

## Colloquium

### Molecules Meet Materials: Our Journey from Main-group Chemistry to Molecular Magnets

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In this talk I will present our work on phosphorus-supported ligands including phosphonates which allow assembly of homo and hetero metallic complexes. Learning the lessons from these studies we have been able to embark on ligand designs that allowed us to prepare heterometallic 3d/4f (Figure), multi-metallic 4f and monometallic 4f complexes (Figure). Many of these complexes were shown to be single-molecule/single-ion magnets. The lessons learnt from this journey and the way forward are presented.

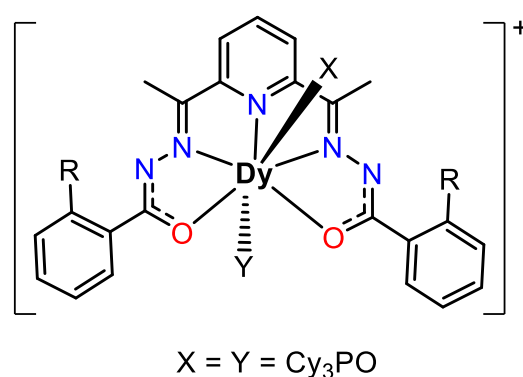
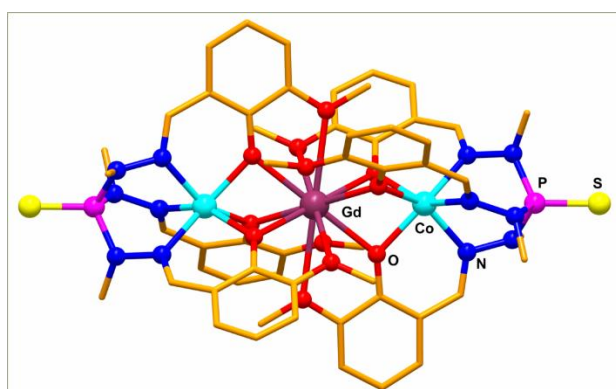


Figure: Co<sub>2</sub>Gd heterometallic Complex (Left) and a monometallic Dy (III) complex (Right)

**Monday, Apr 22<sup>nd</sup> 2024**

**16:00 Hrs (Tea / Coffee 15:45 Hrs)**

**Auditorium, TIFR-H**