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Study of extraction and separation of erbium and yttrium in complex exchange system

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Abstract: The effect of feed pH and DTPA concentration on extraction and separation of erbium and yttrium in complex exchange system containing HDEHP as extractant, DTPA as complex agent are investigated. The experimental results show that when the feed pH is 7～8, DTPA concentration is 0.5 mol/L and stir time is 30 min, the extraction rates of erbium and yttrium is 80.42% and 27.62%, respectively, and the recovery of DTPA is up to 90%.

Key words: HDEHP; extraction; complexing separation; yttrium; erbium

稀土系列氧化物超细粉末

广州有色金属研究院稀土室采用湿法沉淀工艺制备出稀土系列氧化物超细粉末. 该粉末纯度99.00%～99.99%,粒度分布窄,粉末晶形单一,分散性好.

稀土氧化物纳米粉末具有小尺寸效应、表面与界面效应、量子尺寸效应、宏观量子隧道效应,与常规粉末相比,在物理、化学性质上具有优异的特性,已被广泛应用于高科技材料之中. 例如:在PLZT,PTC电阻元件中添加Y_2O_3, Sm_2O_3, Nd_2O_3等纳米粉末;CeO_2纳米抛光粉;催化剂载体;固体燃料电解质;氧传感器;FED,PDP荧光粉(Y_2O_3:Eu);超导材料;先进结构陶瓷材料等.