An Infinite Photoluminescent Coordination Nanotube \([\text{CuSCN}(L)]_{\text{0.5}}(\text{DMF})_{0.5}\)
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Materials and Methods

1,3-Imidazolidine-2-thione was prepared according to the literature method (Allen C.F.H.; Eden C.O.; Van Allen, J. Organic Syntheses, Col. Vol. III, Wiley, New York, 1959, p. 394). All other reagents and solvents were commercially purchased without further purification. Infrared spectra were obtained in KBr disks on a Bruker Vector 22 spectrophotometer with KBr pellets in the 4000 - 400 cm⁻¹ region. Thermal analysis (TG) was carried out in a nitrogen stream using Seiko Extrad 6000 TG/DTA equipment with a heating rate of 10 °C/min. XRD patterns were measured with Cu Kα radiation using a Rigaku D/max-RA diffractometer. Photoluminescence analyses were performed on a Hitachi 850 fluorescence spectrophotometer.

Figure S1. An ORTEP drawing of the asymmetric unit of complex 1 at the 50% probability (H atoms are omitted for clarity).

Figure S2. TG-MS profiles of complex 1 obtained with imidazolidine-2-thione, thiourea or hexahydropyrimidine-2-thione showing the release of the DMF guest molecules (m/z: 73, red line; m/z:44, green line) around 120ºC.
Figure S3. TG-MS profiles of complex 1 exchanged with CH$_3$CH$_2$OH, showing the release of the DMF guest molecules (m/z: 73, red line; m/z: 44, green line) and CH$_3$CH$_2$OH (m/z: 45, purple line) around 120ºC.

Figure S4. $^1$H NMR spectrum of complex 1 obtained with thiourea/ imidazolidine-2-thione after immersed in CDCl$_3$ for three days at room temperature, showing the release of DMF molecules.
Figure S5. TGA-DTA curves of complex 1 under nitrogen.

Figure S6. PXRD patterns for 1: (a) the simulated, (b) the as-synthesized, (c) after removal of guest solvent molecules.
Figure S7. Solid state UV absorption spectrum of complex 1 at room temperature.