Valence Electronic Structure of Fe-based Photosensitizers from Resonant Inelastic Soft and Hard X-ray Scattering

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Fe-based molecular photosenzitisers have gained considerable interest in recent years due to their potential to replace more expensive noble-metal analogues. In this contribution we have studied a series of $[Fe^{2+}(bpy)_N(CN)_{6-2N}]^{2N-4}$ (N=0 – 3) photoenzitiser complexes to understand the trends in metal to ligand charge transfer state lifetimes by studying their electronic structure with Fe L-edge and K-edge resonant inelastic X-ray scattering.