

## Supporting Information

**Table S1** The bond parameters (Å) calculated in solution phase for the studied compounds

Compound	V-O <sub>d</sub>	V-O <sub>c</sub>	V-O <sub>t</sub>	C-O <sub>c</sub>	V-X
<b>a3</b>	1.813	2.021	1.610	1.279	2.547
<b>a4</b>	1.814	2.023	1.613	1.281	2.906
<b>a5</b>	1.813	2.025	1.613	1.282	3.051
<b>b1</b>	1.807	2.003	1.603	1.286	
<b>b2</b>	1.810	2.008	1.612	1.282	<sup>a</sup> 2.746
<b>b3</b>	1.813	2.020	1.614	1.280	2.532
<b>b4</b>	1.813	2.022	1.616	1.282	2.903
<b>b5</b>	1.812	2.024	1.616	1.282	3.049

<sup>a</sup>The distance between V atom and O<sub>1</sub> atom in NO<sub>3</sub> unit.