

多臂 CdS纳米晶体的水热控制合成

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摘要 以络合剂为辅助剂, 用水热方法合成了多臂CdS纳米晶体, 用TEM、ED、SEM、RAMAN、PL等技术对产物进行了表征. 研究了不同络合剂对水热合成多臂CdS纳米晶体的影响, 以乙二醇胺、甲胺、乙胺为辅助剂水热合成所得三臂CdS的产率分别为2%、35%、85%, 而以氨为辅助剂时, 仅能得到颗粒状CdS纳米晶体. 此外, 对水热合成多臂CdS纳米晶体的形成机制作了初步探讨.

关键词 [CdS](#) [多臂纳米晶体](#) [水热合成](#)

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Hydrothermal Control Synthesis of Multi-armed CdS Nanocrystallites

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Abstract Multi-armed CdS nanocrystallites were prepared via the hydrothermal method, in which CdCl₂·2.5H₂O and (NH₄)₂S acted as the starting materials. The as-prepared products were characterized by TEM, ED, SEM, RAMAN, PL, respectively. Different ligands were chosen as the assistance agent to investigate their effects on the multi-armed CdS nanocrystallites. It was found that the yields of multi-armed CdS nanocrystallites were 2%, 35%, and 85% when ethylenediamine, methylamine and ethamine were employed as the assistance agent. Only nano-particles of CdS were observed when ammonia was used. In addition, the mechanism for the formation of multi-armed CdS nanocrystallites was primarily discussed.

Key words [CdS](#) [multi-armed nanocrystallites](#) [hydrothermal synthesis](#)

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