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A comparison of the spin polarized unoccupied electronic structure of $[\text{Fe}^{II}(\text{TCNE}^-)(\text{NCMe})_2]^+[\text{Fe}^{III}\text{Cl}_4]^-$ determined by XMCD vs. UV-Vis MCD SAAD JANJUA, University of Missouri Kansas City, CHRIS OLSON, KONSTANTIN POKHODNYA, North Dakota State University, ANTHONY CARUSO, University of Missouri Kansas City — A direct comparison between XMCD and UV-Vis MCD of the energy resolution and spin polarization of the unoccupied electronic structure of $[\text{Fe}^{II}(\text{TCNE}^-)(\text{NCMe})_2]^+[\text{Fe}^{III}\text{Cl}_4]^-$ will be presented. Our studies suggest that the enhanced m_j selectivity in UV-Vis MCD, from partially occupied initial states, leads to a greater energy resolution of the unoccupied electronic structure of Fe[TCNE] vs. that allowed by XMCD and may be true for magnetic solids in general. Further, we will show evidence of the spin polarization of the lowest unoccupied state for the Fe[TCNE] organic-based magnet in the context of its applied use in magnetoelectronics.

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