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微波场中不同配碳量钛精矿的吸波特性

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摘 要: 采用微波谐振腔微扰法测定了碳质还原剂和钛精矿混合物料的吸波特性, 研究了碳质还原剂配入钛精矿不同比例时混合物的吸波特性与材料的复介电常数(ϵ'')、微波场内热源强度 p 的关系。分析结果表明: 当粒度为147~175 μm 时, 钛精矿的吸波特性优于椰壳碳、焦炭和无烟煤的; 且通过比较复介电常数的大小确定了椰壳碳和钛精矿最佳配比为20%, 焦炭和钛精矿最佳配比为14%, 无烟煤和钛精矿最佳配比为5%; 并在此配比条件下得到了 ϵ'' 和 p 的最大值。

关键字: 钛精矿; 配碳量; 碳质还原剂; 吸波特性

Microwave-absorbing characteristics of mixtures about different proportions of carbonaceous reducer and ilmenite in microwave field

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Abstract: The microwave-absorbing characteristics of the mixtures about carbonaceous reducer and ilmenite were measured by the technique of microwave cavity perturbation and the relationships between p and the microwave-absorbing characteristic of the mixtures were studied. The results indicate when the particles sizes of the mixtures are 147~175 μm , the microwave-absorbing characteristic of ilmenite is better than those of coconut carbon, coke and anthracite. And the optimal proportions of coconut carbon and ilmenite coke, ilmenite anthracite and ilmenite are defined as 20%, 14% and 5%, respectively. ϵ'' and p reach up to the maximums under the above conditions.

Key words: ilmenite; proportions of carbon; carbonaceous reducer; microwave-absorbing characteristic

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