

<<硫化矿浮选电化学>>

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内容概要

本书系统地总结了作者及其研究团队近年来在硫化矿浮选领域的研究工作。作者采用不同电化学研究方法,包括腐蚀电化学研究方法,浮选电化学热力学平衡计算,表面分析技术,半导体能带理论,特别是分子轨道理论,针对硫化矿浮选过程中的电化学现象进行了详细的研究,本书就是对这些工作的总结和提炼。

本书的研究内容涵盖了不同浮选体系中硫化矿的无捕收剂浮选行为和捕收剂诱导浮选行为,其中有关硫化矿浮选的腐蚀电化学、机械电化学以及分子轨道理论研究是硫化矿浮选电化学领域全新的研究内容,将有助于读者更为全面、深入地理解硫化矿浮选的原理和流程。

本书中列出的有关硫化矿浮选电化学应用的实例表明,浮选电化学具有非常广阔的应用前景。

本书适合从事表面化学、电化学和矿物加工基础研究和应用技术研究的高校师生、科研人员和工程技术人员阅读参考。

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作者简介

Yuehua Hu Born in 1962, graduated from Central South University (CSU, the former Central South Institute of Mining and Metallurgy) in 1982, got the doctor degree in 1989, and elected as professor in 1991. His professional researches are related with the structure-property of flotation reagents and molecular design, the electrochemistry of flotation of sulphide minerals, the solution chemistry of flotation, the interracial interaction and fine particle flotation. Hu has acquired the better achievement in above fields and has got many too honors, including 1st or 2nd class National Science & Technology Advancement Award, China Book Award, Chinese Youth Award of Science and Technology, National Scientific Award for Outstanding Youth etc. More than 200 papers had been published in China or foreign countries. Hu was honored as Cheung Kong Scholar of the Ministry of Education, elected as vice-chairman of Mineral Processing Committee of China Nonferrous Metals Society, engaged as the adjunct professor of metallurgical department of University of Utah.

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插图：Despite the conflicting evidence, Heyes and Trahar (1984) believe there is sufficient evidence to confirm the presence of sulphur on mineral surface. They leached the surface of pyrrhotite from a typical test with cyclohexane and have examined the leach solution in a UV spectrophotometer. They found that sulphur could be extracted from the surface of pyrrhotite, which had been treated in the absence of collector. As can be seen from Fig. 2.26 the spectrum from the leached pyrrhotite was compared with the spectrum of sulphur dissolved in cyclohexane indicating that sulphur was present at the surface. Kelebek and Smith (1989) used UV spectrophotometer to determine sulphur in the ethanol extract from the surface of floated galena and chalcopyrite showing that the amount of sulphur on the minerals can be correlated with their flotation rate which was found to be first order within the critical surface tension range. The correlation between the amount of extracted sulphur and floatability was further investigated. Figure 2.27 represents the relationship between the recovery of marmatite.

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