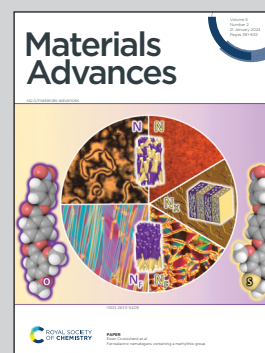


Showcasing research from Professor Alaasar's laboratory,
Institute of Chemistry, Faculty of Natural Science II,
Martin-Luther-University, Halle-Wittenberg, Germany.

Luminescent and photoconductive liquid crystalline lamellar
and helical network phases of achiral polycatenars

New functional achiral bithiophene-based triple chain π -conjugated liquid crystals were synthesized and investigated. They exhibit photoconductivity, photoluminescence (PL), phosphorescence and electroluminescence in both smectic and cubic phases at temperatures up to 150 °C. The smectic phases could be polarized by an applied electric field, which turned a photoresistive device into both a photodiode and a light-emitting diode. Therefore, these materials could be applied in optoelectronic devices. A prototype of such a device, namely a wavelength-measuring photodetector, is demonstrated.

As featured in:



See Mohamed Alaasar,
Masafumi Yoshio *et al.*,
Mater. Adv., 2024, 5, 561.