



论文摘要

中南大学学报(自然科学版)

ZHONGNAN DAXUE XUEBAO(ZIRAN KEXUE BAN)

Vol.34 No.6 Dec.2003

[PDF全文下载] [全文在线阅读]

文章编号: 1005-9792(2003)06-0606-05

以赤铁矿为主配加磁铁矿制备的氧化球团矿显微结构

黄柱成, 张元波, 陈耀铭, 庄剑鸣

(中南大学资源加工与生物工程学院, 湖南长沙, 410083)

摘要: 在链篦机-回转窑模拟装置中制备氧化球团矿, 采用显微镜和扫描电镜研究单一赤铁矿及以赤铁矿为主配加磁铁矿制备的氧化球团矿显微结构. 研究表明: 当单一赤铁矿球团在焙烧温度为1 320℃、焙烧时间为20 min时, 球团矿抗压强度达2 439 N/个, 其显微结构较松散, 并存在少量细小裂纹; 当赤铁矿球团中添加20%(质量分数, 下同)的秘鲁磁铁矿, 在焙烧温度为1 300℃、焙烧时间为20 min时, 球团矿抗压强度达3 045 N/个, 其显微结构致密, Fe₂O₃晶体互连性较好. 这表明在制备氧化球团矿时, 添加磁铁矿降低了球团焙烧温度, 改善了球团矿的显微结构, 提高了抗压强度.

关键字: 赤铁矿; 磁铁矿; 氧化球团; 显微结构; 链篦机-回转窑

Microstructure of oxidized pellet mainly made from hematite with magnetite

HUANG Zhu-cheng, ZHANG Yuan-bo, CHEN Yao-ming, ZHUANG Jian-ming

(College of Resources Processing and Bioengineering, Central South University, Changsha 410083, China)

Abstract: By the optical microscope and scanning electron microscope, the composition and microstructure of the oxidized pellets made from the only hematite and the hematite with magnetite were studied. The results show that the only hematite oxidized pellets roasted at 1 320℃ for 20 min in the grate-kiln have bad microstructure and loose crystal form, and there are a few microscopic cracks in the pellets which have the low compression strength of 2 439 N. But the oxidized pellets made from hematite with 20% Perumagnetite have a great compression strength of 3 045 N and perfect microstructure after roasting at 1 300℃ for 20 min in the grate-kiln; the whole structure of the pellets is fine and close, and the interconnection between the crystals is stronger than that of the only hematite pellets. The addition of magnetite not only makes the preheating and roasting temperature down but also improves the microstructure and the compression strength of the pellets.

Key words: hematite; magnetite; oxidized pellet; microstructure; grate-kiln

版权所有：《中南大学学报(自然科学版、英文版)》编辑部

地 址：湖南省长沙市中南大学 邮编： 410083

电 话： 0731-88879765 传真： 0731-88877727

电子邮箱： zngdxb@mail.csu.edu.cn 湘ICP备09001153号