

研究论文

## 基于碳纳米管的氧化铈纳米管的合成及表征

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**摘要** 建立了一种制备氧化铈纳米管的新方法,即以碳纳米管(CNTs)为模板,在常温常压下采用液相沉积法在CNTs表面包覆CeO<sub>2</sub>,通过煅烧除去CNTs模板,得到氧化铈纳米管.通过透射电子显微镜(TEM)、X射线衍射(XRD)和X射线光电子能谱(XPS)对其形貌和结构进行了表征.所得CeO<sub>2</sub>纳米管为面心立方结构,直径40~60 nm,长度0.5~2 μm.

**关键词** [碳纳米管](#) [CeO<sub>2</sub>](#) [模板](#)

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## Synthesis and Characterization of Cerium Oxide Nanotubes Based on Carbon Nanotubes

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**Abstract** A facile and novel method for synthesizing cerium oxide nanotubes is reported in this paper. Carbon nanotubes(CNTs) were firstly uniformly coated with CeO<sub>2</sub> nanoparticles by a liquid deposition approach at room temperature and normal pressure and then CNT templates were removed by calcination at a suitable temperature. The characteristics of cerium oxide nanotubes were characterized by TEM, XRD and XPS. The results reveal that the face-centered cubic-phase CeO<sub>2</sub> nanotubes with an average diameter of 40—60 nm and a length of 0.5—2 μm is synthesized.

**Key words** [Carbon nanotubes](#) [CeO<sub>2</sub>](#) [Template](#)

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