

中文核心期刊 中国科技核心期刊 中国科学引文数据库来源期刊 中文科技期刊数据库收录期刊 中国学术期刊文摘收录期刊
SCOPUS数据库收录期刊 美国《金属文摘》收录期刊 美国《剑桥科学文摘》收录期刊 美国《化学文摘》收录期刊
日本科学技术文献速报收录期刊



Q K 2 2 0 5 3 6 8

2

2022 Vol.57

钢

铁

IRON & STEEL

CSM

中国金属学会
钢铁研究总院 主办
北京钢研柏苑出版有限责任公司

ISSN 0449-749X



目次

综合论述

铁矿粉烧结优化配矿及其模型研究进展 寇明银, 张 众, 曾 旺, 周 恒, 吴胜利 1

原料与炼铁

炼焦工艺对干煤和湿煤成焦质量的影响 仇 灏, 瞿立凯, 张雪红, 刘和平 12
高硫精矿对比对烧结矿性能的影响 王桂林, 张建良, 刘征建, 王耀祖, 刘福成, 佟 振 19
包钢高炉炼铁优化配矿平台的开发与应用 何晓义, 刘周利, 吴胜利, 赵 彬, 杨 帆 28
高铝高炉渣系的熔化特性 王 震, 沈峰满, 刘春城, 郑海燕, 杜金磊, 张 严 36

炼钢

130 t 直流电弧炉喷吹过程的优化模拟 王 丹, 郭志红, 霍彦朋, 范建通, 朱立光 46
硫含量对 KR 脱硫渣中硫赋存状态的影响 朱仁林, 李建立, 余 岳, 朱航宇 54
Q345D 钢精炼过程夹杂物生成及演变行为 王章印, 姜 敏, 王新华 63
GCr15 轴承钢连铸冷却速率下凝固原位观察 罗腾飞, 王卫领, 刘宗辉, 罗 森, 朱苗勇 73

压力加工

考虑辊缝变化的板带热轧动态理论模型 杨彦博, 彭 艳, 刘 洋, 刘才溢, 王 瑾 85
5+1 型轧机高强度钢五道次模式轧制规程优化
..... 李学通, 任明华, 刘亚星, 孙业选, 贾文强, 谭超超 94
超深拉拔类线材夹杂物及断口分析 王昆鹏, 王 郢, 廖家明, 徐建飞, 姜 敏, 王新华 101

钢铁材料

40Cr 钢方坯表面淬火工艺及组织转变规律
..... 郭勤宇, 陈永峰, 张洪彪, 左小坦, 赵 立, 张亚兵 109
变形参数对 GH4742 合金动态再结晶及 γ' 相的影响
..... 李振团, 秦鹤勇, 田 强, 张文云, 赵光普 117
Ti-V-Mo 微合金化 22MnB5 钢中析出相及其强化作用
..... 韩 荣, 刘洪喜, 尉文超, 王毛球, 时 捷 127
EH40 级船体钢中焊接热影响区组织特征
..... 王 雁, 朱立光, 吴耀光, 王重君, 刘志远, 霍金霞 139
690 MPa 级 ULCB 熔敷金属组织与强韧化规律 孟满丁, 安同邦, 魏金山, 马成勇, 左 月 149
DP980 钢的动态力学性能及本构模型构建 张春菊, 丁 轩, 杨明球, 张陆洋, 李 辉 157

环保与能源

基于“3060”目标的中国钢铁行业二氧化碳减排路径与潜力分析
..... 赵紫薇, 孔福林, 童莉葛, 尹少武, 解雅茹, 王 立 162
低成本钢尾渣-矿渣基矿山充填料的优化开发
..... 代梦博, 罗邦曹, 孙彩虹, 田 浩, 孙业长, 春铁军 175

CONTENTS

Technical Reviews
Research progress on optimization technology and its model of ore-blending for sinter process
..... KOU Ming-yin, ZHANG Zhong, ZENG Wang, ZHOU Heng, WU Sheng-li 1

Raw Material and Ironmaking
Influence of coking processes on coke quality made by wet coal and dried coal
..... QIU Hao, QU Li-kai, ZHANG Xue-hong, LIU He-ping 12
Effect of high-sulfur concentrate on properties of sinter
..... WANG Gui-lin, ZHANG Jian-liang, LIU Zheng-jian, WANG Yao-zu, LIU Fu-cheng, TONG Zhen 19
Development and application of optimized ore blending platform for blast furnace ironmaking system in Baotou Steel HE Xiao-yi, LIU Zhou-li, WU Sheng-li, ZHAO Bin, YANG Fan 28
Melting characteristics of blast furnace slag with high Al₂O₃
..... WANG Zhen, SHEN Feng-man, LIU Chun-cheng, ZHENG Hai-yan, DU Jin-lei, ZHANG Yan 36

Steelmaking
Optimization simulation of injection process in 130 t DC electric arc furnace
..... WANG Dan, GUO Zhi-hong, HUO Yan-peng, FAN Jian-tong, ZHU Li-guang 46
Effect of sulfur content on occurrence state of sulfur in KR desulfurization slag
..... ZHU Ren-lin, LI Jian-li, YU Yue, ZHU Hang-yu 54
Formation and evolution of inclusions in Q345D steel during secondary refining process
..... WANG Zhang-yin, JIANG Min, WANG Xin-hua 63
In-situ observation on solidification of GCr15 bearing steel at cooling rates of continuous casting
..... LUO Teng-fei, WANG Wei-ling, LIU Zong-hui, LUO Sen, ZHU Miao-yong 73

Metal Forming
Dynamic theoretical model of strip hot rolling considering change of roll gap
..... YANG Yan-bo, PENG Yan, LIU Yang, LIU Cai-yi, WANG Jin 85
Optimization of five-pass rolling schedule for high strength steel of 5+1 mill
..... LI Xue-tong, REN Ming-hua, LIU Ya-xing, SUN Ye-xuan, JIA Wen-qiang, TAN Chao-chao 94
Investigation on inclusions and breakages in ultra-deep drawing wire rod
..... WANG Kun-peng, WANG Ying, LIAO Jia-ming, XU Jian-fei, JIANG Min, WANG Xin-hua 101

Materials
Surface quenching technology and microstructure evolution law of 40Cr steel billet
..... GUO Qin-yu, CHEN Yong-feng, ZHANG Hong-biao, ZUO Xiao-tan, ZHAO Li, ZHANG Ya-bing 109
Effect of deformation parameters on dynamic recrystallization and γ'-phase of GH4742 superalloy
..... LI Zhen-tuan, QIN He-yong, TIAN Qiang, ZHANG Wen-yun, ZHAO Guang-pu 117
Precipitates and their strengthening in Ti-V-Mo microalloyed 22MnB5 steel
..... HAN Rong, LIU Hong-xi, YU Wen-chao, WANG Mao-qiu, SHI Jie 127
Microstructure characteristics of welding heat affected zone in EH40 shipbuilding steel
..... WANG Yan, ZHU Li-guang, WU Yao-guang, WANG Chong-jun, LIU Zhi-yuan, HUO Jin-xia 139
Microstructure and strength-toughness mechanism of 690 MPa grade ULCB deposited metals
..... MENG Man-ding, AN Tong-bang, WEI Jin-shan, MA Cheng-yong, ZUO Yue 149
Dynamic mechanical properties and constitutive model of DP980 steel
..... ZHANG Chun-ju, DING Xuan, YANG Ming-qiu, ZHANG Lu-yang, LI Hui 157

Equipment Technology
Analysis of CO₂ emission reduction path and potential of China's steel industry under the "3060" target
..... ZHAO Zi-wei, KONG Fu-lin, TONG Li-ge, YIN Shao-wu, XIE Ya-ru, WANG Li 162
Optimized development of steel slag tailings-GGBS based low-cost backfill material
..... DAI Meng-bo, LUO Bang-cai, SUN Cai-hong, TIAN Hao, SUN Ye-chang, CHUN Tie-jun 175



20年行业经验

20 years of industry experience

400-800-4139

只做不锈钢连铸机

湖北中钢联冶金工程有限公司

Hubei Central Steel Union Metallurgical Engineering Co., Ltd.

地址：武汉市江汉区江兴路17号中信大楼516

研发中心：武汉市黄陂区卓尔总部基地G10栋

电话：027-83595419 传真：027-83595747

邮箱：csu@csu.net.cn 网址：www.csu.net.cn

