无机材料学报 2006 21 (2): 309-314 ISSN: 1000-324X CN: 31-1363/TQ

研究论文

碳纳米管-超细铜粉复合粉体的制备

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收稿日期 2005-3-4 修回日期 2005-6-2 网络版发布日期 2006-4-5 接受日期 2006-4-5

摘要 采用混酸纯化法在碳纳米管表面引入羟基、羧基等基团, 在此基础上, 用$SnCl_2.2H_2O$溶液对碳纳米管进行敏化处理. 处理过的碳纳米管均匀地分散在水溶液中, 形成碳纳米管悬浮液. 在这种碳纳米管悬浮液中加入五水硫酸铜, 先后用葡萄糖和甲醛对铜实施还原, 原位制备了碳纳米管-超细铜粉复合粉体. SEM和TEM结果表明, 碳纳米管均匀地分散在超细铜粉中, 并且与铜颗粒形成较牢固的结合.

关键词 碳纳米管 超细铜粉 复合粉体 分散

分类号 TB 333

Preparation of CNTs and Superfine Cu Compound Powder

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Abstract The purification in a mixture of concentrated acids was used to modify the surface of carbon nanotubes with hydroxyl groups and carboxyl groups, etc. Furthermore, the sensitizing treatment of the CNTs was made in the $SnCl_2.2H_2O$ solution. After treatment the solution with stable homogeneous dispersions of CNTs and $CuSO_4 \cdot 5H_2O$ was prepared. Then, glucose and formol were used as reductant to reduce the Cu^{2+} and Cu^{+} in order. After deoxidation, The CNTs and superfine Cu compound powders were obtained. SEM and TEM results showed that CNTs dispersed homogeneously in the compound powder and combined firmly with superfine Cu.

Key words carbon nanotubes superfine Cu composite particles dispersion

DOI:

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