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1-羟基-2-萘羟肟酸浮选氟碳铈矿作用机理^①

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摘要: 通过 ξ -电位、吸附作用规律、药剂基团电负性理论及红外吸收光谱法论述了1-羟基-2-萘羟肟酸对氟碳铈矿的捕收性能及作用机理。1-羟基-2-萘羟肟酸主要是以羟肟基上的两个氧原子与氟碳铈矿表面的Re(II)形成了O-C=N-O-Re(III)-O五元环的螯合物而化学吸附, 同时兼有多层的、不均匀的物理吸附, 吸附方程 $\Gamma = 6.76 \times 10^{-2} \cdot C^{1/1.02}$, 吸附速率常数 $K = 2.64 \times 10^5 \text{m}^2 \cdot \text{mol}^{-1} \cdot \text{min}^{-1}$ 。

关键字: 1-羟基-2-萘羟肟酸 氟碳铈矿 浮选 电负性 螯合特性

FLOTATION MECHANISM OF BASTNAESITE WITH 1-HYDROXY-2-NAPHTHYL HYDROXAMIC ACID

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Abstract: The collecting behaviour of bastnaesite with 1-hydroxy-2-naphthyl hydroxamic acid was investigated and its mechanism was discussed by ξ -potential measurement, law of adsorption, means of theoretical calculation on the group electronegativity and method of infrared absorption spectrum. The result showed that two oxygen atoms from 1-hydroxy-2-naphthyl hydroxamic acid chelate RE(III) on the surface of bastnaesite forms five-chain O—C=N—O—RE(III)—O chelate which is chemically adsorbed on the surface of bastnaesite, together with the polyaminates. The nonhomogeneous physical adsorption equation is $\Gamma = 6.76 \times 10^{-2} \cdot C^{1/1.02}$. The constant of adsorption velocity is $K = 2.64 \times 10^5 \text{m}^2 \cdot \text{mol}^{-1} \cdot \text{min}^{-1}$.

Key words: 1-hydroxy-2-naphthyl hydroxamic acid flotation bastnaesite

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