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## A brief introduction to single-molecule magnets

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Single-molecule magnets (SMMs) form a class of chemical systems in which magnetic memory effect can be achieved at the molecular level. These materials discovered nearly 30 years ago are still delivering outstanding results. Firstly, they may be an answer to the on-growing need for high-density data storage units. On the other hand, their development provides fundamental information for emerging fields of spintronics and quantum computing. Moreover, due to weak absorption, they are an excellent platform for studying magneto-optical interactions via luminescence spectroscopy. However, as the relaxation of magnetization mechanisms are present at the atomic scale, the use of SMMs is currently limited to cryogenic temperatures. In my presentation, I will introduce to the audience the field of molecular magnetism from the perspective of lanthanide-based compounds. The talk aims to introduce the origin of SMM behavior and the related relaxation mechanisms using an idealized case, as well as briefly pass through the history up to current challenges in the field.

### Field

Chemistry

### Length

Long 20 min

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