

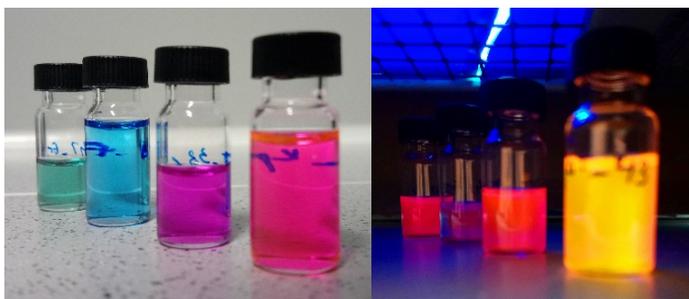
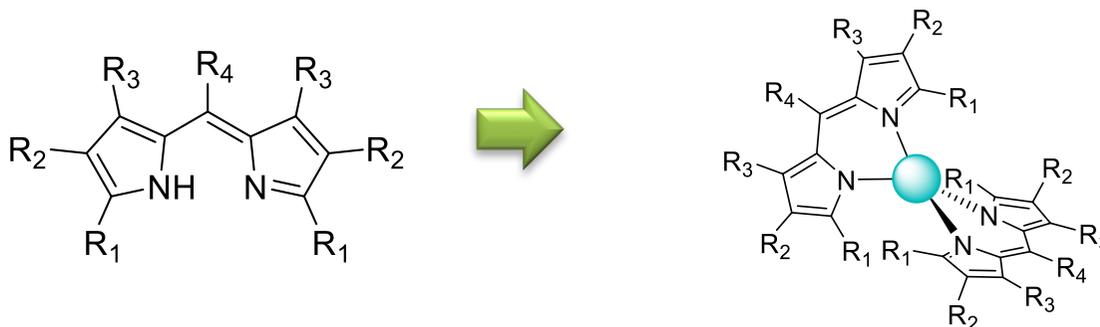
## Light-harvesting antennae based on dipyrromethene-complexes

**Starting date:** August 2018 or later

**Suitable for:** Master/Bachelor thesis

Chlorophylls are chromophores that are chosen by nature to collect efficiently solar energy in plants. This energy is transferred to reaction centres, where it is converted to chemical energy via complicated photosynthetic processes.<sup>[1]</sup> Inspired by nature, the synthesis of supramolecular assembly that absorb visible light is our main interest. Dipyrromethenes and their metal complexes have high extinction coefficients in the visible range of the electromagnetic spectrum. Moreover they have the advantage to be easily functionalized.<sup>[2]</sup>

These light-harvesting antennae should be highly fluorescent, in order to induce efficient energy transfer without significant energy losses.



### Your project:

- Synthesis and characterization of functionalized dipyrromethene-ligands;
- Synthesis of new organometallic complex(es);
- Structural characterization;
- Photophysical / electrochemical characterization

[1] (a) B. Bozic-Weber, E. C. Constable, C. E. Housecroft *Coord. Chem. Rev.*, **2013**, 257, 3089-3106 ; (b) L.-L. Li and E. Wei-Guang Diao *Chem. Soc. Rev.* **2013**, 42, 291-304.

[2] (a) S. A. Baudron *Dalton Trans.*, **2013**, 42, 7498-7509; (b) M. Tsuchiya, R. Sakamoto, S. Kusaka, Y. Kitagawa, M. Okumura and H. Nishihara *Chem. Commun.*, **2014**, 50, 5881