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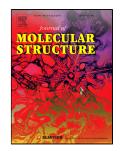
Photophysical and electrochemical properties of oligothiophene in non-polymeric and polymeric solvents

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1	Photophysical and electrochemical properties of oligothiophene in non-
2	polymeric and polymeric solvents
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12	Abstract
13	Effect of different solvents on emission behavior of oligothiophene (OT) has been explored in
14	this article. OT was synthesized using a modified cationic surfactant assisted polymerization
15	technique. The average molecular weight was 1006 (which indicated an addition of 12 thiophene
16	units) with a wider distribution (solid state crystallinity of 26 % from X-ray crystallography). A
17	gradient solubility of OT was obtained in N, N-dimethyl sulphoxide (95%), ethanol (82%) and
18	chloroform (65%) due to descending solvochromatic interaction. A higher emission intensity
19	(blue) and fluorescent quantum yield (11%) was obtained in DMSO than in ethanol (quantum
20	yield 7%) due to a lower HOMO-LUMO transition energy. Conversely, excitation in a high
21	molecular weight solvent like poly(vinyl alcohol) displayed a low emission intensity and
22	fluorescent quantum yield (3%) despite lower HOMO-LUMO transition energy mainly due to

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