Secteur des Sciences et Technologies

UCLouvain

Invitation à la soutenance publique de thèse de

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« Anion Driven Light Induced Spin Crossover Systems towards Multifunctional Coordination Compounds »

qui se déroulera
le vendredi 12 mars 2021 à 9h
En visioconférence
1348 Louvain-la-Neuve

Jury members :

Prof. Yann Garcia (UCLouvain), supervisor
Prof. Eric Gaigneaux (UCLouvain), chairperson
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In the current times, with the technologies progressing very fast, the demand to develop new materials which can offer multifunctionality and whose properties can be controlled by external stimuli is on the rise. Fe(II) spin crossover (SCO) compounds belong to one such class of advanced materials, which exhibit remarkable change in magnetic and optical properties, thus are lauded as potential candidates for various applications including data storage and display devices. The most common approach to induce SCO has been to use temperature as external stimulus, but this is not very practical when imagining commercial applications. Alternatively, using light as trigger to induce SCO presents a fascinating option as it provides the possibility to remotely control a spin transition. In this respect, a novel methodology in which Fe(II) SCO moieties are functionalized with photo-responsive anionic organic molecules is presented thorough this thesis. Functionalization by photo-responsive anions would not only introduce additional photo-responsive properties to the Fe(II) SCO compound but could also result in a light induced SCO. We termed such phenomenon as 'Anion driven light induced spin change' (AD-LISC). This thesis is dedicated to the preparation of the ground work to observe AD-LISC experimentally. In this context, photo-responsive para-sulfocinnamic acid anionic molecules were incorporated into different Fe(II) SCO systems. Light irradiation of the final multifunctional compound resulted in different magnetic and optical properties, hinting towards the successful realization of a partial AD-LISC.