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【705】 Exploring photoswitching pathways in photomagnetic materials with ultrafast optical and X-ray spectroscopies

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I will present the results obtained within my PhD. The main goal was to study the femtosecond photo-switching dynamic in bistable molecular materials, using optical and x-ray ultrafast spectroscopies. A part of this work focuses on the study of Prussian Blue Analogues (CoFe), which are prototype bistable metallic cubic crystals. Among the great interests of these systems are their bistable chromic and ferromagnetic properties from the Low-Spin (LS) to High-spin(HS) which can be driven by light excitation. The bistability is associated with a charge transfer between the two metal sites, and a spin-crossover of the Co site. Our studies, optical (at IPR) and XANES (at ESRF and LCLS) of the ultrafast dynamics, revealed a multistep electronic and structural process.

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