A New Lindqvist Polyanion-based Three-dimensional Network with a NaCl Topology

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A new compound $[Co(bipy)_3][Mo_6O_{19}]\cdot H_2O$ (**1**) (bipy = 2,2′-bipyridine) has been synthesized under hydrothermal conditions and characterized by IR spectroscopy, TG analysis and single-crystal X-ray diffraction. The crystal structure consists of a $[Co(bipy)_3]^{2+}$ cation, an $[Mo_6O_{19}]^{2-}$ anion, and a water molecule. In **1** each $[Co(bipy)_3]^{2+}$ cation is surrounded by six $[Mo_6O_{19}]^{2-}$ anions and *vice versa* in a cubic face-centered close packing array, forming a 3D architecture with NaCl topology. Cations and anions are connected *via* weak hydrogen bonds in which also the water molecule participates. The luminescent and electrochemical properties of the title compound have also been studied.

Key words: Polyoxometalates, NaCl Topology, Lindqvist-type Structure, Electrochemical and Luminescent Properties