FLUORESCENT ORGANIC NANOPARTICLES

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Fluorescent inorganic nanoparticles have found applications as biological labels,[1] in photovoltaic cells,[2] as light emitting diodes,[3] and as optical sensors.[4] Fluorescent organic nanoparticles (FONs), on the other hand, have received less attention, even though they allow wider variability and flexibility as materials and in synthesis. Since Nakanishi *et al*. reported the use of FONs in third order nonlinear optics, composite and hybrid organic and inorganic nanoparticles have been developed and studied for applications as sensors and biological detectors.[5-8] The electronic and optical properties of nanoparticles differ from those of the bulk of the same compound because they are structurally distinct and exhibit confinement effects caused by their finite sizes.[9] Thus, given the diversity of organic compounds, development of new FONs will open up pathways for newer applications in various fields. Suitably susbtituted ethynylphenyl carbazoles (PBM and PPM) form highly stable fluorescent organic nanoparticles (FONs), and their emission in the blue-green and orange-red regions could be reversibly switched on/off by a change in the THF/water ratio.[10] The work reported will focus on the potential for such compounds in various electronic devices.

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