HyperOLED

Development of high-performance, hyperfluorescence OLEDs for use in display applications and solid state lighting

January 2017 – December 2019

The HyperOLED project will develop innovative high-performance OLEDs by combining Thermally Activated Delayed Fluorescence (TADF) molecular hosts with novel, specifically adapted fluorescence emitters. The project will help to create reliable TOLAE-enabled devices with increased functionality, improved performance and longer lifetimes for use in display applications and solid state lighting.

To develop the hyperfluorescence OLEDs, the following scientific and technical objectives will be targeted:

- *Objective 1: Develop adapted fluorescence emitters*
- *Objective 2: Develop TADF hosts*
- *Objective 3: Photo-physically characterise the fluorescence emitters and TADF hosts*
- *Objective 4: Anisotropic molecular orientation for enhanced performance*
- *Objective 5: Design and test prototype hyperfluorescence OLEDs*
- *Objective 6: Fabricate and evaluate demonstration hyperfluorescence microdisplays*

OLED Materials

- Fluorescence emitters (Merck)
- TADF Host (Durham University)
- Characterisation (Durham University)

OLED Stacks

- Optical anisotropy (Fraunhofer-IOF)
- Hyperfluorescence OLEDs (Merck)

OLED Micro-displays

- Hyperfluorescence Microdisplay (Microoled)

- Project management , Dissemination and Technology transfer (Intelligentsia Consultants, Merck, Fraunhofer-IOF, Durham Univ. and Microoled)

Merck microoled Durham University Fraunhofer IOF intelligentsia consultants

European Commission

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