

<<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.

书籍目录

Chapter 1 General Review of Electrochemistry of Flotation of Sulphide Minerals
1.1 Three Periods of Flotation of Sulphide Minerals
1.2 Natural Floatability and Collectorless Flotation of Sulphide Minerals
1.3 Role of Oxygen and Oxidation of Sulphide Minerals in Flotation
1.4 Interactions between Collector and Sulphide Minerals and Mixed Potential Model
1.5 Effect of Semiconductor Property of Sulphide Mineral on Its Electrochemical Behavior
1.6 Electrochemical Behaviors in Grinding System
1.7 The Purpose of This Book
Chapter 2 Natural Floatability and Collectorless Flotation of Sulphide Minerals
2.1 Crystal Structure and Natural Floatability
2.2 Collectorless Flotation
2.2.1 Effect of Pulp Potential on Flotation at Certain pH
2.2.2 Pulp Potential and pH Dependence of Collectorless Floatability
2.3 Electrochemical Equilibriums of the Surface Oxidation and Flotation of Sulphide Minerals
2.3.1 The Surface Oxidation of Sulphide Minerals and Nernst Equation
2.3.2 Electrochemical Equilibriums in Collectorless Flotation
2.3.3 Eh-pH Diagrams of Potential and pH Dependence of Flotation
2.4 Electrochemical Determination of Surface Oxidation Products of Sulphide Minerals
2.5 Surface Analysis of Oxidation of Sulphide Minerals
Chapter 3 Collectorless Flotation in the Presence of Sodium Sulphide
3.1 Description of Behavior
3.2 Nature of Hydrophobic Entity
3.3 Surface Analysis and Sulphur-Extract
3.4 Comparison between Self-Induced and Sodium Sulphide-Induced Collectorless Flotation
Chapter 4 Collector Flotation of Sulphide Minerals
4.1 Pulp Potential Dependence of Collector Flotation and Hydrophobic Entity
4.1.1 Copper Sulphide Minerals
4.1.2 Lead Sulphide Minerals
4.1.3 Zinc Sulphide Minerals
4.1.4 Iron Sulphide Minerals
4.2 Eh-pH Diagrams for the Collector/Water/Mineral System
4.2.1 Butyl Xanthate/Water System
4.2.2 Chalcocite-Oxygen-Xanthate System
4.3 Surface Analysis
4.3.1 UV Analysis of Collector Adsorption on Sulphide Minerals
4.3.2 FTIR Analysis of Adsorption of Thio-Collectors on Sulphide Minerals
4.3.3 XPS Analysis of Collector Adsorption on Sulphide Minerals
Chapter 5 Roles of Depressants in Flotation of Sulphide Minerals
5.1 Electrochemical Depression by Hydroxyl Ion
5.1.1 Depression of Galena and Pyrite
5.1.2 Depression of Jamesonite and Pyrrhotite
5.1.3 Interfacial Structure of Mineral/Solution in Different pH Modifier Solution
5.2 Depression by Hydrosulphide Ion
5.3 Electrochemical Depression by Cyanide
5.4 Depression by Hydrogen Peroxide
5.5 Depression of Marmatite and Pyrrhotite by Thio-Organic Depressants
5.6 Role of Polyhydroxyl and Poly Carboxylic Xanthate in the Flotation of Zinc-Iron Sulphide
5.6.1 Flotation Behavior of Zinc-Iron Sulphide with Polyhydroxyl and Polycarboxylic Xanthate as Depressants
5.6.2 Effect of Pulp Potential on the Flotation of Zinc-Iron Sulphide in the Presence of the Depressant
5.6.3 Adsorption of Polyhydroxyl and Polycarboxylic Xanthate on Zinc-Iron Sulphide
5.6.4 Effect of Polyhydroxyl and Polycarboxylic Xanthate on the Zeta Potential of Zinc-Iron Sulphide Minerals
Chapter 6 Electrochemistry of Activation Flotation of Sulphide Minerals
Chapter 7 Corrosive Electrochemistry of Oxidation-Reduction of Sulphide Minerals
Chapter 8 Mechano-Electrochemical Behavior of Flotation of Sulphide Minerals
Chapter 9 Molecular Orbital and Energy Band Theory Approach of Electrochemical Flotation of Sulphide Minerals
Chapter 10 Electrochemical Flotation Separation of Sulphide Minerals
References
Index of Terms
Index of Scholars

章节摘录

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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