中南大学学报 自然科学版 英文版

教育部 主管
中南大学 主办

论文摘要

中南大学学报(自然科学版)

ZHONGNAN DAXUE XUEBAO(ZIRAN KEXUE BAN)

Vol.40 No.4 Aug.2009

[PDF全文下载] [全文在线阅读]

文章编号：1672-7207(2009)04-0904-05

CdSe量子点的制备及其被聚乳酸包被的研究

谷 俐，李 菲，张 洋，谷丹青

(嘉兴学院 生物与化工学院，浙江 嘉兴，314001)

摘 要：以巯基乙酸为稳定剂，制备CdSe量子点，并考察聚乳酸对量子点的包被。采用透射电镜对CdSe量子点被聚乳酸包被前后的形貌进行观察，采用X射线粉末衍射、紫外可见吸收光谱、荧光光谱和荧光显微镜对产物进行分析和表征。研究结果表明：CdSe为闪锌矿型(立方形)的球形纳米晶，量子点的平均尺寸为4 nm，具有明显的量子尺寸效应和较强的荧光强度；组装聚乳酸的量子点相对于纯的量子点尺寸明显增大(40 nm)，荧光强度有所增强，且量子点被包裹在内核，具有明显的核壳结构。

关键字：量子点；聚乳酸；包被；荧光

Preparation of CdSe quantum dots and coating with polylactide

GU Li, LI Fei, ZHANG Yang, GU Dan-qing

（College of Biological and Chemical Engineering, Jiaxing University, Jiaxing 314001, China）

Abstract: With thioglycollic acid as stablizing agent, cadmium selenide (CdSe) quantum dots were prepared, and the coating of CdSe with polylactide was studied. By means of X-ray diffractrometry, ultraviolet absorption spectroscopy, spectrofluorimetry, transmission electronic microscope and fluorescent microscope, CdSe was identified as cubical nanocrystal with an even size of 4 nm, and enjoys obvious quantum size effect and strong fluorescence. Compared with pure quantum dots, CdSe quantum dots coated with polylactide are characterized with large size, typical nuclear shell structure and stronger fluorescence.

Key words:quantum dots; polylactide; coating; fluorescence