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Aggregation Induced Emission Properties of New Cyanopyridone Derivatives

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Abstract

Nowadays, fluorescent organic compounds have attracted much research interest due to their academic significance and applications. The present article deals with the fluorescence behaviors of conjugated cyanopyridone based compounds (**CP1-5**) possessing various donor/acceptor moieties. These compounds showed aggregation-induced emission (AIE) properties in their THF/H₂O mixtures due to the restriction of intramolecular rotation and exhibited a blue emission behavior in their aggregated state. During the AIE study, compound (**CP-1**) showed a red shift in the emission profile and rest of the compounds exhibited a blue shift in their emission profile. Further, field emission scanning electron microscope (FESEM) and Epi-fluorescence microscopic studies showed that the stronger emission of these compounds is mainly due to the formation of large-sized aggregates in the THF/water mixture than the pure THF.

Keywords: Cyanopyridone; Aggregation Induced Emission; UV-Vis Absorption; Fluorescence Emission; Epi-fluorescence microscopy; Field Emission Scanning Electron Microscope.

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