

硫酸钙纳米棒的简易合成与光致发光特性

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收稿日期 2005-11-21 修回日期 2006-5-19 网络版发布日期 接受日期

摘要 用水(溶液)/AEO/环己烷/正戊醇的微乳体系, 制备了分散性良好、尺寸均一的单斜结构 $\text{CaSO}_4 \cdot 0.662\text{H}_2\text{O}$ 纳米棒, 其平均直径为50nm, 长度为800~1600nm. 研究表明, 当水/表比(ω)为6~15、油/表比(γ)在5~12之间、反应物浓度为0.05~0.3mol/L时, 适合于棒状硫酸钙的合成. 性质研究发现, 纳米硫酸钙在339nm处有较强的紫光发射, 这在纳电子器件等领域有广阔的应用前景.

关键词 [硫酸钙](#) [纳米棒](#) [反相胶束](#) [软模板](#)

分类号 [0614](#)

Facile Synthesis and Photoluminescence of Calcium Sulphate Nanorods

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Abstract In this paper, uniform and dispersive $\text{CaSO}_4 \cdot 0.662\text{H}_2\text{O}$ nanorods were synthesized in reverse micellae (W/O microemulsion) containing AEO, cyclohexane, and n-pentanol. The average diameter and length were 50nm and 800~1600nm respectively. The study of the preparation conditions showed that the preferred synthesis conditions were: ω ($\text{H}_2\text{O}/\text{surfactant}$)=6~15, γ ($\text{oil}/\text{surfactant}$)=5~12 and the reactant concentration 0.05~0.3mol/L. The property study showed that nano calcium sulphate could produce stronger purple light emission at 339nm. This property would have a very expansive application prospect in the fields of nano-electric devices and so on.

Key words [calcium sulphate](#) [nanorods](#) [reverse micelles](#) [soft template](#)

DOI:

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