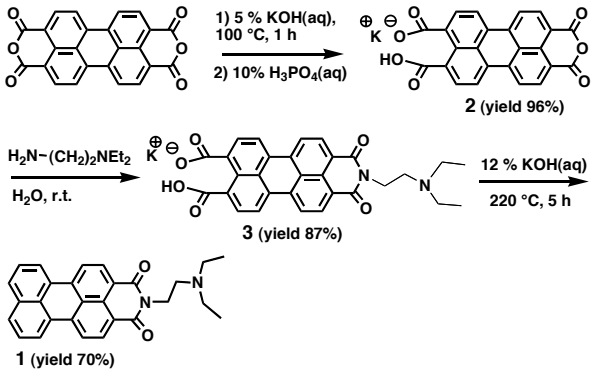
Supplementary Materials

Experimental

Compound **1** was synthesized according to the method outlined in scheme 1.



Scheme 1 Synthetic scheme of compound **1**.

Deuterated trifluoroacetic acid (TFA-d, D-99.5%) and deuterated chloroform ($CDCl_3$, D-99.8%) used for ^1H and ^{13}C NMR measurements were purchased from Cambridge Isotopes. ^1H and ^{13}C NMR spectra were acquired on either a Varian VT 500 MHz or a GE QE 300 MHz spectrometer. IR spectra of **1** was obtained in the form of KBr pellets prepared with dried KBr using a mini-press from SpectraTech, Inc. Infrared spectrum was recorded on a Perkin-Elmer Spectrum 2000 FT-IR spectrometer. Electronic spectra were obtained with a dual-beam Perkin Elmer Lambda 950 and software UV-WIN Lab version 5.1.5. Visible spectra of aqueous solutions were taken in cuvettes of the desired path length (1-mm, 1-cm, or 10-cm). Single crystal X-ray diffraction analysis was performed using a Bruker-Nonius SMART Apex CCD-based single crystal diffractometer using Mo Kα radiation. The structure was solved by direct methods.

Photographs shown in Figure 3 were acquired using a Nikon N70 single lens reflex camera mounted on the trinocular head of a Nikon E600pol microscope with strain free objectives. In transmission mode, the samples were viewed through a single polarizer placed between the light source and sample. No color filters were used.

Images of fluorescence emission from crystals shown in Figure 7 were taken using a Photometrix Cascade 1K CCD camera mounted on a trinocular head of a Nikon E600pol microscope with strain free objectives. In fluorescence mode, a CY3 HYQ filter block (Nikon, Ex 530 – 560 nm, Em 573 – 648nm) and a single polarizer was used between the sample and the eyepiece, polarizing the emitted light from the sample. Fluorescence spectra were acquired using a Jobin-Yvon Horiba Fluorolog 3-222 spectrophotometer and software FluorEssence. Spectra of solution were performed by placing the solution in a cuvette in the sample chamber of Fluorolog 3-222. Spectra of crystals were acquired using optical fiber accessories to introduce the excitation light from Fluorolog to the microscope and to send emission light from the sample viewed under microscope back to the Fluorolog emission chamber and detector.

Absorption spectra of crystals were acquired using the light source from the microscope as the incident light source and the transmitted light from the sample viewed under microscope was sent through optical fiber accessories to a monochromator chamber equipped with double gratings and a single photon detection cooled photocathode TBX-05. All spectra are background corrected.

Compound **3**: Monopotassium salt **2** (9.82 g, 21.9 mmol), prepared according to the procedure reported by Tröster, was suspended in water (300 mL) at room temperature. *N,N*-diethylethylene diamine (10.63 g, 89.60 mmol) dissolved in 50 mL of water was added slowly to the suspension of **3**. The mixture was stirred for 3 h at room temperature. Acetone (1L) was added into the resulting red solution to induce precipitation. The mixture was allowed to stand overnight, and the resulting brick red precipitate was collected using suction filtration. The residue was resuspended in acetone and the mixture was refluxed for an hour. The brick red solid was then isolated by vacuum filtration, washed with acetone, and placed under vacuum at 120 °C overnight to yield 10.90 g (19.94 mmol, 91 %) of **3** as a brick red solid.

Compound **1**: Compound **3** (5.43 g, 9.93 mmol) and KOH (5.67 g, 86.75 mmol) were placed in a teflon cup. Double distilled water (80 g) was added. After sonication for 30 min, the Teflon cup was then placed inside a 325-mL steel reactor vessel with a steel lid. The closed reactor vessel was completely submerged in a sand bath in a detonation safe room. The temperature was ramped to 220 °C and maintained for 12 h. (*Caution: The use of a steel reactor with a safety pressure release valve is strongly recommended. The reaction vessel should be cooled back to room temperature before opening the lid.*) The resulting metallic brick red suspension was washed out with excess amount of water into a filter funnel and collected by suction filtration. The resulting residue was washed with water until the filtrate was colorless. After drying under vacuum, the residue was dissolved in $CHCl_3$ (200 mL) and the insoluble solid was removed by suction filtration. The solution in $CHCl_3$ was added to a basic alumina pad. The basic alumina was eluted with acetone/$CHCl_3$ (v/v=2:8). The eluent was collected until the eluent became colorless. The solvent was then evaporated to give compound **1** as red needle-like crystals in 70% yield. ^1H NMR (500 MHz, $CDCl_3$): δ= 8.10 (d, ^3J (H,H) = 7.5 Hz, 2H; Ar-H), 7.93 (d, ^3J (H,H) = 7 Hz, 2H; Ar-H), 7.81 (d, ^3J (H,H) = 7.5 Hz, 2H; Ar-H), 7.67 (d, ^3J (H,H) = 8.5 Hz, 2H; Ar-H), 7.38 (t, ^3J (H,H) = 8.5 Hz, 2H; Ar-H), 4.23 (t, ^3J (H,H) = 8 Hz, 2H; a-CH_2), 2.80 (t, ^3J (H,H) = 8 Hz, 2H; b-CH_2), 2.71 (q, ^3J (H,H) = 7 Hz, 4H; -N-C$\underline{H_2}$$CH_3$), 1.15 (t, ^3J (H,H) = 7 Hz, 6H; CH_3) ppm; ^{13}C NMR (125 MHz, [D]TFA): δ= 168.6, 142.9, 136.2, 135.6, 135.2, 132.0, 129.7, 129.3, 129.0, 128.3, 128.1, 122.5, 119.1, 54.6, 51.5, 38.7, 9.8 ppm; UV-vis (2.1 x 10^{-4} M of the acetate salt in H_2O) λ_{max} (ε, M^1 cm^{-1}) = 491 nm (18,000); UV-vis (2.5 x 10^{-4} M in $CHCl_3$) λ_{max} (ε, M^{-1} cm^{-1}) = 489 nm (36,000), 508 nm(34,000); IR (KBr): ν = 2965 (m), 2806 (w), 1688 (s), 1649 (s), 1592 (s), 1571 (m), 1500 (w), 1423 (w), 1365 (s), 1295 (m), 1244 (m), 1211 (w), 1162 (w), 1088 (w), 855 (w), 837 (w), 810 (s), 752 (s) cm^{-1} ; HRMS (DEI, *m/z*) Calcd for $C_{28}H_{24}N_2O_2$ (M^+), 420.1838; found: 420.1822.