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Fluorescence labelling

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Abstract

Fluorescence labelling has become a technique of increasing importance in modern biotechnology which is increasingly underpinned by advances in materials science. In this paper we describe our contributions to this area. In order to expand the understanding of *in vivo* fluorescence labelling we carried out the staining of membrane-based structures in effectively secreting *Trichoderma reesei* using the fluorescent dye FM 4-64 and their confocal microscopy studies. We also describe the observation of efficient fluorescence upconversion in Sm-doped Gd_2O_3 nanopowders synthesised by the spray pyrolysis method. This result indicates the potential for Sm-doped Gd_2O_3 to perform as a fluorescent label excited in red, yellow and green and emitting in blue. Finally, we report a simple approach for synthesizing water-soluble CdS nanoparticles by using ethylenediaminetetraacetic acid disodium salt dihydrate (EDTA) as a stabilizer.



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