

The Leallyn Burr Clapp Lecture

Thursday, November 2, 2023

Seminar: 4:00 MacMillan Room 117

Polly L. Arnold

Professor of Chemistry

Chemical Sciences Division Director, Lawrence Berkeley National Laboratory

University of California, Berkeley

**Putting the 'f' in chemistry:
molecules to help safeguard our critical f-block elements**



Image courtesy of the Royal Society

The f-block, sometimes called the 'footnotes' of the periodic table, comprises two rows of elements. The first are the lanthanides, or 'rare-earths' which are essential to many energy technologies and catalysis. The second row are the actinides, present in varied amounts in civil nuclear waste, and a legacy that we have an essential duty to safeguard.

To safely manipulate, separate, and recycle these elements, we need a better understanding of the subtleties of structure and bonding in the compounds of these metals. This is still poorly-understood because they are so large and have so many electrons, a factor which makes both experimental and computational predictions difficult.

We will show some of our work to make unusual new molecules of these metals that makes it easier to manipulate the bonding electrons, study the subtle bonding differences, and demonstrate new reactivity patterns that were previously unanticipated for these metals. These results form part of the jigsaw of understanding these important metals that is important for providing energy justice and a better environment for the future.

For more information about The Clapp Lecture visit:

