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High Field Electron Paramagnetic Resonance (HFEPR) study on a Mn(IV) monomer ASMA AMJAD, ENRIQUE DEL BARCO, University of Central Florida, STEPHEN HILL, Florida State University and National High Magnetic Field Laboratory, Tallahassee, JOHAN VAN TOL, ANDRZEJ OZAROWSKI, National High Magnetic Field Laboratory, Florida State University, Tallahassee, MAHAMMAD ALI, Jadavpur University — In this work we investigated the magnetic anisotropy of a Mn (IV) monomer via axial and rhombic zero field splitting terms D, E. The d^3 ion sits in an octahedral environment in a P 21/c space group. The complex is studied via single crystal and powder HFEPR over a wide range of frequencies 49GHz to 416GHz and temperatures 2 to 60K. The angle dependence at low temperature and frequency ($\sim$88GHz) reveals a minimum of the resonance field, when the long axis of the crystal is along the magnetic field. The same behavior is observed at higher frequency ($\sim$240GHz). Furthermore, pulse EPR experiments in high frequency quasi-optical spectrometer at low temperature ($\sim$1.487K) a spin echo could be observed and we were able to observe the variation of the T_2 times as a function of the magnetic field orientation, and as a function of the temperature.

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