

Furnace Tapping 2018 Conference Final Programme

14–16 October 2018, Nombolo Mdhluli Conference Centre, Kruger National Park, South Africa

Sunday, 14 October 2018

14:00–16:30 Early Registration
17:00–20:00 Game Drive and Cocktail

Day 1–Monday, 15 October 2018

07:30–08:30 Early Morning Refreshments and Registration
08:30–08:40 Chairperson's Welcome Address
J.D. Steenkamp, *Mintek, South Africa*
08:40–08:45 Emergency procedures presentation
08:45–09:00 SAIMM Presidential Opening Address
S. Ndlovu, *Immediate Past President, SAIMM*

SESSION 1 Session Chair - Q.G. Reynolds, *Mintek*

09:00–09:35 Keynote Address: Slag carry-over and the production of clean steel
P.C. Pistorius, *Carnegie Mellon University, USA*
09:35–10:00 Wear analysis of tap-holes at two ferrochromium production furnaces
J.D. Steenkamp, *Mintek, South Africa*
10:00–10:25 Reduced metal loss to slag in HC FeCr production - by redesign based on mathematical modelling
S.T. Johansen^{1,2} and E. Ringdalen¹, ¹*SINTEF Industry* and ²*NTNU, Norway*

10:25–10:50 Thermal assessment and identification of wear zones in a blast furnace hearth and tap-holes
H. Ghorbani, M. Al-Dojayli, and K. Chomyn, *Hatch Ltd, Canada*

10:50–11:00 Sponsor Presentation - Trefimet & Neven Matthews
11:00–11:30 Mid-Morning Refreshments

SESSION 2 Session Chair - R. Hundermark, *Anglo American*

11:30–12:20 Improvements to the Anglo Converting Process (ACP) tap-block management
A. Hoosen, M. Sichone, and I. Rambiyana, *Anglo American Platinum, South Africa*
12:20–12:45 Development, installation, and operation of a full-copper, deep-cooled slag tap-block for a six-in-line copper slag-cleaning electric furnace
B.N. Belford¹, P. Conradie¹, and T. Mwanza², ¹*Metix (SMS Group)* and ²*First Quantum Minerals' Kansanshi Mining Plc, South Africa*

12:45–12:55 Sponsor Presentation: DHM Group
12:55–14:00 Lunch

SESSION 3 Session Chair - H. Goosen, *Dango & Dienenthal SA Pty Ltd*

14:00–14:10 Sponsor Presentation: DDSA
14:10–14:35 Measurement of metal temperature during tapping of an industrial FeSi furnace
M. Ksiazek¹, H.M. Hustad², A. Nymo³, J. Holtan⁴, S. Grådahl¹, S. Kaukonen⁵, and M. Tangstad², ¹*SINTEF Industry*, ²*Norwegian University of Science and Technology*, ³*Necto AS*, ⁴*Finnfjord AS* and ⁵*Sapotech, Norway*

14:35–15:00 More health-friendly materials for the tapping area
L.H. Lindstad, *Elkem Carbon, Norway*

15:00–15:25 Non-water-based metal tap-hole cooling – a safer alternative
M.W. Kennedy^{1,2}, A. MacRae³, P. Nos⁴, and F. Olesen⁵, ¹*NTNU, Norway*, ²*Proval Partners, Switzerland*, ³*MacRae Technologies, USA*, ⁴*Termek Technology, Norway*, and ⁵*Elkem Bjølvefossen, Norway*

15:25–15:50 Tapping procedures in silicon production, and the role of female tapping operators
M.B. Folstad¹, M. Tangstad¹, E. Ringdalen², R. Fredriksli³, and S. Dalum³, ¹*NTNU*, ²*SINTEF*, and ³*Wacker Chemicals Norway Holla Metall, Norway*

15:50–16:30 Afternoon Refreshments

Social Programme

17:00–17:30 Game drive pick-up
17:30–18:30 Game drive
18:30–21:00 Conference inner-bush braai
21:00–21:30 Drive back to camp

Day 2–Tuesday, 16 October 2018

07:30–08:30 Registration Opens & Early Morning Refreshments
08:30–08:40 Chairperson's Welcome Address
J.D. Steenkamp, *Mintek, South Africa*

08:40–08:45 Safety Briefing

SESSION 4 Session Chair - W. Banda, *Mintek*

08:45–09:20 Keynote Address: Managing the tap-hole life-cycle at five submerged arc furnaces producing silicomanganese at Transalloys
J.J. Sutherland and J.P. Gous, *Transalloys, South Africa*

09:20–09:45 Phase effects in tap-hole flow – a computational modelling study
Q.G. Reynolds¹, J.E. Olsen², M.W. Erwee¹, and O.F. Oxtoby³, ¹*Mintek, South Africa*, ²*SINTEF Industry, Norway* and ³*CSIR, South Africa*

09:45–10:10 Tap-hole maintenance and management on furnace 10 at Eramet Norway Porsgrunn
J.E. Davidsen and M. Honstad, *Eramet Norway Porsgrunn, Norway*

10:10–10:35 Excavation of SiMn-Furnace
E. Ringdalen and M. Ksiazek, *SINTEF Industry, Norway*

10:35–11:00 Mid-Morning Refreshments

SESSION 5 Session Chair - I. Nolet, *Hatch Ltd*

11:00–11:10 Sponsor Presentation: Hatch
11:10–11:35 Multiphase flow modelling of lancing of furnace tap-holes: validation of multiphase flow simulated in OpenFOAM®
M.W. Erwee¹, Q.G. Reynolds¹, J.H. Zietsman², and P.J.A. Bezuidenhout¹, ¹*Mintek* and ²*University of Pretoria, South Africa*

11:35–12:00 Numerical simulation – a tap-hole refractory design study
D.R. Kreuzer, H.U. Marschall, and C. Wagner
RHI Magnesita, Austria

12:25–12:50 Optimizing tap-hole performance using a risk-based asset management strategy
S. Faux, C. Walker, F. Stober, R. MacRosty, M. Darini, and B. Kargutkar, *Hatch Ltd., Canada*

12:50–13:15 Temperature field at the tap-hole in a manganese furnace – a computational modelling study
J.E. Olsen¹, Q.G. Reynolds², and M.W. Erwee², ¹*SINTEF Industry, Norway* and ²*Mintek, South Africa*

13:15–13:40 Tap-hole opening: Advances and improvements
D. Morales, C. Morales, and S. Nuñez, *Trefimet S.A., Chile*

13:40–14:40 Lunch

Workshop

14:50–17:00 Workshop Facilitator
W. Bam, *Stellenbosch University, South Africa*