

G T R & R C M S S e m i n a r

Stars in your eyes - monodisperse macromolecules for photonic and optoelectronic applications



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We have developed a synthetic approach that allows us to synthesise monodisperse organic semiconductor macromolecules on the gram scale. In contrast to conjugated polymers, batches are prepared with 100% reproducibility and the products can be isolated in high purity. These attributes are extremely well valued, because subsequent work towards device optimisation (design, processing, annealing, etc) can rely on the consistent behaviour of the organic semiconductor. Such compounds have been made for photonic and optoelectronic applications, such as organic lasers, downconvertors in hybrid LEDs, visible light communications, OLEDs and OPVs.

For the applications mentioned above, the materials have been designed to be amorphous with excellent film-forming properties and compatibility in composites. The latter includes hybrid LED devices and as wide band gap materials in optically transparent OPVs. This talk will highlight some of our recent work on the synthesis and application of star-shaped organic semiconductors.



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