



Contribution ID : 93

Type : Poster

Chemistry and Single Molecule Magnetism of Halogenated 8-Quinolinolatodysprosium(III) Complexes

Thursday, 26 November 2015 13:30 (20)

Long term data storage devices, such as computer hard drive disks, utilize magnetic field orientations of ferromagnet arrays to encode and store information. The size of these devices is therefore contingent upon the size of the magnets used. Molecules capable of magnetic hysteresis, termed single molecule magnets, are of interest then as a means to miniaturize data storage devices. Realization of this application however requires single molecule magnets capable of magnetic hysteresis above the temperature of liquid nitrogen. Effort to increase single molecule magnet thermal stability is therefore twofold. The first is the discovery of new single molecule magnets. The second is the elucidation of how chemical structure influences the thermal stability of single molecule magnet magnetic hysteresis. Details on the discovery of three new single molecule magnets along with ongoing efforts to elucidate the influence of structure upon thermal stability of magnetic hysteresis will therefore be covered.

Keywords

Single Molecule Magnets

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Session Classification : Poster Session 1

Track Classification : Advanced Materials