

ISSN 1006-706X

Volume 27 • Number 4 • April 2020



Journal of Iron and Steel Research International

钢铁研究学报(英文版)



中国钢研科技集团有限公司
CHINA IRON & STEEL RESEARCH INSTITUTE GROUP



Springer

万方数据

Journal of Iron and Steel Research International

Volume 27 · Number 4 · April 2020

REVIEW

Research progress on multiscale structural characteristics and characterization methods of iron ore sinter

W. Wang · X.H. Chen · R.S. Xu · J. Li · W.J. Shen · S.P. Wang 367

ORIGINAL PAPERS

Mathematical model for design of optimized multi-component slag for electros slag remelting

S.J. Li · G.G. Cheng · Y. Huang · W.X. Dai · Z.Q. Miao 380

Kinetics of hot metal desulfurization by bottom-blowing magnesium vapor

J.M. Su · Z.H. Dou · T.A. Zhang · Y. Liu 392

Oxygen transfer phenomenon between slag and molten steel for production of IF steel

Y.Q. Ji · C.Y. Liu · H.X. Yu · X.X. Deng · F.X. Huang · X.H. Wang 402

Simulation research on oxygen mass transfer between steel and slag in IF steel refining process

A.J. Deng · D.D. Fan · H.C. Wang · C.H. Li 409

Numerical simulation of 3D electromagnetic-thermal phenomena in an induction heated slab

H.P. Liu · X.H. Wang · L.Y. Si · J. Gong 420

A novel laminated metal composite with superior interfacial bonding composed of ultrahigh-strength maraging steel and 316L stainless steel

L. Zhang · W. Wang · M. Babar Shahzad · Y.Y. Shan · K. Yang 433

Microstructure and mechanical properties of hot-rolled low-carbon steel containing Ti-Ca oxide particles: a comparison between base metal and HAZ

C. Wang · X. Wang · J. Kang · G. Yuan · G.D. Wang 440

Effect of yttrium addition on microstructure, mechanical and corrosion properties of 20Cr13 martensitic stainless steel

Q.Y. Zang · Y.F. Jin · T. Zhang · Y.T. Yang 451

Effect of Mn content on microstructure, tensile and impact properties of SA508Gr.4N steel for reactor pressure vessel

X.K. He · Z.Q. Yang · Z. Wang · S.B. Qiao · Z.D. Liu 461

Effects of Sm content on crystallized structure and magnetic properties of $\text{Co}_{80-x}\text{Sm}_x\text{B}_{20}$ amorphous alloys

L.Q. Lai · Y.H. Li · F. Bao · W. Zhang 471

Effects of long-term aging on microstructure and properties of a tungsten bearing heat-resistant alloy

H.S. Bao · G. Yang · Z.Z. Chen · Z.D. Liu 477

CORRECTION

Correction to: Review on improving gas permeability of blast furnace

Y.Z. Pan · H.B. Zuo · J.S. Wang · Q.G. Xue · G. Wang · X.F. She 488

Further articles can be found at link.springer.com

Indexed/abstracted in *Current contents (ISI)*, *Index Medicus/ Medline*, *Chemical Abstracts*, *Bioscience Information Service (BIOSIS)*, *CAS*, *METADEx*, *INSPEC*, *Science Citation Index*, *Ei Compendex*

Instructions for Authors for *J. Iron Steel Res. Int.* are available at www.springer.com/42243

Journal of Iron and Steel Research International

Volume 27 · Number 4 · April 2020

EDITORIAL COMMITTEE	EDITORIAL BOARD		
Honorary Editor-in-Chief Rui-yu Yin (China)	Fujio Abe (Japan)	Alan A. Luo (USA)	Zhi-dong Xiang (China)
	Visvalingam Balasubramanian (India)	Jia-ming Luo (China)	Qing-yan Xu (China)
	Wolfgang Bleck (Germany)	Zhi-ping Luo (USA)	Wei Xu (China)
Editor-in-Chief Zhi-ling Tian (China)	Geoff Brooks (Australia)	Xue-wei Lv (China)	Ke Yang (China)
	Huan-tang Cai (USA)	Han Ma (China)	Zhi-gang Yang (China)
	Jian-chun Cao (China)	Yong-lin Ma (China)	Man Yao (China)
Associate Editors-in-Chief	Dao-lun Chen (Canada)	Xin-ping Mao (China)	Xiao-qin Zeng (China)
Han Dong (China)	Man-sheng Chu (China)	Hiroyuki Matsuura (Japan)	Qi-jie Zhai (China)
Jian-xin Xie (China)	Yu-wen Cui (Spain)	Devesh Misra (USA)	Ji Zhang (China)
Xing-zhong Zhang (China)	Chen-hong Deng (China)	Zuo-ren Nie (China)	Jie-yu Zhang (China)
	Hong-biao Dong (UK)	Hiroshi Nogami (Japan)	Li-feng Zhang (China)
Advisory Board	Jian-xin Dong (China)	Fu-sheng Pan (China)	Yu-zhu Zhang (China)
Hong-nian Cai (China)	Alan P Druschitz (USA)	Jun-wei Qiao (China)	Ming-yi Zheng (China)
Yong Gan (China)	Si-chen Du (Sweden)	Cheng-jia Shang (China)	Ke-chao Zhou (China)
Hai-zhou Wang (China)	Feng Fang (China)	Il Sohn (Korea)	Shao-xiong Zhou (China)
Xi-shan Xie (China)	Zhan-cheng Guo (China)	Chang-jiang Song (China)	Miao-yong Zhu (China)
Zeng-yong Zhong (China)	Ke Han (USA)	Prakash Srirangam (UK)	
Jing Zhu (China)	Xiao-xu Huang (China)	Kiet Tieu (Australia)	
	Qing Jiang (China)	Cong Wang (China)	
Director	Yong-lin Kang (China)	Fu-hui Wang (China)	
Yuan-qi Wang (China)	Hui-jun Li (Australia)	Guo-dong Wang (China)	
	Jin-shan Li (China)	Shu-qi Wang (China)	
Deputy Director	Sheng-li Li (China)	Wan-lin Wang (China)	
Yan-jing Shao (China)	Wei Li (China)	Xin-hua Wang (China)	
	Yong-chang Liu (China)	Zhao-dong Wang (China)	
	Hong-ming Long (China)	Bryan Webler (USA)	
	Xiao-gang Lu (China)	Kai-ming Wu (China)	
	Xiong-gang Lu (China)	Ying Wu (China)	

JOURNAL OF IRON AND STEEL RESEARCH INTERNATIONAL
(Monthly, Started in 1994)

Editor-in-Chief	Zhi-ling Tian
Administrated by	China Iron and Steel Association
Sponsored by	China Iron and Steel Research Institute Group
Edited and Published by	CISRI Boyuan Publishing Co., Ltd. No.76 Xueyuan Nanlu, Beijing 100081, China
Printed by	Beijing Kexin Printing Co., Ltd.
Domestic Distribution	Beijing Newspapers and Periodicals Distribution Bureau China Post Group (Code: 82-767)
Abroad Distribution	China International Book Trading Corporation (M 1464)
Copyright © 2020	The Editorial Board of JOURNAL OF IRON AND STEEL RESEARCH INTERNATIONAL

Tel.: +86 10 62182295
Fax: +86 10 62182817
E-mail: gtyjxb-e@163.com
http://www.chinamet.cn

Domestic cost ¥100
Abroad cost \$100

ISSN 1006-706X
CN 11-3678/TF

