

## DIOXOMOLYBDENUM(VI) AND DIOXOVANADIUM(V) COMPLEXES WITH SCHIFF BASES DERIVED FROM ISONICOTINOYLHYDRAZIDE: SYNTHESIS AND CHARACTERISATION

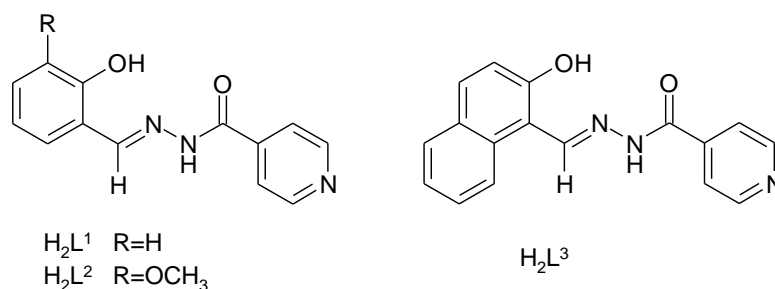
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The chemistry of aroylhydrazones has been intensively investigated in recent years for several reasons: the coordination ability of compounds from this group to chelate transition metal ions, their biological and promising properties for analytical applications. As part of our study on coordination behavior of Schiff bases, we prepared and characterized new dioxomolybdenum(VI) and dioxovanadium coordination compounds with ligands derived from isonicotinic acid hydrazide and salicylaldehyde  $H_2L^{1-3}$  (Scheme 1). The characterization included IR and NMR spectroscopic data, as well as X-ray structure analysis.



Scheme 1. Tridentate isonicotinoylhydrazone Schiff base ligands

The complexes  $\{VO_2(HL^1)\}$  (**1**) and  $[VO_2(HL^2)]$  (**2**) consist of discrete mononuclear molecules. The vanadium(V) ion is in a distorted square-pyramidal environment, coordinated at the pyramid basis to isonicotinoylhydrazone molecule that acts as a tridentate ligand through its azomethine nitrogen atom and carbonyl and deprotonated phenol oxygen atoms and to an oxo ligand. The fivefold coordination is completed by another oxo ligand at the pyramid apex, both oxo ligands are in cis position. An interesting feature of both structures include the protonated pyridyl ring<sup>[1-2]</sup>.

The structures of complexes **3** and **5** consist of dioxomolybdenum(VI) moiety, one tridentate twice deprotonated Schiff base ligand, bonded as tridentate ONO-donors and a solvent molecule that occupies the sixth metal coordination site. The geometry around Mo is distorted octahedral.

In the complex  $[MoO_2(L_2)]_4$  (**4**) the ligand is coordinated to the  $cis-Mo_2^{2+}$  core via phenolic-oxygen, azomethine-nitrogen and enolic-oxygen atoms, while the remaining sixth coordination site is occupied by the nitrogen atom of other isonicotinoyl part, connecting the molybdenum ions at the corners of the square into a cyclic assembly.

### References:

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