Infacon XV: International Ferro-Alloys Congress—Programme—Monday 26 February 2018

08:00–08:20 01 - Plenary — Rodney Jones
Welcome & Safety Announcement, Rodney Jones & Human Eric

08:20–08:35 Address by SAIMM President: Selo Ndlovu

08:35–09:20 Plenary—Changing nickel and chromium steel markets, Heinz Pariser

09:20–10:00 Plenary—Climate change: threats, realities, and promises, Bob Scholtes

10:00–11:00 MORNING TEA BREAK

11:00–11:25 Fluxing of South African chromite ore with co-lemaitite
M.W. Erwee, L.J. Geldenhuys, M.B. Stefane, and M. Masapa

11:25–11:45 Microstructure analysis of the slag of refined ferrochrome obtained using a new reducing agent - aluminium-silicon-chrome
S. Basarab, A. Basarab, Y. Shabanov, A. Basasnova, and Ye. Makhambetov

11:45–12:05 Chromium recovery in an ore-smelting electric furnace
O.V. Zaykulin and V.I. Zhuroiev

12:05–12:25 Dissolution and reduction of chromite ores, and the associated implications for processing
M. Erwee, I.J. Geldenhuys, M.B. Sitefane, and M. Masipa

12:25–13:25 LUNCH

03 - FeCr Fundamentals - Slag
03:00–03:15 Reduction of chromium oxide and ore by methane-constained gas mixtures
N.M. Anarci, I. Solheim, B. Sørensen, E. Ringdalen, and O. Østervold

03:15–03:30 Reduction of Kemi chromite with methane
M. Leikta, P. Taskinen, and R.H. Eric

03:30–03:45 Novel-assisted direct reduction of Fe-Cr containing slag, and the associated implications for processing
S. Splan, P. Deux, and A. Brehm

03:45–04:00 Determination of degree of metallization of prereduced chrome with image and Rietveld analysis
T. Leino, P. Taskinen, and R.H. Eric

04:00–04:15 A new approach to improve the strength of chrome pellets

04:15–04:30 New developments in the fluxing of chrome ore
J. V. Durr, P. Taskinen, and V. I. Zaykin

14:00–14:15 Influence of the power supply on the behaviour of DC plasma arcs — a modelling study
J.E. Olsen and B. Panjwani

14:15–14:30 Design and sizing of combustion chamber for energy recovery and oxidation of polycyclic aromatic hydrocarbons (PAH)
B. Panjwani, W. Ojala, M. Ravn, E. Myhara, and M. Kadkherabaghi

14:30–14:45 Symmetry of electric operating modes of three-phase electric arc furnaces according to the harmonic spectrum
J.H. Zietzmann, A. Stein, and W. Pretorius

14:45–15:00 Evaluation of ore pre-heating with fluid-bed technology and innovative furnace feeding
P. Weber

04 - FeCr Direct reduction 2
04:30–04:45 The effect of Mg and Al impurities on the carburization of chrome by Ar-Ch4-H2 gas mixtures
V. Cangaufer, H.J. Svennum, and L. Kolbensen

04:45–04:55 Using CaF2 content on viscosity and structure of MnO-SiO2-MgO-CaF2 and CaO-SiO2-MgO-CaF2 systems
H. Kaffash and M. Tangstad

04:55–05:10 Estimation of the impact of reducing filter drag in a ferro-alloy furnace baghouse
L. Zandberg, B. de Mantert, L. Raath, and L. von Benecke

15:00–15:15 Influence of the powder supply on the behaviour of 1500 and 1650°C DC plasma arcs — a modelling study
J.E. Olsen and B. Panjwani

15:15–15:30 Symmetry of electric operating modes of three-phase electric arc furnaces according to the harmonic spectrum
J.H. Zietzmann, A. Stein, and W. Pretorius

15:30–15:45 New insights into Cr(VI) related aspects associated with FeCr production

15:45–16:00 Meeting the environmental targets for new ferrochrome processes in China with a sustainable Outotec process
T. Hami and S. Ren

16:00–16:15 The impact of reducing filter drag in a ferro-alloy furnace baghouse
L. Zandberg, B. de Mantert, L. Raath, and L. von Benecke

16:15–16:25 Mass and energy balances in furnace design and operation
H. Kötze, Ö. Demir, and B. Nourse

16:25–16:45 State of the art ore pre-heating with fluid-bed technology and innovative furnace feeding
P. Weber
Infacon XV: International Ferro-Alloys Congress — Programme: Tuesday 27 February 2018

08:00-08:10
Welcome & Safety Announcement, Isabel Geldenhuys

08:10-08:50
08:10-08:20 Plenary—European waste to product concepts — iron-based alloys from electric arc furnaces
S. Friedrich, B.S. Kakalai, H. Lucarz, M. Klieseke, and D. Offerthaler

08:20-08:30 Presentation by Gold Sponsor, Furncor

08:30-08:40 Plenary—Tariff developments for electricity-intensive industry in South Africa, C.S. Mahony and J.M. Baartman

08:40-09:10
MORNING TEA BREAK

09:10-10:00
Will the envisaged stainless steel growth rate rattle the chromium oxide market, and what can South Africa contribute? (by invitation)
N.A. Baraza, J.J. Erasmus, and M.J. Freeman

10:00-10:30
A summary of the industrial use of water sprays to suppress fume emissions during the production of FeMn alloys

10:30-10:55
Continued production of steel in the electric furnace, and the role of renewable energy
J. Kuner, R. Köng, E. Floch, and H. Otterdoom

10:55-11:15
The Norwegian Ferroalloys Producers Research Association (FFF)
A.N. Välers, A. Valderstaard, and M. Kåkhdhoberg

11:15-11:35
The effect of water vapour on fume formation in a SiMn alloy system
Y. Ma, E. Moosavi-Khonsari, I. Kero, and G. Tranell

11:35-11:50
LUNCH

11:50-12:40
19 - Furnaces 1 — Nic Dawson

20 - Furnaces 2 — Matt Cramer

21 - Mn Research and Production — Lloyd Nelson

22 - SiMn/Fem Fundamentals — Gabriella Tranell

23 - Mn Fundamentals — Guven Akdogan

24 - Mn Safety — Hjigard Rademeyer

25 - SiMn/Fem Operations 1 — Thabo Nzima

26 - SiMn/Fem Operations 2 — Chris Hockaday

27 - Silicon 1 — Eli Ringdalen

28 - Silicon 2 — Sean Gaal

12:40-13:05
Open-bath AC and DC smelting: A focus on FeCr
H.J. Otterdoom, M.N. Körke, and R. Noethemann

13:05-13:25
High-carbon ferrochromium melting in a DC furnace: Snare the small stuff and stop smelting
H.J. Otterdoom and E. Floch

13:25-13:45
A critical comparison of FeCr and FeMn submerged arc fume melting processes: which improvements can be exchanged between technologies?
P.M. Coex and G. Nordström

13:45-14:05
SiMn / FeMn Fundamentals — Gabriella Tranell

14:05-14:35
Afternoon tea break

14:35-15:00
The benefits of lifecycle optimization through continuous improvement and a reliability-centred maintenance approach
P. Becuendermuth and S.J. Gound

15:00-15:20
Restoration of a ferro-alloy plant after a fire and force majeure conditions
A. Malazhrig, Y. Kaya, S. Kolivanov, and S. Saveliev

15:20-15:40
Phosphorus control in ferrochromium production - a different approach
S. Mahara, B. Bisesas, and A.S. Reddy

15:40
CLOSE

16:30-17:00
Bus to Kirstenbosch leaves from Conference Centre

17:00-18:30
Social function at Kirstenbosch Botanical Gardens

18:30
Dinner and entertainment at Myo’s Restaurant in Kirstenbosch Botanical Gardens
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08:00-08:10 31 - Plenary — Quinn Reynolds
Welcome & Safety Announcement, Quinn Reynolds

08:08-08:50 Plenary—Sustainability and circular economy – why and how for ferro-alloy manufacturing, R.H. Eric

08:50-08:55 Presentation by Gold Sponsor, Raposo Energy

08:55-09:00 Plenary—Paradigm shift to electrolytic production, A. Kauverdrak

09:00-10:10 MORNING TEA BREAK

10:10-10:35 Refining of siliconmanganese alloy by the addition of Si alloy: a case study
A. Biswas, O.U. Kapure, and N. Sahu

10:35-10:55 Thermodynamic database of a ferro-alloys system and its application to the refining of ferromanganese alloys

10:55-11:15 Dephosphorization of manganese-containing oxide melts

11:15-11:35 Reducing dephosphorization in ferro-alloy and stainless steel production
Wenhe Wu, Haijuan Wang, and Haowen Luo

11:35-12:00 LUNCH

12:35-13:00 Primary study on medium- and low-carbon ferromanganese production by blowing CO2-O2 mixtures in a converter
Hejiang Wang, Cheng Li, Bo Song, Shaojun Chu, Jiaqian Zhang, and Jing Li

13:00-13:20 Material properties of manganese ferro-alloy products
Dongseok Song, Hongsik Lee, Haechang Jo, and Markus Enrico

13:20-13:40 Structural evolutions during cooling of manganese alloys, and cooling rate effects
J. Montagnon, C. Gouny, A. Soller, C. Dubois, and P. Miny

13:40-14:00 The degree of manganese reduction from ores in blast-furnace ferromanganese smelting at JSC ’Satka Iron Smelting Works’
A.V. Zhdanov, and L.I. Leontiev

14:00-14:30 AFTERNOON TEA BREAK

14:30-14:55 Ore smelting in high-carbon ferromanganese production: It works in practice, but does it work in theory?
T. Coetsee

14:55-15:15 Comparing electrical and carbon combustion based energy technologies for the production of high-carbon ferromanganese: A literature review
N.A. Silhoten, W.G. Barn, and J.D. Steenkamp

15:15-16:00 46 - Closing Session and Announcement of Venue for Infacon XVI
Human Eric and Rodney Jones

16:00 Close
Whatever our clients envision, our engineers can design and build. With over six decades of business and technical experience in the mining, energy, and infrastructure sectors, we know your business and understand that your challenges are changing rapidly. We respond quickly with solutions that are smarter, more efficient, and innovative. We draw upon our 9000 staff, with experience in over 150 countries, to challenge the status quo and create positive change for our clients, our employees, and the communities we serve.

Established for 25 years, providing 24-hour service to the smelter industries and furnace design houses of the world, Furncor welcomes your business. Having more than 3500 square metres of workshop facilities, allows us to fabricate, machine, weld, and assemble components manufactured by Furncor. Our service covers all the requirements from design to installation, with a ISO 9001 2015 quality management system certified by the South African Bureau of Standards to ensure traceability in supplying best quality and service. As a leading furnace copper component repairer and supplier of new components, we can provide best price options linked to best quality and support.

Ripasso Energy is a Swedish cleantech company founded in 2008 to further develop the Stirling technology’s outstanding ability to convert heat energy into electricity. The company offers different solutions for power generation at record low prices, compared to other climate-smart and sustainable alternatives. Ripasso Energy’s Stirling engine has an unofficial world record in converting solar energy to electricity with close to twice the efficiency of competitive technologies. The company is listed in Sweden (NGM Nordic MTF) and can also be traded at Börse Stuttgart in Germany.

Dneprohydromach is one of the world leaders providing integrated engineering, manufacturing, and start-up services in the area of hydraulic tapping equipment for blast, ferro-alloy, and non-ferrous furnaces, with over 300 successful installations in 15 countries. Product range also includes designing and manufacturing of complete sintering machines and various non-standard equipment based on customers’ technical specifications.

W.L. Gore & Associates Inc. As the inventor and leading supplier of PTFE membrane filtration products, Gore is launching a brand new product for the ferro-alloy industry. The new GORE® Low Drag Filter Bag maximizes furnace evacuation through your existing off-gas systems by reducing resistance to airflow. This breakthrough technology will reduce your bag-house’s operating costs by reducing fan energy consumption.

RHI Magnesita is the result of the combination of RHI and Magnesita to form the global leading supplier of high-grade refractory products, systems, and services, which are indispensable for industrial high-temperature processes exceeding 1200°C in a wide range of industries, including steel, cement, non-ferrous metals, and glass, among others.

Valvedt Group consists of Valvedt Technology Ltd, Valvedt Heavy Industries Ltd, and associated partners. Valvedt Group is a world-leading producer of equipment for submerged arc furnaces. Our experience and know-how has been established from serving the industry for more than six decades. A complete supplier to the ferro-alloy industry.