

## 目 次

### 综合论述

- 铁前数模技术进展与大数据应用探讨 ..... 马富涛, 张建良, 张 磊, 焦克新, 郝良元, 刘福龙 1

### 原料与炼铁

- 马钢 4 000 m<sup>3</sup>高炉喷吹煤粉燃烧性能研究与应用 ..... 高 鹏, 赵丹宁, 王 平, 李华军, 余长有, 魏汝飞 10  
铁矿粉烧结液相流动性特征数的影响因素 ..... 付忠旺, 莫朝兴, 陈小敏, 赵 勇, 尉迟鹤鹏, 吴 锏 18  
喷吹用煤粉爆炸特性及抑爆措施 ..... 高强健, 何耘丰, 刘 墨, 杨富才 24  
高炉 DEM 模拟用炉料系数的测定及其应用 ..... 寇明银, 吴胜利, 周 恒, 于亚光, 顾 凯 30

### 炼钢

- 底吹氩钢包内渣-金反应及脱硫行为的数值模拟 ..... 娄文涛, 刘 壮, 王晓雨, 朱苗勇 37  
X65 管线钢全流程夹杂物转变规律及控制 ..... 刘延强, 张 鹏, 何文远, 杨晓山, 黄财德, 赵长亮 44  
现代合金钢大方坯连铸机设计特点及生产实践 ..... 吴国庆, 邱明罡, 代宗岭, 陈卫强, 张温永 54

### 压力加工

- 极薄带轧制变形区接触轮廓及接触压力分析 ..... 任忠凯, 王 涛, 王跃林, 范婉婉, 付文石, 郭雄伟 62  
六辊 UCM 可逆冷轧机带钢断面形状精细控制技术 ..... 胡 柯, 沈新玉, 曲义振, 戴小华, 马晓宝, 王东城 69

### 钢铁材料

- 温度对高钴钼不锈钢轴承钢高周疲劳性能的影响 ..... 耿思远, 杨卯生, 赵昆渝 77  
方坯直轧工艺对钢筋组织和性能差异性的影响 ..... 刘 鑫, 冯光宏, 张宏亮, 齐渊洪 86  
SO<sub>2</sub>对海洋大气环境中含铬耐候钢腐蚀行为的影响 ..... 付贵勤, 李东亮, 朱苗勇 94  
中碳车轮钢复合型裂纹疲劳扩展行为 ..... 江 波, 陈 刚, 赵 海, 肖蔚荣, 刘 鹏, 任学冲 100  
热处理工艺对 20Cr1Mo1VTiB 螺栓钢组织及性能的影响 ..... 龚雪婷, 武志广, 李 鑫, 赵孟雅, 彭 涛 105

### 环保与能源

- 环形炉高温退火的水扩散模拟 ..... 夏 添, 向志东, 贺 铸, 胡守天, 骆忠汉 112

### 装备技术

- 20CrMn 钢双辊振动铸轧薄带性能的试验 ..... 魏洁平, 许志强, 孙明翰, 朱志旺, 王海军, 杜凤山 118

### 信息

- ..... (68)

### 征稿及征订启事

- ..... (123)(124)

**CONTENTS****Technical Reviews**

- Introduction of development and progress of mathematical modeling technology in iron-making area and discussion on application prospects of big data technology ..... MA Fu-tao, ZHANG Jian-liang, ZHANG Lei, JIAO Ke-xin, HAO Liang-yuan, LIU Fu-long 1

**Raw Material and Ironmaking**

- Study and application on combustibility of pulverized coal injection at 4 000 m<sup>3</sup> BF of Masteel ..... GAO Peng, ZHAO Dan-ning, WANG Ping, LI Hua-jun, YU Chang-you, WEI Ru-fei 10  
Influence factors of fluidity characteristic number of iron ore powder ..... FU Zhong-wang, MO Chao-xing, CHEN Xiao-min, ZHAO Yong, YUCHI He-peng, WU Keng 18  
Fundamental of explosibility of pulverized coal injection and suppressed measures ..... GAO Qiang-jian, HE Yun-feng, LIU Zhao, YANG Fu-cai 24  
Measurements and application of burden coefficients for DEM simulation in blast furnace ..... KOU Ming-yin, WU Sheng-li, ZHOU Heng, YU Ya-guang, GU Kai 30

**Steelmaking**

- Numerical simulation of slag-metal reaction and desulfurization behavior in gas-stirred ladle ..... LOU Wen-tao, LIU Zhuang, WANG Xiao-yu, ZHU Miao-yong 37  
Transformation behavior and control of inclusions in X65 pipeline steel during whole process ..... LIU Yan-qiang, ZHANG Peng, HE Wen-yuan, YANG Xiao-shan, HUANG Cai-de, ZHAO Chang-liang 44  
Design features and production practice of modern alloy steel bloom caster ..... WU Guo-qing, QIU Ming-gang, DAI Zong-ling, CHEN Wei-qiang, ZHANG Wen-yong 54

**Metal Forming**

- Analysis of contact contour and contact pressure in deformation zone of ultra-thin strip rolling ..... REN Zhong-kai, WANG Tao, WANG Yue-lin, FAN Wan-wan, FU Wen-shi, GUO Xiong-wei 62  
Fine control technology of strip profile for 6-high reversible universal crown cold rolling mill ..... HU Ke, SHEN Xin-yu, QU Yi-zhen, DAI Xiao-hua, MA Xiao-bao, WANG Dong-cheng 69

**Materials**

- Influence of temperature on high cycle fatigue properties of high cobalt molybdenum stainless bearing steel ..... GENG Si-yuan, YANG Mao-sheng, ZHAO Kun-yu 77  
Effect of billet direct rolling process on difference in microstructure and mechanical properties of rebar ..... LIU Xin, FENG Guang-hong, ZHANG Hong-liang, QI Yuan-hong 86  
Effect of SO<sub>2</sub> on corrosion behavior of Cr-containing weathering steel in simulated marine atmosphere ..... FU Gui-qin, LI Dong-liang, ZHU Miao-yong 94  
Fatigue propagation behavior of mixed mode crack in wheel steel ..... JIANG Bo, CHEN Gang, ZHAO Hai, XIAO Wei-rong, LIU Peng, REN Xue-chong 100  
Effect of heat treatment process on microstructure and mechanical properties of 20Cr1Mo1VTiB steel ..... GONG Xue-ting, WU Zhi-guang, LI Xin, ZHAO Meng-ya, PENG Tao 105

**Environmental Protection and Energy**

- Numerical simulation of vapour diffusion in annular furnace during high temperature annealing ..... XIA Tian, XIANG Zhi-dong, HE Zhu, HU Shou-tian, LUO Zhong-han 112

**Equipment Technology**

- Experimental research of vibratory cast-rolling strips for 20CrMn alloy steel ..... WEI Jie-ping, XU Zhi-jiang, SUN Ming-han, ZHU Zhi-wang, WANG Hai-jun, DU Feng-shan 118

**Information**

- ..... (68)

**Contribution Wanted and Subscription Announcement**

- ..... (123)(124)