

X-ray structure characterization of metal-benzoic acid organic complexes

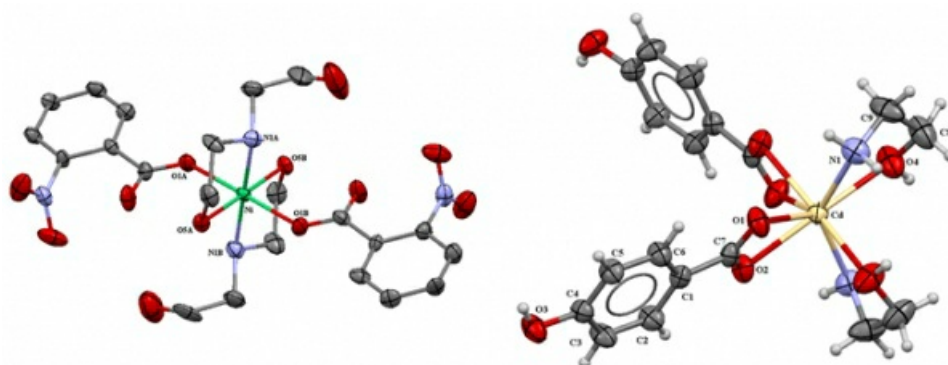
Rishad Kunafiev¹, Aziz Ibragimov²

¹*X-ray Center, Institute of bioorganic chemistry, Tashkent, Uzbekistan,* ²*Solid state chemistry, Institute of general and inorganic chemistry, Tashkent, Uzbekistan*
E-mail: chemingrisch2004@gmail.com

An increasing interest has been sustained in the chemistry of metal-organic frameworks owing to their unique unusual properties and potential biological activities. Mono-substituted derivatives of benzoic acid such as hydroxybenzoic and nitrobenzoic acids demonstrate a low antimicrobial and moderate growth stimulating actions. Ethanolamines also show the same types of the biological action. In mixed-ligand metal complexes on the base of these substances an enhancement of biological activity may be more pronounced. The title compounds, mixed-ligand Ni-complex of o-nitrobenzoic acid (ONBA) with diethanolamine (DEA) and Cd-complex of p-hydroxybenzoic acid (PHBA) with monoethanolamine (MEA) we prepared and exhibit antimicrobial activity of these complexes against fungi *Fusarium oxysporum* and *Candida albicans*. Because of these activities, the X-ray crystal structures shown below are of great interest to our continuing investigations. An inner coordination sphere of the Ni-complex consists of 2 ONBA and 2 DEA molecules. In the Cd-complex a metal ion coordinates 2 PHBA and 2 MEA molecules: former molecules are linked bidentately throw oxygen atoms O1 and O2 of carboxylate groups while latter molecules are chelated throw nitrogen N1 and oxygen O4. Coordination polyhedron is difficult to describe with known polyhedr but it is near to bicapped trigonal prism. In order to assess enhancement of the biological action monoligand metal complexes and organic salts between ligands also were prepared. They will be discussed in detail. This work is funding in the framework of fundamental grants for Uzbekistan.

[1] Aziz B. Ibragimov et al. (2016) J. Chem. Crystalogr. 46-8, 352-363.

[2] A. B. Ibragimov et al. (2017) J. Inorg. Chem. 62-4, 439-445.



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