Linear and Nonlinear Chiroptical Properties of Artificial Aromatic Oligomers

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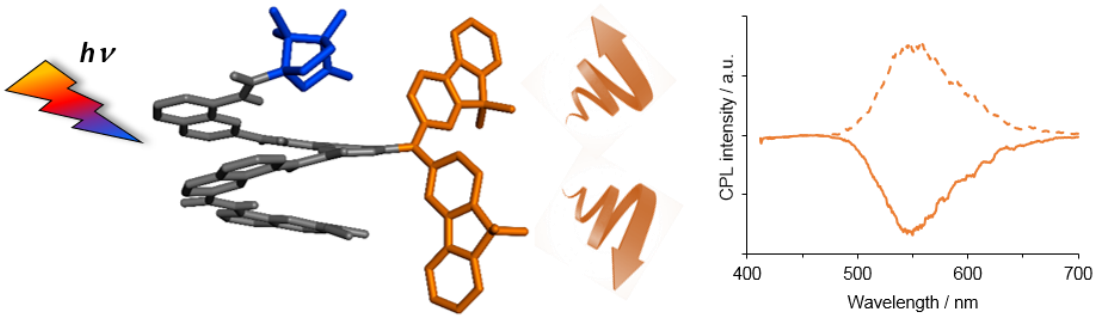
The development of molecular architectures combining chirality, luminescence and nonlinear optical properties is becoming a key for advanced technologies and bio-imaging. In this context, we are interested in the development of chiral supramolecular helical architectures based on artificial aromatic oligomers featuring unique linear and nonlinear chiroptical properties that are *Circularly Polarized Luminescence (CPL)* and *Second-Harmonic Generation (SHG) by scattering* in solution. The exceptional modularity of the quinoline-derived helical oligomers foster the rational design and preparation of highly luminescent systems readily adjustable emission wavelength.[1] Strategies are applied to amplify the chiroptical properties: structural variation & length increase of the helical scaffold, multiplication of fluorophore, etc. Moreover, electron-donating and electron-withdrawing substituents introduced at relevant positions of the oligomeric sequence allow to tune the polarization and NLO properties of these systems.[2] Complemental spectroscopic techniques (*e.g.* CD, CPL, SHG) are implemented to help us decipher structure/property relationships within these supramolecular architectures.



[1] E. Merlet, K. Moreno, A. Tron, N. McClenaghan, B. Kauffmann, Y. Ferrand and C. Olivier, *Chem. Commun.* **2019**, *55*, 9825.

[2] D. Verreault, K. Moreno, E. Merlet, F. Adamietz, B. Kauffmann, Y. Ferrand, C. Olivier, V. Rodriguez, *submitted*.