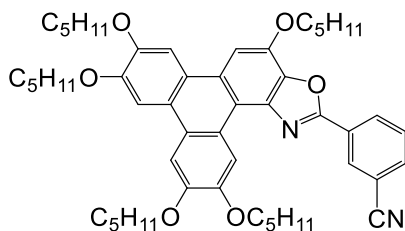


TpOx-Ph-m-CN

TpOx-Ph-*m*-CN is a UV excitable fluorescent material with a polycyclic aromatic donor-acceptor structure where the triphenoxazole core acts as a donor and the aromatic group on the two position of the oxazole (3-cyano-phenyl) act as the acceptor group. The push-pull, donor-acceptor, structure facilitates intramolecular charge transfer in the excited state that results in a 244 nm emission Stokes Shift. TpOx-Ph-*m*-CN is also a photo-conducting Discotic Liquid Crystalline (DLC) material with room temperature mesophase. TpOx-Ph-*m*-CN is designed for 355 nm and 405 nm excitation with emission at 515 nm with quantum yield of 0.51, high thermal, chemical and photostability. TpOx-Ph-*m*-CN has potential uses in fluorescent dye staining, organic electronics and photonics, and imaging applications.

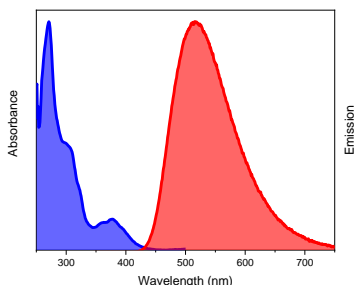
Chemical Structure



Chemical Data

- Catalogue Number: 922846
- Other Name: TpOx-Ph-*m*-CN, CT 515 11 063 01 01
- CAS #: 2612025-77-9
- Molecular Formula: $C_{51}H_{64}N_2O_6$
- Molecular Weight: 801.08

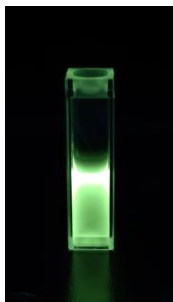
Absorbance and Emission spectra in Ethyl Acetate



Photophysical Data

- In Solvent: EtOAc
- Abs λ_{max} (nm) = 271
- Emis λ_{max} (nm) = 515
- pSS (nm) = 244
- ϵ ($M^{-1} cm^{-1}$) at Abs λ_{max} = 90,000
- Quantum Yield (Φ) = 0.51
- Fluorescence Lifetime (ns) = 7.33

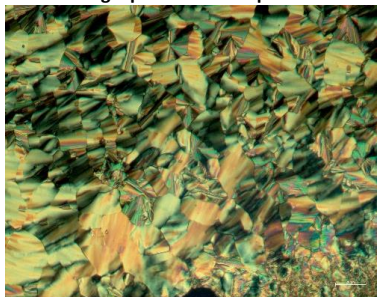
Fluorescence Emission



Material Data

- Physical State: Crystal Powder
- Appearance (Colour): Pale yellow
- Polymorph crystalline phase: Solid, Discotic Liquid Crystal, Isotropic
- Solubility: THF > 1 mg/mL, MeCN < 0.03 mg/mL, DMSO < 0.3 mg/mL, DCM > 1 mg/mL

Polarising Optical Microscope Picture



Phase Transition Data

Phase transition temperature:

- Heating Crys - Col_h – <22°C, Col_h - Iso – 253°C
- Cooling Iso - Col_h – 250°C, Col_h - Crys – <22°C