

The novel centrosymmetric complex,  $[\text{In}_2(\text{pydc})_2(\text{pydcH})_2(\text{H}_2\text{O})_2] \cdot 2\text{H}_2\text{O}$  (1), (pydcH<sub>2</sub> = 2,3-pyridinedicarboxylic acid) was synthesized and thoroughly characterized using elemental analysis, IR, <sup>1</sup>H NMR spectroscopy and single crystal X-ray diffraction. All of obtained data via routine methods are in agreement with single crystal X-ray diffraction information. Compound 1 crystallized in the triclinic system with space group P1 with two molecules per unit cell. Each In(III) is six-coordinated with InN<sub>2</sub>O<sub>4</sub> bound set as distorted octahedral geometry. PydcH<sub>2</sub> with capability hydrogen donating and versatile coordination mode appears in this complex as both mono deprotonated, bidentate ligand and doubly protonated-tridentate one. Each tridentate ligands is coordinated to In(III) through two O atoms and one N atom and play as bridged role between two In(III) ions. The distance between two In(III) is about 6.527 Å and size of resultant hole within binuclear complex is around 3.195×5.567Å<sup>2</sup>. In the title compound, different types of hydrogen bonds and electrostatic interaction play important roles in stabilizing the corresponding lattice and assemble to 3-D supramolecular network.

**Reference**

- [1] H. Eshtiaq-Hosseini, Z. Yousefi, M. Mirzaei, Y.-G. Chen, S.A. Beyramabadi, A. Shokrollahi, R. Aghaei, *J. Mol. Struct.* 973 (2010) 1.
- [2] H. Eshtiaq-Hosseini, Z. Yousefi, M. Shafaei, M. Mirzaei, *J. Coord. Chem.*, 63 (2010) 3157
- [3] P.S. Mukherjee, S. Dahi, E. Zangrando, F. Lloret, N.R. Choudhuri, *Chem. Commun.* (2001) 1444.
- [4] P.S. Mukherjee, T.K. Maji, G. Montafa, T. Mallah, N.R. Choudhuri, *Inorg. Chem.* 39 (2000) 5147.
- [5] M. Mirzaei, H. Eshtiaq-Hosseini, V. Lippolis, H. Aghabozorg, D. Kordasani, A. Shokrollahi, R. Aghaei, A.J. Blake, *Inorg. Chim. Acta.* 370 (2011) 141.
- [6] H. Eshtiaq-Hosseini, H. Aghabozorg, M. Mirzaei, S.A. Beyramabadi, H. Eshtiaq, A. Morzali, A. Shokrollahi, R. Aghaei, *Spectrochim. Acta.* 78A (2011) 1392.
- [7] H. Aghabozorg, F. Ramezani-pour, P.D. Kheirollahi, A. A. Saei, A. Shokrollahi, M. Shamsipur, F. Manteghi, J. Soleimanzad, M. A. Sharif, *Z. Anorg. Allg. Chem.* 632(2005) 147.
- [8] A. Moghimi, M. A. Sharif, A. Shokrollahi, M. Shamsipur, H. Aghabozorg, *Z. Anorg. Allg. Chem.* 631 (2005) 902.
- [9] H. Eshtiaq-Hosseini, H. Aghabozorg, M. Mirzaei, M.M. Amini, Y.-G. Chen, A. Shokrollahi, R. Aghaei, *J. Mol. Struct.* 973 (2010) 180.