

Versatile Applications of the Top and Bottom Blowing Converter

Contents

Advance and Prospect of Technologies on Converter [Review]	T. SIMA...1765
Some Personal Recollections of Q-BOP Introduction [Letter]	F. SUDO...1770
Development History of Combined Blowing Converter [Technical Review]	
I. At Sumitomo Metal Industries, Ltd.	S. ANEZAKI and I. YAMAZAKI...1775
II. At Nippon Steel Corp.	K. OKOHIRA...1778
III. At Kawasaki Steel Corp.	R. ASAHO, M. OHNISHI and F. SUDO...1781
IV. At Kobe Steel, Ltd.	T. SAITO, H. FUJIMOTO and S. ITO...1783
V. At NKK Corporation	T. HASEGAWA...1786
VI. At Nisshin Steel Co., Ltd.	H. TAKAHASHI...1788
Metallurgical Characteristics of Combined Blowing Converter [Commentary] ...	M. KAWAKAMI and K. ITO...1791

Hot Metal Treatment

Establishment of Steel Making Process with High Productivity and High Efficiency by Use of Hot Metal Pretreatment [Technical Report]	
..... S. KITAMURA, Y. MIZUKAMI, T. KANEKO, T. YAMAMOTO, R. SAKOMURA, E. AIDA and S. ONOYAMA...	1801
Dephosphorization of Hot Metal in a Top and Bottom Blowing Converter with BOF-slag-based Flux [Technical Paper]	T. MATSUO and S. MASUDA...1809
Development of Effective Refining Process Consisting of Both Hot Metal Pretreatment and Decarburization in Top and Bottom Blowing Converters [Technical Report]	
..... K. YOSHIDA, I. YAMAZAKI, Y. TOZAKI, N. AOKI, J. YOSHIYAMA and K. ARAI...	1817
Simultaneous Removals of Silicon and Phosphorous in Hot Metal and Temperature Control by CaO-based-flux Injection Using “Solid” and “Gaseous” Oxygen [Technical Paper]	
..... Y. NAKAJIMA, M. MUKAI, Y. FUKAMI, H. SUN, T. MORIYA and S. MARUHASHI...	1823

Smelting Reduction of Manganese, Chromium and Iron Ores, and Scrap Melting

Smelting Reduction Process of Manganese Ore for [Mn] Increase both in Hot Metal Dephosphorization and Decarburization [Technical Report]	T. MATSUO, S. FUKAGAWA and T. IKEDA...1831
Fundamental Study on Rapid Reduction of Chromium Ore in Basic Oxygen Furnace [Technical Paper]	T. TAKAOKA, Y. KIKUCHI and Y. KAWAI...1839
Pilot Plant Experiment of Smelting Reduction Using Fine Chromium Ore [Technical Paper]	S. TAKEUCHI, H. NAKAMURA, T. SAKURAYA, T. FUJII and T. NOZAKI...1847
Production of High Carbon Ferrochrome by Smelting Reduction [Technical Report]	
..... H. KATAYAMA, M. KUWABARA, H. HIRATA, J. YAGI, T. SAITOU and M. FUJITA...	1855
Production of Stainless Steel with Smelting Reduction of Chromium Ore by Two Combined Blowing Converter [Technical Report]	K. TAOKA, C. TADA, S. YAMADA, H. NOMURA, M. OHNISHI and H. BADA...1863
Smelting Reduction of Iron Ore with Top-and-Bottom Blowing Converter [Technical Report]	
..... M. MATSUO, C. SAITO, H. KATAYAMA, H. HIRATA, M. KANEMOTO and T. IBARAKI...	1871
Relation between Post-combustion, Heat Efficiency and Coal Consumption in Smelting Reduction of Iron Ore Top-and-Bottom Blowing Converter [Technical Paper]	
..... M. MATSUO, C. SAITO, H. KATAYAMA, H. HIRATA and Y. OGAWA...	1879
Key Factors to Improve Post-combustion in Pressurized Converter Type Smelting Reduction Vessel [Technical Paper] ...	K. TAKAHASHI, H. TANABE, K. IWASAKI, M. MUROYA, I. KIKUCHI and M. KAWAKAMI...1887
Scrapmelting Process in Steelmaking Converter Using Coke Bed [Technical Paper]	
..... T. HIRATA, H. ISHIDA and S. ANEZAKI...	1893

Refining Technology with Converter and Ladle

Improvement of the Refining Process around Combined Blowing Converter in Kobe Works [Technical Report]	S. KAWASAKI, H. HIRAHASHI, M. AOKI, K. HAJIKA and Y. HUNAOKA...1900
--	---

Operation Technique of BOF Using Dephosphorized Hot Metal [Technical Report]	K. YASUI, M. TAKEOKA and M. MIYAJIMA...1908
Manganese Partition Equilibrium in Less Slag Blowing at BOF Linked to High Speed Dephosphorization of Hot Metal [Technical Paper]	Y. TABATA, O. TERADA, T. HASEGAWA, Y. KIKUCHI, Y. KAWAI and Y. MURAKI...1916
Refining Technology of High Cr Steel by Mixed Gas Top Blowing in Combined Blowing Converter [Technical Paper]	Y. KISHIMOTO, Y. KATO, T. SAKURAYA, T. FUJII, H. OSANAI, S. OMIYA and H. TAKE...1924
Development of Refining Process for Production of High Purity Ultra-low-carbon Steel [Technical Report]	N. KITAGAWA, H. OSANAI, M. SUITO, S. OHMIYA, Y. KATO and Y. TAKAHASHI...1932
Improvement of Refining Technologies in Bottom Blowing Converter [Technical Report]	H. NISHIKAWA, H. KONDO, Y. KISHIMOTO, N. TAMURA, R. ASAHO and M. ONISHI...1940
Production Technology of High Purity Steel for High Class Line Pipes and Cold Sheets [Technical Report]	R. TSUJINO, M. KOJIMA, K. ENDO, M. OKIMORI, J. OGURA and J. NAKASHIMA...1948

Control of Converter Blowing

Development of Refining Control System in Combined Blowing Converter Based on Exhaust Gas Information [Technical Report]	J. FUKUMI, C. TAKI, T. HATANAKA and H. OGURA...1956
Phosphorus and Manganese Control Technologies in Basic Oxygen Furnace and Their Future View [Technical Report]	M. KANEMOTO, M. OKAJIMA, H. YAMANE and M. YAMAUCHI...1964
Estimation Technique of Blow-end Compositions [Technical Report]	T. SAITO, K. EBATO, I. TSUBONE, H. YAMANA and H. TAKEZOE...1972
Development of Automatic Blowing Control System in Combined Blowing Converter [Technical Report]	T. SAITO, I. TSUBONE, M. AZUMA, H. YAMANA and H. TAKEZOE...1978

Related Theory and Technology

Steelmaking Reactions and Their Modelling [Technical Review]	M. SANO...1986
The Mechanism of the Back-attack Phenomenon on a Bottom Blowing Tuyere Investigated in Model Experiments [Technical Paper]	T. AOKI...1996
Elimination of the Back-attack Phenomenon on a Bottom Blowing Tuyere Investigated in Model Experiments [Technical Paper]	T. AOKI...2004
Kinetic Model for the Reaction between Iron Oxide in Molten Slag and Carbon in Molten Iron via CO-CO ₂ Bubble [Technical Paper]	K. SHIBATA, T. KITAMURA and N. TOKUMITSU...2011
Fundamental Study on Post-combustion Technique in Strongly Stirred Iron Bath Reactor [Technical Paper]	S. NISHIOKA, H. NAKAMURA, K. TAKAHASHI, Y. KAWAI and S. SUGIYAMA...2019
Effect of Slag Volume on the Characteristics of Post-combustion in a Test Decarburization Furnace [Technical Report]	M. NISHIMURA, H. ISHIKAWA and C. SAITOU...2025
Analysis of the Scrap Melting Rate in High Carbon Molten Iron [Technical Paper]	K. ISOBE, H. MAEDA, K. OZAWA, K. UMEZAWA and C. SAITO...2033
Development of a Level Meter for Molten Iron in a Converter Using Microwave [Technical Report]	Y. KAWATA, C. MANABE, A. KOBAYASHI, I. TUBONE and H. YAMANA...2041
Refractory Technologies Combined Blowing Converter [Technical Report]	H. KOKUMAI and H. NISHIO...2049

Columns	2057, 2058	Notification from the Information Center of	
The Editor's Postscript	2058	ISIJ.....	N 360
Notice to Members	N 345	Proceedings to the Institute	N 365

鉄と鋼 定価 2,884 円 (本体 2,800 円, 消費税 84 円)

Tetsu-to-Hagané Price: ¥2,884.- (including Consumption Tax ¥84.-)

(Only for export, ¥2,800.- excluding Consumption Tax ¥84.-)