Contribution ID: **19** Type: **Talk**

Magnetochiral dichroism: what do optical activity and magnetism have in common?

Thursday 18 April 2024 18:25 (15 minutes)

With a rapidly growing demand for new data storage devices a group of molecular materials which exhibit magnetic memory effect along with optical transparency seems to be a promising candidate. Having in mind the future applications, a reproducible method of synthesis and detailed investigation of their properties is mandatory. Magnetochiral dichroism spectroscopy (MChD) developed for the characterisation of a second order effect arising from the combination of magnetic properties and optical activity in a single compound, stands out as one of the most interesting yet still underexplored techniques. As there are no commercially available spectrometers designed for this measurement, construction of such setups requires deep understanding of the underlying phenomenon and technological issues. This appears to be even more challenging as there are only few people with extensive experience in this field and the number of already investigated compounds is scarce. All this makes MChD and synthesising the relevant chiral molecular magnets even more captivating.

Field

Chemistry

Length

Quick 10 min

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