

[本期目录](#) | [下期目录](#) | [过刊浏览](#) | [高级检索](#)[\[打印本页\]](#) [\[关闭\]](#)**论文****350 °C中温段SmCo永磁材料的研究**

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摘要: 较系统地研究了Fe和Cu含量对 $\text{Sm}(\text{Co}_{\text{bal}}\text{Fe}_x\text{Cu}_y\text{Zr}_{0.03})_{7.5}$ ($x=0.16-0.28$, $y=0.06, 0.08$)磁体的室温和中温段磁性能的影响。研究表明,室温下内禀矫顽力 iH_c 随Fe含量的增加先增大后减小,最高可以达到2473 kA/m;剩磁 B_r 随Fe含量的增加而增大。在相同Fe含量的情况下,随Cu含量增加内禀矫顽力 iH_c 均增大。矫顽力温度系数的绝对值 $|\beta|$ 随Fe含量的增加单调增大,随Cu含量的增加而降低。

关键词: 2 : 17型SmCo永磁材料 中温段磁体 矫顽力 磁性能

STUDY ON SmCo PERMANENT MAGNETS UNDER 350°C MODERATE TEMPERATURES

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Abstract: The magnetic properties of commercial 2 : 17 - type SmCo magnet is low at high temperature, despite good properties at room temperature and its application temperature is usually lower than 300 °C. In recent years, significant progress has been made on the development of SmCo permanent magnets for high temperature applications. Despite the maximum operating temperature being up to 500 °C, the magnets were found to have low magnetic properties at room temperature and 350 °C. Thus, there has been a demand for developing permanent magnet materials with high properties at moderate temperatures below 350 °C. The effect of Fe and Cu contents on the magnetic properties of Sm(Co_{bal}Fe_xCu_yZr_{0.03})_{7.5} ($x=0.16-0.28$, $y=0.06, 0.08$) magnets at room temperature and 350 °C have been systematically studied. The results show that with increasing Fe content, the intrinsic coercivity iH_c gradually increases, reaching an optimal value of 2473 kA/m, and then drops rapidly at room temperature; the remanence B_r rises monotonically with increasing Fe content. The intrinsic coercivity iH_c increases with raising Cu at a constant Fe content. The absolute value of temperature coefficient of coercivity $|\beta|$ rises monotonically with increasing Fe content, and decreases with increasing Cu content. Sm(Co_{bal}Fe_{0.20}Cu_{0.08}Zr_{0.03})_{7.5} alloy is expected for potential applications at moderate temperatures below 350 °C.

Keywords: 2 : 17 - type SmCo permanent magnet moderate temperature magnet coercivity magnetic property

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通讯作者: 蒋成保**作者简介:** 王倩,女,1987年生,硕士生**通讯作者E-mail:** crystalxuanyuan@yahoo.cn**扩展功能****本文信息**

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