Synthesis, Magnetism an Reactivity of Hetero-Polymetallic Uranyl(V) Schiff-base complexes

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Uranium is one of the most investigated actinides due to its various applications and relatively low radioactivity in comparison to the other actinides. The chemistry of uranyl(V) is particularly relevant for understanding the migration of uranium in the environment and developing depollution strategies. Uranyl(V) compounds, also possess exceptional interest for the design of exchange-coupled molecular magnets[1]. In this decade a few uranium(V) compounds were synthesized[2],[3],[4],[5], but the chemistry of uranyl(V) complexes remains under-explored due to the inherent instability of U(V) towards disproportionation reaction in both aqueous and organic solvents to yield uranium(IV) and uranyl(VI) products.

Here we will report the synthesis and reactivity of several stable 3d-5f hetero-polymetallic coordination complexes containing uranyl(V). We will also present the effect of iron binding on the complexes structure, reactivity and magnetic properties.

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