

Fluorescent Nanoscale Zinc (II)-Carboxylate Coordination Polymers for Explosive Sensing

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Experimental details

2,4,6-trinitrotoluene (TNT, 99%) were purchased from AccuStandard. 2,4-dinitrotoluene (DNT, 97%) and nitromethane were purchased from Acros. All other molecules and solvents (HPLC or spectroscopic grade) were purchased from Fisher or Aldrich and used as received.

UV-vis absorption spectra and fluorescence spectra were measured on a PerkinElmer Lambda 25 spectrophotometer and LS 55 fluorometer, respectively. SEM measurement was performed with a FEI XL30 electron microscope, and the samples were directly drop-cast on the aluminum foil. Powder X-ray diffraction (PXRD) data were collected at ambient temperature on a Bruker D8 Advance diffractometer at 40 kV, 40 mA for Cu K α ($\lambda = 1.5418 \text{ \AA}$). The infield detection of nitromethane (Fig. 4b) was measured with an Ocean Optics USB4000 fluorometer. The fluorescence quenching by explosive vapor was monitored following similar methods previously developed in our lab.¹⁻²

Reference:

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