



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

Journal of Iron and Steel Research International

Volume 29 · Number 12 (Volume End) · December 2022

PREFACE

Preface

C.J. Li · W.M. Li 1899

REVIEW

A review on prediction of casting defects in steel ingots: from macrosegregation to multi-defect model

J. Li · X.W. Xu · N. Ren · M.X. Xia · J.G. Li 1901

ORIGINAL PAPERS

Application of heat absorption method to reduce macrosegregation during solidification of bearing steel ingot

S. Yu · L.Q. Zhu · J.H. Lai · M.X. Pan · Y.Y. Liu · W.D. Xuan · J. Wang · C.J. Li · Z.M. Ren 1915

Roll profile electromagnetic control characteristics under roll heterogeneity

T.S. Yang · Y.H. Bai · Y. Hai · Q.F. Chen · F.S. Du 1927

Improving ingot homogeneity by modified hot-top pulsed magneto-oscillation

F. Zhang · H.G. Zhong · Y.Q. Yang · M.X. Pan · R.X. Li · Q.J. Zhai 1939

Effect of hollow insulation riser on shrinkage porosity and solidification structure of ingot

Y.J. Liu · C.L. Peng · W.M. Li · X.L. Zhu · M.G. Shen · X.W. Liao · K. Liu · C.Y. Wei · Y.A. Yusuf · J. Yang · C.Y. Cai 1951

Multi-scale analysis of void evolution in large-section plastic mold steel during multi-directional forging

X. Chen · B.Y. Wu · B.L. Wu · X.C. Wu · J.W. Li 1961

Role of radiative and convective heat transfer during heating of an ingot product in a tubular furnace: experiment and simulation

W.C. Yang · Y. Zhou · J. Zhang · H. Liu · Y.J. Ren · J.J. Chen · X.G. Zhang 1978

Effect of cerium addition on microstructure and mechanical properties of as-cast high grade knives steel

X.Y. Qiao · X. Han · Z.J. He · Z. Zhuang · X. Yang · F.X. Mao 1986

Evaluation and improvement of pearlite microstructure and mechanical properties in 45Cr4NiMoV and 50Cr5NiMoV steels

K.Q. Liu · X.J. Zhang · X.Y. Song · L. Zhao · L. Zhu 1995

An innovative process of clad teeming for preparing slab ingot

W.B. Ma · Y.H. Jin · Y.A. Jing · W.B. Li · W.D. Yu · G.L. Li · W.M. Li 2006

Investigation on bonding interfaces of an SA508 steel billet manufactured by additive forging

X.J. Zhang · T.S. Wang · Z.C. Zhu · L. Zhu 2016

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 29 · Number 12 (Volume End) · December 2022

EDITORIAL COMMITTEE

Honorary Editor-in-Chief
Rui-yu Yin (China)

Editor-in-Chief
Zhi-ling Tian (China)

Associate Editors-in-Chief
Han Dong (China)
Jian-xin Xie (China)
Xing-zhong Zhang (China)

Advisory Board
Hong-nian Cai (China)
Yong Gan (China)
Hai-zhou Wang (China)
Xi-shan Xie (China)
Zeng-yong Zhong (China)
Jing Zhu (China)

Director
Yuan-qi Wang (China)

Deputy Director
Yan-jing Shao (China)
Die Hu (China)

EDITORIAL BOARD

Fujio Abe (Japan)
Visvalingam Balasubramanian (India)
Wolfgang Bleck (Germany)
Geoff Brooks (Australia)
Huan-tang Cai (USA)
Jian-chun Cao (China)
Dao-lun Chen (Canada)
Man-sheng Chu (China)
Yu-wen Cui (Spain)
Chen-hong Deng (China)
Hong-biao Dong (UK)
Jian-xin Dong (China)
Alan P Druschitz (USA)
Si-chen Du (Sweden)
Feng Fang (China)
Zhan-cheng Guo (China)
Ke Han (USA)
Xiao-xu Huang (China)
Qing Jiang (China)
Yong-lin Kang (China)
Hui-jun Li (Australia)
Jin-shan Li (China)
Sheng-li Li (China)
Wei Li (China)
Yong-chang Liu (China)
Hong-ming Long (China)
Xiao-gang Lu (China)
Xiong-gang Lu (China)

Alan A. Luo (USA)
Jia-ming Luo (China)
Zhi-ping Luo (USA)
Xue-wei Lv (China)
Han Ma (China)
Yong-lin Ma (China)
Xin-ping Mao (China)
Hiroyuki Matsuura (Japan)
Devesh Misra (USA)
Zuo-ren Nie (China)
Hiroshi Nogami (Japan)
Fu-sheng Pan (China)
Jun-wei Qiao (China)
Cheng-jia Shang (China)
Il Sohn (Korea)
Chang-jiang Song (China)
Prakash Srirangam (UK)
Kiet Tieu (Australia)
Cong Wang (China)
Fu-hui Wang (China)
Guo-dong Wang (China)
Shu-qi Wang (China)
Wan-lin Wang (China)
Xin-hua Wang (China)
Zhao-dong Wang (China)
Bryan Webler (USA)
Kai-ming Wu (China)
Ying Wu (China)

Zhi-dong Xiang (China)
Qing-yan Xu (China)
Wei Xu (China)
Ke Yang (China)
Zhi-gang Yang (China)
Man Yao (China)
Xiao-qin Zeng (China)
Qi-jie Zhai (China)
Ji Zhang (China)
Jie-yu Zhang (China)
Li-feng Zhang (China)
Yu-zhu Zhang (China)
Ming-yi Zheng (China)
Ke-chao Zhou (China)
Shao-xiong Zhou (China)
Miao-yong Zhu (China)

JOURNAL OF IRON AND STEEL RESEARCH INTERNATIONAL

(Monthly, Started in 1994)

Editor-in-Chief
Administered by
Sponsored by
Edited and Published by

Printed by
Domestic Distribution

Abroad Distribution
Copyright © 2022

Zhi-ling Tian
China Iron and Steel Association
China Iron and Steel Research Institute Group
CISRI Boyuan Publishing Co., Ltd.
No.76 Xueyuan Nanlu, Beijing 100081, China
Beijing Kexin Printing Co., Ltd.
Beijing Newspapers and Periodicals Distribution Bureau
China Post Group (Code: 82-767)
China International Book Trading Corporation (M 1464)
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

 Springer

ISSN 1006-706X



9 771006 706227

12