

DISIT Seminar Series

2026



Tuesday 10th
MARCH



14.30 - 15.30



Room 204



Design, Structure-Properties Relationship and Application of Chiral Emitters

[Dr. Gregory Pieters](#)

CEA Paris-Saclay, SCBM



UNIVERSITÀ DEL PIEMONTE ORIENTALE



SCAN HERE
TO GET MORE INFO



Design, Structure-Properties Relationship and Application of Chiral Emitters

[Dr. Gregory Pieters](#)

CEA Paris-Saclay, SCBM

gregory.pieters@cea.fr

The investigation into the characteristics of small organic molecules exhibiting circularly polarized luminescence (CPL) has become a dynamic and prominent area of research. This surge in interest is attributed to the manifold potential applications of these chiral compounds in diverse fields such as nanomaterials, optoelectronics, photonic devices, as well as molecular recognition systems and switches. Particularly in the realm of display technology, the utilization of CPL-active fluorophores as emissive dopants in circularly polarized organic light-emitting diodes (CP-OLEDs) has recently emerged as a compelling strategy. This approach aims to mitigate the impact of anti-glare filters on brightness, consequently reducing power consumption in such devices.^[1]

During this presentation, we will outline our recent endeavors focused on the design and optimization of chiral emitters that amalgamate thermally activated delayed fluorescence (TADF) properties with CPL emission. The discussion will encompass their application as emissive dopants in both bottom and top emission CP-OLED devices.^[2-4] In the latter part of the presentation, attention will shift to the development of the first CPL-active molecules based on excited state internal proton transfer (ESIPT) fluorescence.^[5] Finally, we will discuss the potential to engineer chiral functional materials through the control of dynamic chirality, shedding light on innovative possibilities in this exciting avenue of research.^[6]

References

1. L. Frédéric, A. Desmarchelier, L. Favereau, G. Pieters, *Adv. Funct. Mater.* 2021, 2010281
2. S. Feuillastre, M. Pauton, L. Gao, A. Desmarchelier, A. J Riives, D. Prim, D. Tondelier, B. Geffroy, G. Muller, G. Clavier, G. Pieters, *J. Am. Chem. Soc.* 2016, 3990
3. L. Frédéric, A. Desmarchelier, R. Plais, L. Lavnevich, G. Muller, C. Villafuerte, G. Clavier, E. Quesnel, B. Racine, S. Meunier-Della-Gatta, J.-P. Dognon, P. Thuéry, J. Crassous, L. Favereau, G. Pieters, *Adv. Funct. Mater.* 2020, 2004838
4. L. Poulard, S. Kasemthaveechok, M. Coehlo, A. Kumar Ramar, L. Frédéric, P. Sumsalee, T. d'Anfray, S. Wu, J. Wang, T. Matulaitis, J. Crassous, E. Zysman-Colman, L. Favereau, G. Pieters, *Chem. Commun.* 2022, 6554
5. M. Coehlo, G. Clavier, G. Pieters, *Adv. Optical Mater.* 2022, 2101774
6. *Angew. Chem.* 2025, e202414490

