Three isotypic polymeric complexes with rare earth cations, but-2-enoate anions and 4,4'-(ethane-1,2-diyl)dipyridine and 4,4'-(ethene-1,2-diyl)dipyridine bridging ligands

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© 2015 International Union of Crystallography.Three isotypic rare earth complexes, catena-poly[[aquabis(but-2-enoato-?2 O,O')yttrium(III)]-bis(?-but-2-enoato)-?3 O,O':O;?3 O:O,O'-[aquabis(but-2-enoato-?2 O,O')yttrium(III)]-?-4,4'-(ethane-1,2-diyl)dipyridine-?2 N:N'], [Y2(C4H5O2)6(C12H12N2)(H2O)2], the gadolinium(III) analogue, [Gd2(C4H5O2)6(C12H12N2)(H2O)2], and the gadolinium(III) analogue with a 4,4'-(ethene-1,2-diyl)dipyridine bridging ligand, [Gd2(C4H5O2)6(C12H10N2)(H2O)2], are one-dimensional coordination polymers made up of centrosymmetric dinuclear [M(but-2-enoato)3(H2O)]2 units (M = rare earth), further bridged by centrosymmetric 4,4'-(ethane-1,2-diyl)dipyridine or 4,4'-(ethene-1,2-diyl)dipyridine spacers into sets of chains parallel to the [20] direction. There are intra-chain and inter-chain hydrogen bonds in the structures, the former providing cohesion of the linear arrays and the latter promoting the formation of broad planes parallel to (010).