

The molecular approach towards actinide materials

Olaf WALTER, JRC Karlsruhe

Among the existing applications engaging actinides those based on actinide materials represent the major part: the actinide oxides for nuclear based energy production are predominant but other are under development or applied on a smaller scale such as the application of radionuclides for medical tumour treatment.

The starting point for all actinide chemistry and their materials is the mining from natural sources or recycling from the spent fuel. The separated actinides are normally gained in form of the oxides which are then to be re-dissolved for further transformations.

The presentation will briefly summarise and give an overview on what we have done to develop this kind of chemistry showing the bridge to the materials. Based on the actinide oxides as the starting point and the oxalates as one key intermediate the formation of actinide dioxide nano-materials, complexes in aqueous environment but as well organometallic complexes will be presented.