

Magnetic Properties and Thermal Negativity of Trinuclear and Tetranuclear Ni Ions Complexes

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Abstract

The main topic in this presentation is to discuss the quantum magnetic properties and entanglement of trinuclear $[C_{84}H_{75}N_{12}Ni_3O_3 \cdot 3(ClO_4) \cdot 6.5(C_3H_7NO)]$ and tetranuclear $[C_{24}H_{54}Cl_2N_{10}Ni_4O_{19}] Ni$ ions complexes. For these complexes, a comparison of experimental data with theoretical calculations (exact) of magnetic susceptibility as a function of temperature is illustrated, showing excellent agreement. The study presents the observed correlation between magnetization jumps, magnetic susceptibility peaks, and logarithmic negativity plateaus with changes of external magnetic fields in trinuclear and tetranuclear Ni ions complexes at low temperatures. These observations will require additional experimental measurements under externally applied magnetic fields at low temperatures in future studies.