: Marketing Portfolio, South Africa
 - 16:00-16:20 **Leveraging remote sensing and machine learning for enhanced water quality management**
M.B. Smith, University of the Witwatersrand, South Afric
 - 16:20 End of Conference Day 1

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- 09:05 – 09:10 Welcome and Opening
K. Banda, SAIMM CPD Committee Chairperson

Session 3:

Session Chair – K. Banda, SAIMM CPD Committee Chairperson

- 09:10 – 09:30 Advancing gender equity through skills development and inclusive practices in the South African mining industry
G. Noge, C. Mapaling, Optentia Research Unit, North-West University, Vanderbijlpark, South Africa
- 09:30 – 09:50 Skills needs in an occupation at risk: Surveyor assistants at surface coal mines in Mpumalanga
V. Naamdheew, P. Ramsarup, University of the Witwatersrand, South Africa
- 09:50 – 10:10 Development of a Low-Cost Hierarchical Biochar Derived from Agricultural Waste as a Support Catalyst for the Direct Methanol Fuel Cell
Y. Tsengwa, N. A. Mojapelo, N. S. Seroka, L. Khotseng, University of the Western Cape, South Africa
- 10:10 – 10:30 Simulation-Based optimization of flotation circuit performance
A. Saikkonen, M. Ball, Metso OYJ, Finland
- 10:30 – 10:50 Mid-Morning Refreshments
- 10:50 – 11:10 Development of a dynamic simulation model for the decarburisation of high-carbon ferromanganese using factsage™
H.J.Vermaak, G. Reynolds, Mintek Pyrometallurgy Division, South Africa
- 11:10 – 11:30 Leveraging data from collision prevention systems: A value driver tree case study
T. B Mapaire, Wits Mining Institute, South Africa
- 11:30 – 11:50 Social responsibility in the minerals industry
D. P Mathebela, University of Johannesburg, South Africa

Session 4:

Session Chair – T. Mapaire, Vuuma

- 11:50 – 12:10 Machine learning-driven texture quantification of chromite ore for improved comminution prediction
A.Y. Nke, D Chetty, Y Thakurdin, Mintek, South Africa
- 12:10 – 12:30 Bridging the strategic-operational divide: Quantifying the economic impact of lost blasts and the role of digital short interval control in tabular mining
T. T Mthembu, M. I. Mabala, School of Mining Engineering, University of the Witwatersrand, South Africa
- 12:30 – 13:30 Lunch
- 13:30 – 13:50 Membrane distillation treatment of acid mine drainage: Characteristics and mechanism of membrane fouling
C. Kgole, J. Baloyi, R. Mbhele, V. Masindi, CSIR, South Africa
- 13:50 – 14:10 Coal mining in South Africa
G. T. Mabuya, Sasol Mining, South Africa
- 14:10 – 14:30 Selection and design of a suitable reactor to demonstrate the aluminothermic reduction step in the SisAl process at Mintek
M. Netshia, Mintek, South Africa
- 14:30 – 14:50 Future proofing from first contact: Why early-career professionals must lead the redesign of social performance in African mineral exploration
M. M. Phambane, Rio Tinto, South Africa
- 14:50 – 15:10 Close of Conference Afternoon Refreshments