

论文摘要

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化学共沉淀-热分解法制备 $\text{Sm}_2\text{Fe}_{17}$ 合金前驱体

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摘要: 以化学共沉淀-热分解法制备 $\text{Sm}_2\text{Fe}_{17}$ 合金前驱体。探讨溶液pH值、反应物浓度、反应温度以及陈化温度等对沉淀过程粒度和形貌等的影响, 研究煅烧、氢预还原温度和时间对产物晶型的影响, 确定实验的最优条件; 采用红外光谱、XRD以及SEM等手段进行检测。结果表明, 该前驱体化学成分比准确, 钐铁摩尔比约为217:, 结构完整, 并且粒度分布均匀, 完全符合作为磁性材料前驱体要求。

关键字: $\text{Sm}_2\text{Fe}_{17}$ 合金前驱体; 化学共沉淀; 磁性材料

Preparation of $\text{Sm}_2\text{Fe}_{17}$ alloy precursor by chemical coprecipitation-decomposition method

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Abstract: $\text{Sm}_2\text{Fe}_{17}$ alloy precursor was prepared by chemical co-precipitation and heat decomposition method. A variety of factors influencing the particle size and morphology such as solution pH value, reactant concentration, reaction temperature and aging time were investigated. The reaction temperature and time of calcination and deoxidization beforehand by hydrogen gas which influenced the product state were analyzed, and the optimum conditions were also determined using infrared spectrum, XRD and SEM. The results show that the component of the precursor is accurate, the mole ratio of Sm and Fe is 217:, the structure is integral and the particle size is well distributed. It can meet the requirements of being the precursor of the magnetic material.

Key words: $\text{Sm}_2\text{Fe}_{17}$ alloy precursor; chemical co-precipitation; magnetic material

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