# Synthesis, crystal structure and spectroscopy studies of a novel five-coordinated Zn(II) ion complex with L-tyrosine and imidazole.

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The new five-coordination zinc(II) complex of formula $[Zn(Im)(l\text{-}tyr)_2]_2{\cdot}5H_2O$ consisting of l-tyrosine (l-tyr) and imidazole (Im) molecules as ligands was prepared as crystals and characterized by X-ray diffraction, IR-FIR vibrational and UV–Vis electronic spectroscopy. The $[Zn(Im)(l\text{-}tyr)_2]_2{\cdot}5H_2O$ complex crystallizes in the orthorhombic crystal system and $P2_12_12$ space group. The $[ZnN_2N'O_2]$ chromophore has distorted bipiramidal geometry with value of $\tau$ parameter 0.7. The sensitive intra and inter-molecular hydrogen bonds created the layers arrangement and the “pseudo-baskets” fashion. The intraligand charge transfer (ILCT) $\pi$–$\pi^*$ and $\pi$–$\pi^*$ transitions in the ligands molecule are corresponded to the intensity bands in the UV–Vis region.

Słowa kluczowe

l-tyrosine, imidazole, Zn(II) complex, X-ray diffraction, FIR-IR spectroscopy, NIR-UV–Vis spectroscopy

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