

反相胶束法控制合成不同形貌半导体Ag₂S纳米晶

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收稿日期 修回日期 网络版发布日期 接受日期

摘要 采用水(溶液)/Triton X-100/环己烷/正戊醇反相胶束体系,制备出不同形貌的Ag₂S纳米晶-100nm、长度为2.0-3.5 μ m、长径比为20-70的纯相Ag₂S对合成Ag₂S的形貌和尺寸的影响进行了研究,获得了控制合成不同形貌Ag₂S纳米晶的反应条件.显微镜分析进行了表征.

关键词 [硫化银](#) [纳米材料](#) [胶束](#) [环己烷](#) [戊醇](#) [结构表征](#)

分类号 [0612](#)

Synthesis and Characterization of Ag₂S Nanocrystals with Different Morphologies in Micelles

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Abstract Semiconductor Ag₂S nanocrystals with different morphologies were synthesized in quaternary W/O microemulsion solution containing Triton X-100, cyclohexane and n-pentanol. And particularly, the synthesis of Ag₂S nanorods with lengths up to 2.0-3.5 μ m and aspect ratio of 20 - 70 has been reported for the first time. The reaction conditions were optimized through investigations on the influences of W₀, the concentration of the reactant, and the aging time on the morphology and the sizes of the products. Transmission electron microscopy (TEM) was utilized to characterize the shape and size of the obtained products.

Key words [Ag₂S](#) [NANOPHASE MATERIALS](#) [MICELLE](#) [CYCLOHEXANE](#) [PENTANOL](#) [STRUCTURE CHARACTERISTICS](#)

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