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Aggregation induced emission enhancement of pyrene-appended Schiff base luminophore and its photovoltaic effect

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Abstract: Pyrene appended Schiff base, 1,3-bis-((E)-pyrene-1-ylmethyleamino)propan-2-ol (HL), a fluorophore, shows aggregation induced emission enhancement upon addition of water in DMF (4:1, v/v) solution; the quantum yield (Φ) is increased 0.034 to 0.450. Under illumination of solar radiation HL (10^{-3} M) impregnated photovoltaic cell generates 4.4 mA/6.29 V electricity. DFT and TD-DFT computation of optimized geometry of HL has explained the photophysical properties.

Keywords: Pyrene Schiff base; aggregation induced emission; high quantum yield; photovoltaic effect; DFT and TD-DFT computation

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