

论文

用于微生物体标记的CdTe半导体纳米晶超声波水相合成

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摘要:

利用超声波法制备高质量CdTe半导体纳米晶体, 采用该方法不仅降低了实验成本, 简化了实验流程, 而且还可制备出量子产率达到50%的CdTe纳米晶体, 具有较好的光谱学性质, 可用于莱姆病伯氏螺旋体(微生物)的荧光标记, 有利于提高对该病的检测效率.

关键词: 超声波合成 碲化镉 半导体纳米晶体

Ultrasonic Wave-assisted Synthesis of CdTe Semiconductor Nanocrystals in Water Applied to Biolabel of Micoorganism

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Abstract:

Taking advantages of ultrasonic wave-assisted synthesis CdTe semiconductor nanocrystals were synthesized under mild conditions. As compared with traditional methods, the time and cost for the preparation of the CdTe nanocrystals were reduced, and on the other hand, the photoluminescence quantum yield(50%) of the as-prepared CdTe semiconductor nanocrystals was improved. Furthermore, we have succeeded in detecting the living Borrelia burgdorferi of Lyme disease by its photoluminescence image using CdTe nanocrystals.

扩展功能

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