**Tu6 - Management of ironmaking by-products 2**

In-plant recycling of dust and sludge from blast furnaces and steel-making converters
Joachim von Schéele, Linde AG, SWEDEN
Sam Marklund, Outokumpu Technology AB, SWEDEN

The new OxyCup shaft furnace plant of ThyssenKrupp Stahl: Start-up and first results
Michael Peters, Peter Schmölle, Klaus Kesseler, ThyssenKrupp Stahl AG, GERMANY

Recycling of steel-making residues with the PRIMUS process at PRIMOREC S.A.
Thomas Hansmann, PRIMOREC S.A, LUXEMBOURG

**Tu7 - Life extension of blast furnace 1**

Advanced carbon refractory blocks for hearth wall lining: Properties and wear resistance
Jörg Mittag, SGL CARBON GmbH, GERMANY

Data mining applied to identifying factors affecting blast furnace stave heat loads
Paul Zulli, BlueScope Steel Limited, AUSTRALIA
David Stirling, University of Wollongong, AUSTRALIA

The third campaign of the Whyalla No.2 blast furnace
John Tsalapatis, Robert Keil, Onesteel, AUSTRALIA

Hearth wearing in Siderar blast furnace No. 2
Oscar Lingiardi, Velo Eduardo, Jose Zubimendi, Raul Ametrano, Fernando Giandoménico, Norberto Gonzalez, Siderar, ARGENTINA

Rebuild of blast furnace A at voestalpine Stahl Linz GmbH
Alfred Ferstl, Günther Brunnbauer, Rainer Walter Kastner, Willi Stastny, Herbert Mayrhofer, Herbert Schöllhammer, Hannes Nogratnig, voestalpine Stahl Linz GmbH, AUSTRIA

**Tu8 - Environmental control in ironmaking: coke plant, sintering plant**

Modelling the changes in carcinogenic load on coke oven workers due to automation and changing work schedules
Johan van de Vijver, Sidmar nv - Arcelor, BELGIUM

New technical possibilities for reduction of coke oven emissions
Michael Hein, Friedrich Huhn, Frank Rossa, Deutsche Montan Technologie GmbH, Heinz Opdenwinkel, Joachim Strunk, Deutsche Steinkohle AG, GERMANY

Performance of energy saving and environmental control in sinter plant of China Steel
Gwo-Ching Lee, Chun-Hui Liou, China Steel Corporation, REPUBLIC OF CHINA

YSX process integrated environment protection at ThyssenKrupp Stahl AG
Gunnar Still, ThyssenKrupp Steel AG, Verena Schulz-Klemp, Stahlinstitut VDEh, GERMANY

Improvement of the environmental situation of blast furnace BF 4 at Rogesa, Dillingen-Germany
Walter Hartig, Horst Zewe, AG der Dillinger Hüttenwerke, GERMANY, Patrick Leyser, Paul Wurth, LUXEMBOURG
Franz Reufer, Paul Wurth, Germany
Tu9 - Preparation and handling of iron ores; sintering, pelletizing

Development of coating granulation sintering process for improving productivity and reducibility
Nobuyuki Oyama, Hideaki Sato, Kanji Takeda, Tatsuro Ariyama, JFE STEEL CORP., JAPAN

Evolution of sinter quality at Tata Steel
U.S. Yadav, Amarendra Ranjan, Binod Das, Santamu Ghosh, Tata Steel, INDIA

Extension of sinter pallet width for higher production
Geun-Sik Moon, Gwangyang works of Posco, KOREA REPUBLIC

Mineralogical investigations of sinter iron ores and sinter
Johan Zirngast, Manfred Zahn, voestalpine Stahl Donawitz, Heinrich Mali,University of Leoben, AUSTRIA

Tu10 - Life extension of blast furnace 2

Practices and design for extending the hearth life in the Mittal Steel Company blast furnaces
Karl Spaleck, Martiens Schoeman, Warren Seegers, Mittal Steel, SOUTH AFRICA
James Bobek, Wendell Carter, Pinakin Chaubal, Mittal Steel Ispat Inland, UNITED STATES

Improvement in blast furnace operating results by re-profiling the furnace stack by robotic shotcreting

Reline of blast furnace No. 6 at Corus Ijmuiden, the Netherlands
Johan van Ikelen, Ron Molenaar, Corus Ijmuiden, Egenolf van Stein Callenfels, Danieli Corus, THE NETHERLANDS

New hearth lining direction at Salzgitter Flachstahl blast furnace B
Jürgen Pethke, Tatjana Stisovic, Salzgitter Flachstahl GmbH, GERMANY
Peter Sylven, Graftech International Ltd, UNITED STATES

Blast Furnace hearth lining technology for long-life campaign
Volker Hille, R Heber, Didier-M&P Energietechnik GmbH (DME), R Rockstroh, Salzgitter Flachstahl GmbH (SZFG), GERMANY

Tu11 - Coal blending practice

Control of oven wall pressure by blending
Merrick Mahoney, Jeff Keating, Susan Woodhouse, BHPBilliton, Sid McGuire, Greg Lingard, BHP Billiton Mitsubishi Alliance, David Jenkins, CSIRO, AUSTRALIA

Mechanism of coal grain swelling within plasticity range
Aleksander Karcz, Andrezj Strugala, Academy of mining and metallurgy, Bartosz Mertas, Marek Sciazko, Institute for Chemical Proc. of Coal, POLAND

Coal blend optimisation
Paul Pernot, Denis Vogt, Centre de Pyrolyse de Marlenau (CPM), FRANCE

Oil addition to the coal blend at the Ruukki coking plant
Olavi Kerkkonen, Ruukki Production Raahe Steelworks, FINLAND
Tu12 - Preparation and handling of iron ores; sintering, pelletizing

Tangible benefits from recycling of solid waste through sinter
U.S. Yadav, Amarendra Ranjan, Binod Das, Santanu Ghosh, Tata Steel, INDIA

Use of selective granulation technology to enhance the performance of marra mamba type ore in the sintering process
Tetsuzo Haga, Masanori Nakano, S. Kasama, Nippon Steel Corporation, JAPAN, Robin Bergstrand, Allan Waters, Robe River Limited, AUSTRALIA.

The reduction degradation property of iron ore sinter at Raahe Steelworks
Kimmo Kinnunen, Kyösti Heinänen, Ruukki Production, Raahe Steelworks, FINLAND

Revolutionary new low cost pellet fines removal system
David W. Hendrickson, University of Minnesota Duluth, UNITED STATES

We1 - BF hearth management and casting practice - Slag and hot metal quality

The use of a CFD model for understanding the internal conditions in a blast furnace hearth
D. (Frank) Huang, Pinakin Chaubal, Mittal Steel, Ispat Inland Inc, Fan Yan, Chen Zhou, Purdue University Calumet, UNITED STATES

Automation system of casthouse at Gwangyang BFS
Jin-Sik Choi, Posco European Office, GERMANY
Il-Hak Kim, Bon-Rae Cho, Posco, Gwangyang Works, Jee-Young Choi, Posco Head Office, KOREA REPUBLIC

Hearth management at Sidmar for an optimal hot metal and slag evacuation
Roland Sergeant, Luc Bonte, Katleen Huysse, Sidmar-Arcelor, BELGIUM

Optimized tap hole operation at BF 4 in Dillingen
Hans Vondruska, Walter Hartig, AG der Dillinger Hüttenwerke, Hans Jochen Grisse, Otto Kreutz, TMT, GERMANY, Claude Boveding, TMT, LUXEMBOURG

Optimised casthouse operation at ThyssenKrupp Stahl - Realised improvements and future potentials -
Michael Peters, Peter Schmöle, Peter Rüther, ThyssenKrupp Stahl AG, GERMANY

Recovery from high silicon operation at the Port Kembla blast furnaces
Robert J Nightingale, Nicholas Di Giorgio, John G Mathieson, Sheng J Chew, Bryan D Wright, BlueScope Steel, AUSTRALIA

We2 – Coke oven repair techniques and life prolongation

The application of the coke plant age determination process at Dofasco
Neil Lincoln, Robert Carlin, Ted Todoschuk, Dofasco Inc., CANADA.
Jean Marc Leroy, Jean Paul Gaillet, Centre de Pyrolyse de Marienau, FRANCE

Evaluation of coke oven refractory damage with the Videofil® machine
Fabrice Nivoix, Jean-Paul Gaillet, Centre de Pyrolyse de Marienau (CPM), FRANCE

Repairing of hot coke oven batteries - one way to maintain the production capacity - SSAB-Plant, Sweden
Henrik Vuorinen, SSAB Tunnplät AB, SWEDEN
Werner Hippe, Martin Reinke, Uhde GmbH, GERMANY

Technical Degradation Index (TDI) – tool for coke oven life prolongation
Aleksander Sobolewski, Institute for Chemical Proc. of Coal, POLAND
Ludwik Kosyrczyk, Institute for Chemical Proc. of Coal, POLAND
Changes in quality of dense silica bricks after 20 years of operational exposure in a heating wall of coke oven battery

Leopold Vasica, Consultant, Ostrava, CZECH REPUBLIC

We2:5

We3 - Novel reduction processes

Continuous improvement of DRI technology in the mittal steel company
George Tsvik, Ali Farhadi, Ispat Inland, Inc., UNITED STATES
Ismael Sandoval, Ispat Mexicana, MEXICO
Uwe Braun, Ispat Hamburger Stahlwerke, GERMANY

New developments in the field of fine ore based iron and steelmaking:
Circore®, Circofer®, Hlsmelt®
Dirk Nuber, Andreas Orth, Heinz Eichelberger, Outokumpu Technology GmbH, GERMANY

Optimization of the design and operating parameters of shaft furnaces for DRI/HBI production
Yakov Gordon, Hatch, CANADA
Vladimir Shvidkii, Yuriy Varoshenko, Ural State Technical University, RUSSIA

Design and engineering features of the first Tecnored industrial plant
José Noldín Jr, Pedro Costa, Marcos Contrucci, TECNORED, BRAZIL
Ian Cox, Tom Cellissen, Koen Meijer, Danieli Corus, THE NETHERLANDS

We3:1

We3:2

We3:3

We3:4

We4 - Modern BF control techniques

Expert system controlled blast furnace operation - The next step
Dieter Bettinger, Bernhard Schürz, Klaus Stohl, VAI GmbH & Co, AUSTRIA,
Olaus Ritamäki, Ismo Pitirainen, VAI Finland Oy, FINLAND

Blast-furnace.net - a public web-based tool to be used in education and joint solving of problems for students, researchers and blast furnace craftsmen
Rutger Gyllenram, Kobolde & Partners AB, SWEDEN
Bo Sundelin, SSAB Oxelösund AB, Margareta Andersson, KTH, SWEDEN

Blast furnace thermal control, and aerodynamic monitoring using advanced signal processing methods, in Corus UK
Peter Warren, Trevor Bell, Corus, UNITED KINGDOM

The ZAP model: a new method for the on-line determination of the blast furnace cohesive zone
Guillaume Lesoin, Jean-Marie Libralesso, SOLLAC, FRANCE
Dominique Sert, ARCELOR RESEARCH SA, FRANCE

Quantification of liquid metal flow in Blast Furnace hearth
B S Desai, S K Ajmani, R V Ramna, M Narsimha, Tata Steel, INDIA

We3:5

We4:1

We4:2

We4:3

We4:4

We4:5

We5 - Modern process control techniques in coke-making

Design and operational experience with the state-of-the-art control system of the new coking plant Schwelgern
Bernd Wemhöner, Udo Kurbjuhn, KBS GmbH,
Christian Schubert, ABB Process Industries GmbH, GERMANY

Service and monitoring of the coke oven battery at HKM with an integrated Process-Management-System on IT basis
Christian Kanty, HKS Systemtechnik,
Leo Nelles, Heinz-Bernd Beckmann, Willy Pesy, Hüttenwerke Krupp Mannesmann GmbH, GERMANY
Giprokoks experience in terms of creating the integrated process control system at coke oven batteries of JSC «Severstal»
Yuriy Zingerman, Konstantin Lavrov, GIPROKOKS, UKRAINE
Mark Gorenbukh, Technika M, UKRAINE,
Aleksandr Gabov, Nikolay Ershov, Nikolay Nikitin, JSC "Severstal", RUSSIAN FEDERATION

Coke making technology from VAI Finland - Good for the environment, good for quality
Ismo Piirainen, Olaus Ritamäki, VAI Finland Ltd, FINLAND

Coke plant machines automation in Serémange and Dunkerque
N. Sibille, Serémange Coke plant, Sollac, FRANCE
J. Andre, Dunkirk Coke plant, Sollac, FRANCE

We5:3

We5:4

We5:5

We6 - New cokemaking and ironmaking technologies

Development of waste plastics recycling process using coke ovens
Kenji Kato, Nippon Steel Corporation, JAPAN
Seiji Nomura, Koichi Fukuda, Hiroshi Uematsu, Nippon Steel Corporation, JAPAN

We6:1

New process of co-coking of waste plastics and blend coal
Hong-qiang Liao, Peng Zhao, Ya-bin He, Shougang Technical Research Institute,
Gang-wei Yu, Ji-ju Cai, Northeastern University,
Bao-qing Li, Institute of Coal Chemistry Chinese Academy of Sciences, CHINA

We6:2

The phoenix of non recovery cokemaking and its rapid flight
Hardarshan Valia, Coal Science Inc., UNITED STATES

We6:3

Development of innovative cokemaking process (SCOPE21)
Isao Sugiyama, Kenji Kato, Hideki Fujikawa, Nippon Steel Corporation,
Kunihiko Nishioka, The Japan Iron and Steel Federation,
Hironobu Oshima, Center for Coal Utilization, JAPAN

We6:4

We7 - 2nd Plenary Session

Technology Progress of Blast Furnace Ironmaking in China
Guo Wei, Northeastern University, PR, China

We7:1

Injection of pulverized coal at ThyssenKrupp Stahl
Karl Langner, ThyssenKrupp Stahl AG, GERMANY

We7:2

Blast furnace hearth models, reline and cooling philosophies - Joint EBFC Paper
Luc Bonte, Sidmar-Arcelor, BELGIUM,
Stuart Southern, Corus, UNITED KINGDOM,
S.A. Zaimi, Arcelor Research, FRANCE,
T. Kuhl, Dofasco, CANADA,
F. Giandomenico, Siderar, ARGENTINA,
P. Manilla, P. Inkala, Ruukki, FINLAND,
G. Lesoin, Arcelor Fos, FRANCE,
P. Eisen, HKM, GERMANY,
T. Stisovic, Salzgitter, GERMANY,
P. Chaubal, Mittal Steel Inland, UNITED STATES,
H. Vondruska, Rogesa, GERMANY,
E. Dehombreux, Arcelor Cockerill, BELGIUM,
P. Rüther, ThyssenKrupp, GERMANY,
G. Tijhuis, Corus Ijmuiden, THE NETHERLANDS

We7:3

ULCOS - European steelmakers efforts to reduce green house gas emissions
Jean-Pierre Birat, François Hanrot, IRSID, FRANCE

We7:4