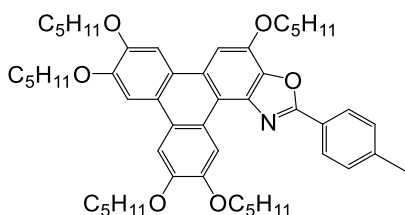


# TpOx-Ph-*p*-Me

TpOx-Ph-*p*-Me 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 (4-methyl-phenyl) act as the acceptor group. The push-pull, donor-acceptor, structure facilitates intramolecular charge transfer in the excited state that results in a 185 nm emission Stokes Shift. TpOx-Ph-*p*-Me is also a photo-conducting Discotic Liquid Crystalline (DLC) material with mesophase transition onset temperature of 107°C. TpOx-Ph-*p*-Me is designed for 355 nm excitation with emission at 455 nm with quantum yield of 0.54, high thermal, chemical and photostability. TpOx-Ph-*p*-Me has potential uses in fluorescent dye staining, organic electronics and photonics, and imaging applications.

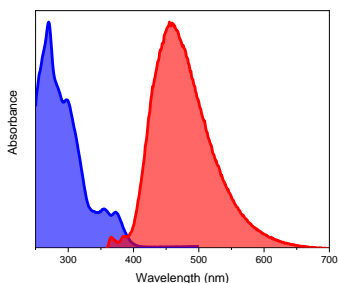
## Chemical Structure



## Chemical Data

- Catalogue Number: 922870
- Other Name: TpOx-Ph-*p*-Me, CT 455 11 036 01 01
- CAS #: 2612025-70-2
- Molecular Formula: C<sub>51</sub>H<sub>67</sub>NO<sub>6</sub>
- Molecular Weight: 790.10

## Absorbance and Emission spectra in Ethyl Acetate



## Photophysical Data

- In Solvent: EtOAc
- Abs  $\lambda_{\text{max}}$  (nm) = 270
- Emis  $\lambda_{\text{max}}$  (nm) = 455
- pSS (nm) = 185
- $\epsilon$  (M<sup>-1</sup> cm<sup>-1</sup>) at Abs  $\lambda_{\text{max}}$  = 134,000
- Quantum Yield ( $\Phi$ ) = 0.56
- Fluorescence Lifetime (ns) = 4.69

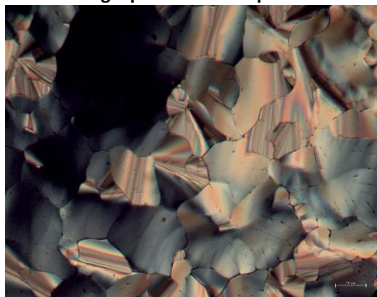
## Fluorescence Emission



## Material Data

- Physical State: Crystal Powder
- Appearance (Colour): Pale yellow
- Polymorph crystalline phase: Solid, Discotic Liquid Crystal, Isotropic
- Solubility: THF > 1 mg/mL, DMSO < 0.33 mg/mL, DCM > 1 mg/mL

## Polarising Optical Microscope Picture



## Phase Transition Data

Phase transition temperature:

- Heating Crys - Col<sub>h</sub> – 107°C, Col<sub>h</sub> - Iso – 190°C
- Cooling Iso - Col<sub>h</sub> – 187°C, Col<sub>h</sub> - Crys – 69°C