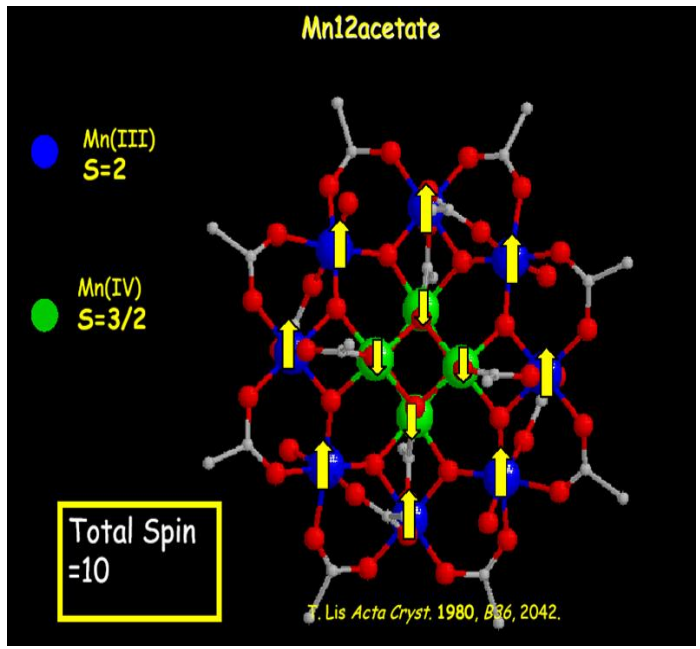
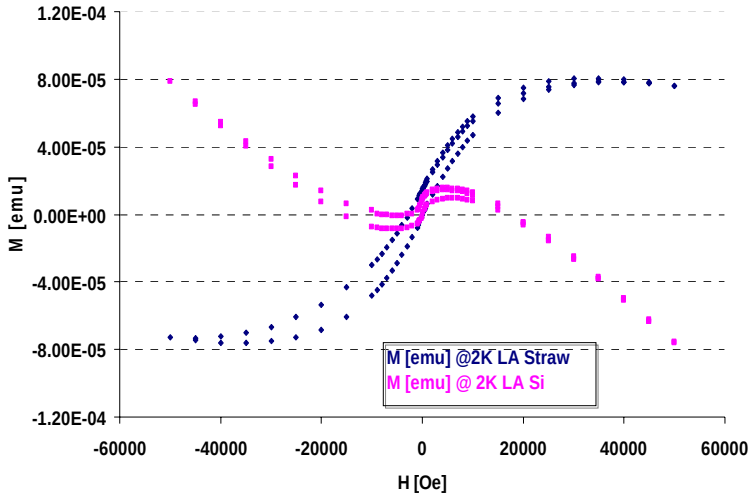
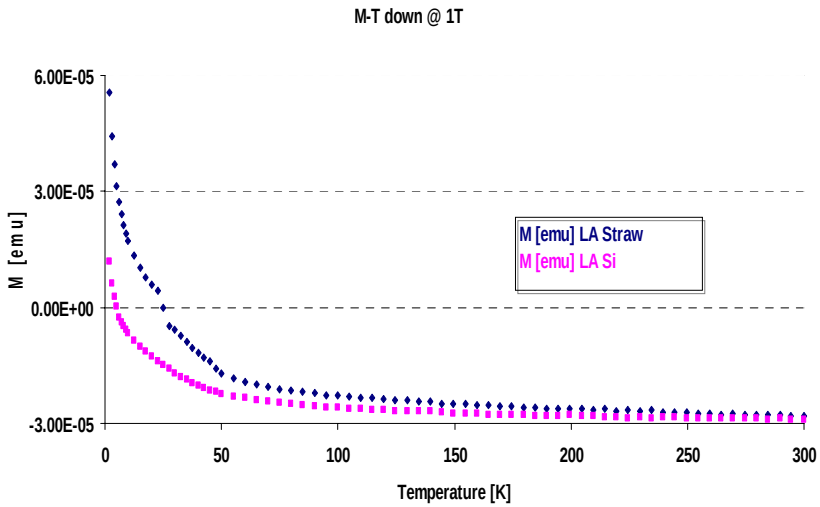
Past Projects: Characterization Studies on Molecular Magnets

- $[Mn_{12}O_{12}(CH_3COO)_{16}(H_2O)_4]_2CH_3COOH_4H_2O$, Mn_{12}-acetate, is a molecular magnet which behaves like an S=10 system with high anisotropy.
- The Laser Ablation and Dip and Dry Technique were used to deposit the Mn_{12}-acetate on the silicon and straw substrates.



Past Projects: Results





- A hysteresis loop was observed for thin films of:
  - Mn_{12}-acetate on straw substrate.
  - Mn_{12}-acetate on silicon substrate.
- The Laser Ablation sample with a deposition of 150 nm had the most distinct hysteresis loop.
- The samples prepared by the DAD technique did not produce a hysteresis loop, which might be due to measurement sensitivity and the very thin Mn_{12}-acetate film (2nm).

Current Project: Transport studies on the magnetic center of $Cs[FeCr(CN)_6]\cdot 1.3H_2O$

- The Prussian blue analog Cr^{III}–CN-Fe^{II} has been shown to exhibit spin-crossover phase transition.
- Due to the relatively high temperatures at which the transfer of the spin angular momentum of the electrons occurs (188K-280K), these compounds have useful applications in industry, especially in reducing power consumption of memory devices.
- We are studying the effects of electronic transport on the magnetic center of spin transfer compounds.