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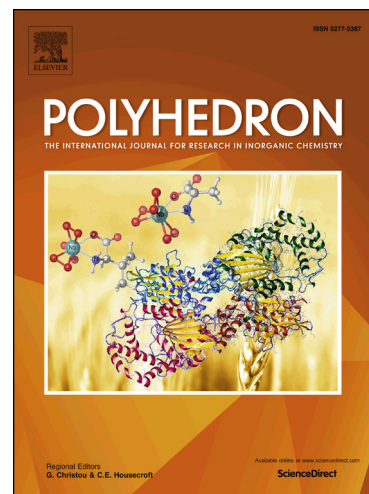
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Synthesis and Structural Characterization of Dinuclear Cerium(III) and Erbium(III) Complexes of Nicotinic Acid or 2-Aminobenzoic Acid

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Abstract

A cerium(III) complex, $[\text{Ce}_2(\text{NA})_6(\text{H}_2\text{O})_4]$ (**1**) and an erbium(III) complex, $[\text{Er}_2(2\text{-AMB})_6(\text{H}_2\text{O})_4] \cdot 3\text{H}_2\text{O}$ (**2**), where NA = nicotinic acid and 2-AMB = 2-aminobenzoic acid, have been prepared and characterized by IR spectroscopy, thermogravimetric analysis and X-ray crystallography. The single crystal analysis reveals that both complexes are dinuclear. In **1**, the two cerium(III) ions are bridged by carboxylate groups of four nicotinate ligands. Each cerium atom in **1** is nine-coordinate and exhibits a distorted monocapped square antiprism geometry. The Ce(III) ions are coordinated by seven oxygen atoms of the carboxylate groups and two oxygen atoms of water molecules. In **2**, each Er(III) ion is eight-coordinated adopting a distorted ErO_8 dodecahedral geometry. The Er(III) ions are bound to four oxygen atoms of the chelating carboxylate ligands, to one oxygen each from the two bridging carboxylates, and two oxygen atoms of water molecules. In **2** there is an intramolecular hydrogen bond forming a six-membered ring between the NH_2 group and one of the carboxylate oxygens in each of the six 2-

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