The Southern African Institute of Mining and Metallurgy
Founded in 1894

CONFERENCE
Iron ore and manganese ore metallurgy

5–7 September 2011

Misty Hills, Muldersdrift

BACKGROUND

South Africa has extensive iron ore and manganese ore resources. Globally it is an important producer and exporter of iron ore and manganese ore. South African iron ore supports the local iron and steel industry and South African manganese ore supports the local ferromanganese industry. There are a number of iron ore and manganese ore mines in operation. There are also a number of projects being considered for development, greenfields mines and brownfields expansions of existing mines. The metallurgy of iron ore and manganese ore in South Africa is critical given that most of the deposits require beneficiation to produce saleable products.

OBJECTIVES

This conference will focus on the comminution, beneficiation and agglomeration of iron ore and manganese ore. Comminution will cover crushing, screening and grinding. Beneficiation will cover DMS, gravity concentration, magnetic separation and flotation. Agglomeration will cover pelletising and sintering. The current status of the technologies and equipment employed will be presented as well as future developments. Operators, equipment and technology suppliers and researchers will participate.

WHO SHOULD ATTEND

- Plant managers and metallurgists
- Mining company technical personnel
- Equipment suppliers
- Technology development companies
- Mining industry consultants.
- Mining industry contractors.
- Research and academic personnel.

SPONSORSHIP

Sponsorship opportunities are available. Companies wishing to sponsor or exhibit should contact the Conference Co-ordinator.

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Third Announcement and Preliminary Programme

PRELIMINARY PROGRAMME

Day 1: Monday, 5 September 2011

07:30–08:30 **Registration and Coffee**

08:30–08:40 **Opening Address**
G.V.R. Landman, *President, SAIMM*

08:40–09:20 **Keynote Address: Concentration of Brazilian Itabirites via Froth Flotation**
Prof. Lavindo Lour Filo

MAGNETIC SEPARATION

09:20–09:45 **Maximising the Recovery of Fine Iron Ore using Magnetic Separation**
M. Dworzanowski, *Anglo American Mining and Technology Group Metallurgy*

09:45–10:05 **Process Development for the Marampa Iron Ore Tailings Project, Sierra Leone**
P. Dunn and K. Smale, *Outotec*

10:05–10:30 **Dry Magnetic Beneficiation of Hematite**
P. Ramsaywok and M.K.G. Vermaak, *Exxaro Technology*

10:30–11:00 **Mid-Morning Refreshments**

11:00–11:25 **Selection of Magnetic Drum Separators for Upgrading of Magnetite Ores**
M.J. Flanagan, *MAGQUIP (Pty) Ltd*

11:25–11:50 **An Industrial Comparison Testing between the Longi WHIMS and the original WHIMS at the Lilou Beneficiation Plant, China**
M. Atkinson, *Magnetech*

11:50–12:15 **Application of DebTech MagRoll unit for the upgrading of Kumba Iron Ore Materials**
M. Fofana* and C.B. Masango†*De Beers*, †*Anglo American Kumba Iron Ore (Pty) Ltd*

12:15–13:15 **Lunch**

13:15–13:40 **Upgrading of Sishen Thickener Underflow Slimes Using the SLon High Gradient Magnetic Separator (HGMS)**
D.J. Skosana, *Anglo American, Kumba Iron Ore Limited*

FLOTATION AND SOLID/LIQUID SEPARATION

13:40–14:05 **Iron Ore—a Review of the Flotation Circuits & Reagents**
R. Silva and A. Weber, *FLSmidth Salt Lake City*

14:05–14:30 **Performance Improvements provided by Mintek's FloatStar Advanced Control System on Reverse Flotation of Iron Ore**
B.D.H. Knights, *Mintek*

14:30–14:55 **Tests on the thickening of iron ore tailings at Thabazimbi iron ore mine**
T. Verbeek, *Kumba Iron Ore*

14:55–15:25 **Mid-Afternoon Refreshments**

15:25–15:50 **Flocculation Trials for Kumba Iron Ore**
J. Smit and L. Magidimisa, *Anglo American*

15:50–16:15 **Khumani Iron Ore Mine Water Recovery and Paste Disposal System**
T. Du Toit*, M. Crozier†, G. de Swart‡, and L. de Koning§, **Khumani Iron Ore Mine*, ASSMANG, †*Paste Thick Associates (Wes Tech)*, ‡*GeoTail*, §*ECMP*

COMMINUTION

16:15–16:40 **Optimising Australian Magnetite Circuit Design using IsaMill Technology**
C. Walstra*, J. Twomey†, and K. Barns*, **Xstrata Technology*, †*Xstrata Copper, Ernest Henry Mining*

16:40 **End of Day Summary**

Day 2: Tuesday, 6 September 2011

07:30–08:30 **Registration and Coffee**

08:30–09:10 **Keynote Address: Recent Developments & Applications of the SLon VPHGMS Magnetic Separator**
Dr Z. Dahay, *Outotec*

COMMINUTION

09:10–09:35 **The Influence of the hydro-cyclone in an iron ore milling circuit**
E. Bekker and I. du Plessis, *Multotec*

09:35–10:00 **Dephosphorization Treatment of High Phosphorus Iron Ore by Pre-reduction, Air Jet Milling and Screening Methods**
E. Matinde* and M. Hino†, **Scientific Industrial and Research Development Centre*, †*Hokkaido Polytechnic College*

10:00–10:25 **Revisiting the Energy Laws of Communition**
J. van Schoor, *Kumba Iron Ore*

10:25–10:55 **Mid-Morning Refreshments**

10:55–11:20 **Advanced Process Control on a Secondary Crusher**
E.K. Leeka, *Kumba Iron Ore*

JIGGING, DMS AND AGGLOMERATION

11:20–11:45 **Developments in the Classification of iron ore sinter phase mineralogy through QEMSCAN**
I. Tonžetić* and A. Dippenaar†, **Anglo Research*, †*Kumba Iron Ore*

11:45–12:10 **Dense Medium Cyclones—A Size Based Approach**
J. Bosman, *Pesco*

12:10–13:10 **Lunch**

13:10–13:35 **Deciphering the Densifier**
J. Bosman, *Pesco*

13:35–14:00 **Novel size and shape measurements applied to jig plant performance analysis**
C. Twala, *Kumba Iron Ore*

14:00–14:25 **Application of ragging in Iron Ore Jigging**
T. Motlhamme, *Kumba Iron Ore*

14:25–14:50 **Agglomeration of Sishen Slimes**
A. Dippenaar, *Kumba Iron Ore*

14:50–15:20 **Mid-Afternoon Refreshments**

15:20–15:45 **The effect of size classification on jigging**
T. Mokebe, *Kumba Iron Ore*

15:45–16:10 **Beneficiation of Iron Ore at Khumani**
T. Du Toit and W. Langenhoven, *Khumani Iron Ore Mine, ASSMANG*

16:10–16:35 **Evaluating and Modelling of a Mineral Density Separator (MDS)**
N. Naudé*, C. Aldrich†, L. Lorenzen†, and A.V. Kolesnikov‡, **University of Pretoria*, †*University of Stellenbosch*, ‡*Tshwane University of Technology*

MANGANESE ORE METALLURGY

16:35–17:00 **Characterization of a porous manganese ore from Chile**
C. Bergmann, *Mintek*

17:00 **End of Day Summary**

Day 3: Wednesday, 7 September 2011

07:30–08:30 **Registration and Coffee**

08:30–09:10 **Keynote Address: Iron Ore Beneficiation in Australia and Likely Future Developments**
D. Miller, *Australia*

MANGANESE ORE METALLURGY

09:10–09:35 **The Sintering of Carbonate Ores from the Kalahari Manganese Field**
D.B. Wellbeloved, *Kalagadi Manganese Pty Ltd*

09:35–10:00 **Material Handling Case Study at the United Manganese of the Kalahari Mine**
S. Alexander* and J. Scholtz†, **Taggart Global, LLC*, †*Taggart JHDA*

GENERAL

10:00–10:25 **Quantitative mineralogical analysis of iron ores**
S. Bramdeo, *Anglo American Research*

10:25–10:55 **Mid-Morning Refreshments**

10:55–11:20 **A comparison of Iron Ore Analysis by ICP-OES and XRF**
C. Bergmann, *Mintek*

11:20–11:45 **Highly Efficient Classification with the Introduction of Fine Screening Technology in Iron Ore, with case studies in China, Russia and South America**
N.J. Barkhuysen, *Derrick Corporation*

11:45–12:05 **Description of Non-Intrusive Array-Based Technology and its Application to Iron Ore Processing Flow Measurements**
J. Felix*, Dr C. O'Keefe†, and R. Maron†, **Felix Project Management and Consulting Services*, †*CiDRA Minerals Processing*

12:05–13:05 **Lunch**

13:05–13:30 **Comparison between different primary sampling methods for iron ore**
M. Nel, *Kumba Iron Ore*

13:30–13:55 **Establishing the PFD of a fine Magnetite ore**
J. Rabe, *Kumba Iron Ore*

13:55–14:20 **Beneficiation of low grade fine iron ore (-1 mm) using an AllFlux gravity Separator**
L. Sibiya, *Kumba Iron Ore*

14:20–14:45 **Positioning the quality value chain to manage the processing of lower quality iron ores**
A. Nortje, *Kumba Iron Ore*

14:45–15:10 **Mid-Afternoon Refreshments**

15:10–15:35 **Development of an XRT monitor to determine densities of iron ore particles**
B. Ntsoelengoe, *Anglo American Kumba Iron Ore (Pty) Ltd*

15:35 **End of Day Summary**

REGISTRATION FORM

IRON ORE AND MANGANESE ORE METALLURGY

PLEASE NOTE:
3 CPD credits will be allocated to attending delegates—1 credit for each day

5–7 September 2011 · ***No cancellations will be accepted after 26 August 2011***

TITLE AND INITIALS: .....SURNAME: .....

PREFERRED NAME:..... (for use on name tag)

COMPANY: .....

DESIGNATION: .....

COMPANY VAT REGISTRATION (COMPULSORY—MUST BE COMPLETED) .....

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Please note: Non-members are entitled to free membership of the SAIMM, up to 30 June 2012, for attending this Conference.

REGISTRATION FEES: Prepayment is required for all Registration Fees on or before the date of this event. Delegates who have not paid will not be permitted to attend the conference.

SAIMM MEMBER ❑ STUDENT ❑ COMPANY AFFILIATE ❑ MEMBERSHIP NO.....

NON-MEMBER ❑ STUDENT MEMBERS — KINDLY SUPPLY UNIVERSITY REGISTRATION NO.....

EARLY BIRD REGISTRATION (BEFORE 15 JULY 2011)

SAIMM MEMBER/AUTHOR/COMPANY AFFILIATE: R7 200.00 NON-MEMBER: R7 800.00 STUDENT / RETIRED MEMBER: R2 000.00

REGISTRATION (AFTER 15 JULY 2011)

SAIMM MEMBER/AUTHOR/COMPANY AFFILIATE: R8 100.00 NON-MEMBER: R8 700.00 STUDENT / RETIRED MEMBER: R2 000.00

REGISTRATION—DELEGATES MAY ALSO ATTEND THE CONFERENCE FOR ONE OR TWO DAYS ONLY

ONE DAY: SAIMM MEMBER/AUTHOR/COMPANY AFFILIATE: R3 600.00 NON-MEMBER: R3 900.00

TWO DAYS: SAIMM MEMBER/AUTHOR/COMPANY AFFILIATE: R5 670.00 NON-MEMBER: R6 090.00

PLEASE INDICATE (✓ TICK) WHICH DAY/S YOU WILL BE ATTENDING.

MONDAY 5 SEPTEMBER 2011 ❑ TUESDAY 6 SEPTEMBER 2011 ❑ WEDNESDAY 7 SEPTEMBER 2011 ❑

I am personally responsible for full payment of these fees in the event that my company does not pay the fees.
Contribution to the SAIMM Scholarship Fund R.....This is tax deductible, and tax certificates will be issued
(Information for Scholarship Trust on request)

Please find enclosed a cheque/money order for R.....payable to SAIMM OR Please charge the above amount to:

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KINDLY NOTE:

If replacements are made delegates are asked to advise the SAIMM Secretariat.
Company Affiliates are allowed to send **two** non-members at the member rate.
Cheques must be made payable to The Southern African Institute of Mining and Metallurgy.
No telephone bookings will be accepted. **No cancellations** will be accepted after the closing date.
VAT invoices will be issued to all delegates.
Due to the delay in the postal system it is advisable to fax or e-mail through the registration form before posting.

Our banking details are:
Bank: Standard Bank
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ENQUIRIES TO:

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