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A new $3d$-$4f$ heteronuclear coordination polymer containing cobalt and neodymium, $\text{[Nd}_2\text{Co}_3(\text{oda})_6(\text{H}_2\text{O})_6]\cdot3\text{H}_2\text{O}}n$ (1) ($\text{H}_2\text{oda} =$ oxydiacetic acid), has been synthesized and structurally characterized. In 1, the oxydiacetate dianions (oda$^{2-}$) act as pentadentate ligands, and each of them chelates one Nd$^{3+}$ ion and bridges two Co$^{2+}$ ions. The infinite connection of metal ions and ligands results in a highly ordered 3D hexagonal channel framework. The photoluminescent, EPR and magnetic properties of the complex were also investigated.

Key words: Oxydiacetic Acid, Cobalt-Neodymium Complex, Fluorescence, EPR, Magnetic Properties