

Supporting information of

Hydrogen-bonded assembly of  $[\text{Ni}(\text{Im})_6]^{2+}$  ion and phosphorous anions: Different sandwiched-type/tessellate-type supramolecular architectures and 1D water chains

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S-1 The ORTEP of compound **1** with thermal ellipsoids at the 30% probability. All hydrogen atoms are omitted for clearly.

S-2. The ORTEP of compound **2** with thermal ellipsoids at the 30% probability. All hydrogen atoms are omitted for clearly.

S-3. The ORTEP of compound **3** with thermal ellipsoids at the 30% probability. All hydrogen atoms are omitted for clearly.

S-4. The ORTEP of compound **3** with thermal ellipsoids at the 30% probability. All hydrogen atoms are omitted for clearly.

S-5. IR spectra of compounds **1** (a), **2** (b) **3** (c) and **4** (d).

S-6. TGA curves of compounds **1-4**.

S-7. Cif file of compound **1**.

S-8. Cif file of compound **2**.

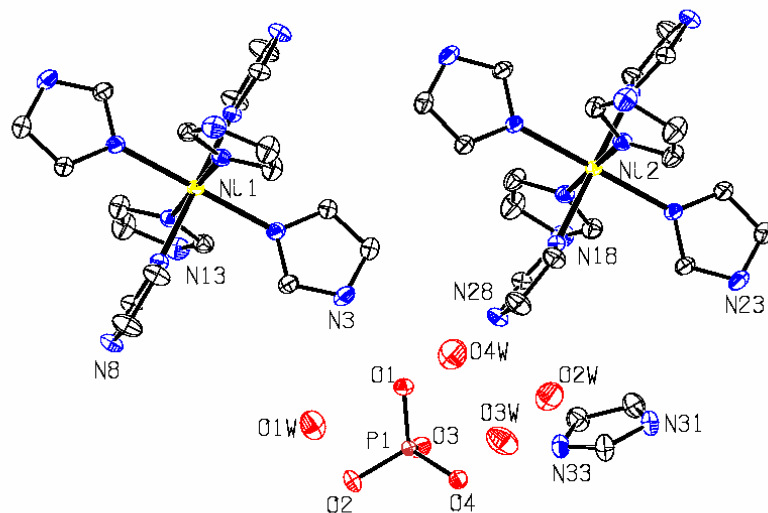
S-9. Cif file of compound **3**.

S-10. Cif file of compound **4**.

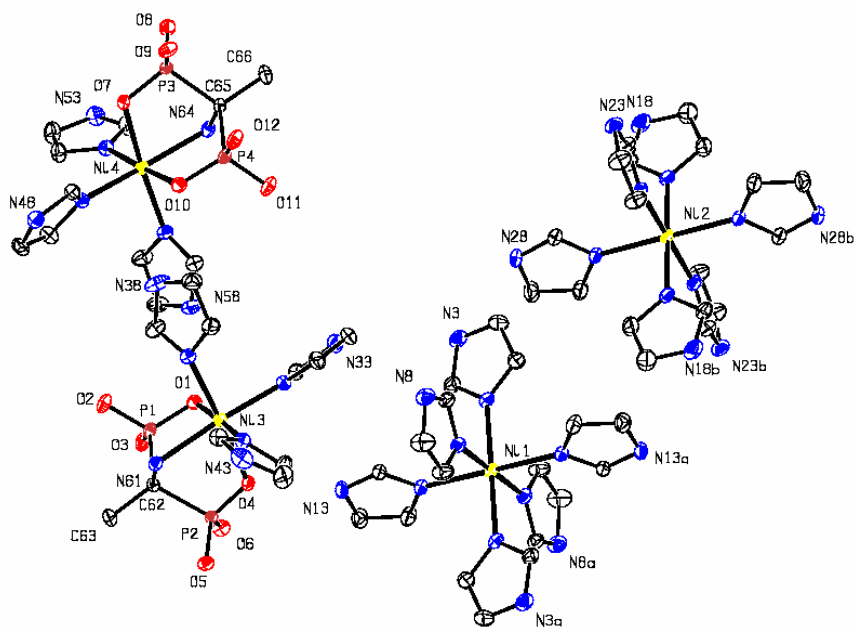
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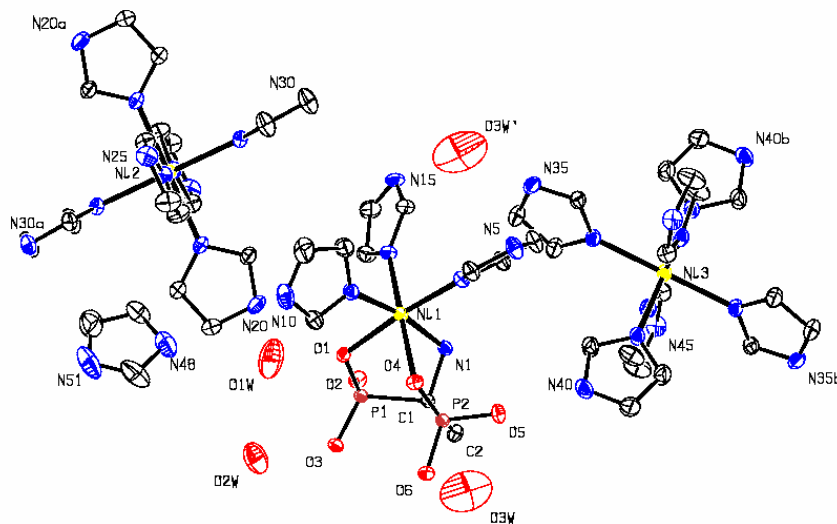
S-1 The ORTEP of compound **1** with thermal ellipsoids at the 30% probability. All hydrogen atoms are omitted for clearly.



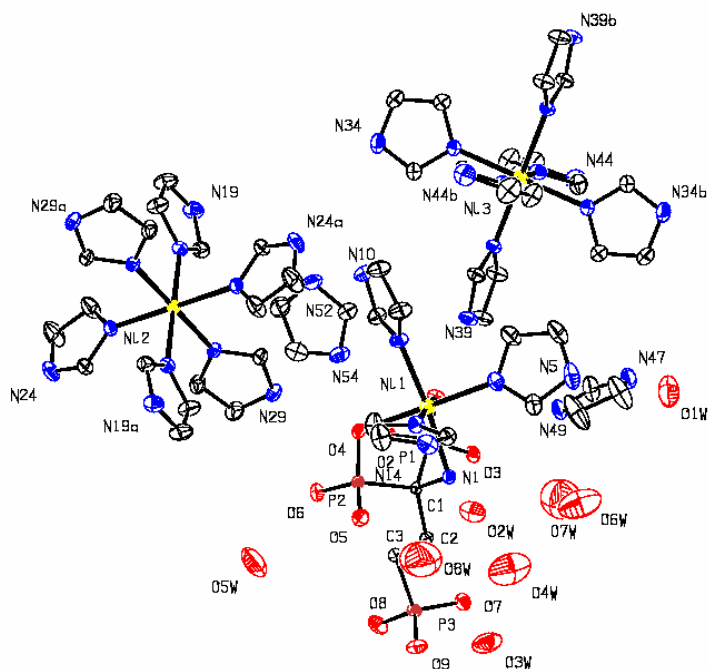
S-2. The ORTEP of compound **2** with thermal ellipsoids at the 30% probability. All hydrogen atoms are omitted for clearly.



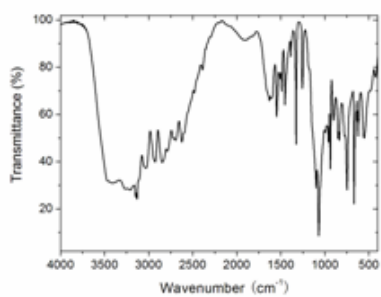
S-3. The ORTEP of compound **3** with thermal ellipsoids at the 30% probability. All hydrogen atoms are omitted for clarity.



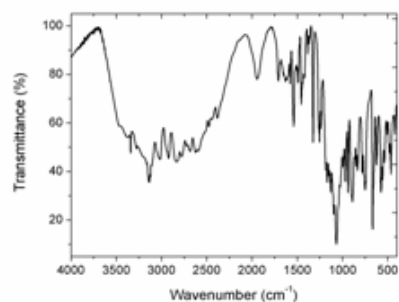
S-4. The ORTEP of compound **3** with thermal ellipsoids at the 30% probability. All hydrogen atoms are omitted for clarity.



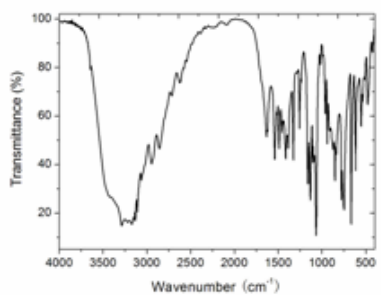
S-5. IR spectra of compounds **1** (a), **2** (b) **3** (c) and **4** (d).



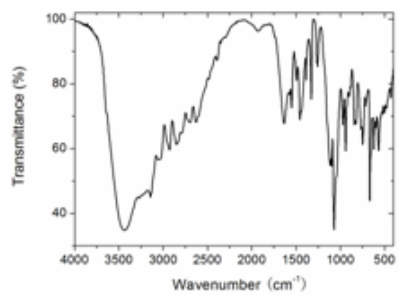
(a)



(b)



(c)



(d)

S-6. TGA curves of compounds **1-4**.

