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## Zinc(II), cooper(II) and nickel(II) dithiocarbazate complexes: structural and photophysical properties

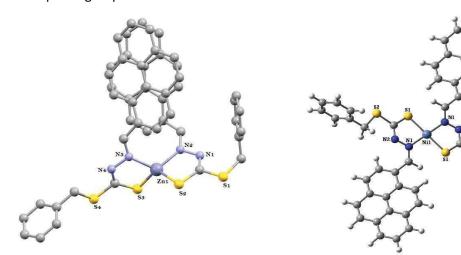
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Thiosemicarbazones and dithiocarbazates possess similar structures and can act as ligands, stabilizing transition metal complexes. In previous investigations, palladium and platinum complexes containing a pyrene-derived thiosemicarbazone ligand were presented<sup>1,2</sup>. Here, new zinc(II), copper(II) and nickel(II) complexes were obtained with a new bidentate dithiocarbazate ligand containing a pyrene fluorophore group, named benzyl-(E)-2-(pyren-1-ylmethylene)hydrazine-1-carbodithioate (H-PrDTC). The ligand and the complexes [Zn(PrDTC)<sub>2</sub>] (1), [Cu(PrDTC)<sub>2</sub>] (2) and [Ni(PrDTC)<sub>2</sub>] (3) were prepared in good yields (around 70%) and were characterized by FT-IR, UV-Vis, and NMR (¹H and ¹³C, for 1 and 3) or EPR (for 2) spectroscopies, elemental analysis, and single crystal X-ray diffraction (for 1 and 3). The X-ray diffraction analyses show that complex 1 presents a distorted tetrahedral coordination geometry while complex 3 has a square-planar structure, as depicted below, left and right, respectively. The study of the photophysical properties of the compounds showed that all present steady-state fluorescence emission in the blue region, originating from the ligand due to the presence of the pyrene chromophore group in their structure.



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## References

[1] OLIVEIRA, C. G. *et. al.* Novel tetranuclear Pd<sup>II</sup> and Pt<sup>II</sup> anticancer complexes derived from pyrene thiosemicarbazones. **Dalton Transactions**, v. 49, n. 28, p. 9595-9604, 2020.

[2] OLIVEIRA, C. G. *et. al.* Palladium(II) complexes with thiosemicarbazones derived from pyrene as topoisomerase IB inhibitors. **Dalton Transactions**, v. 48, n. 44, p. 16509-16517, 2019.