Synthesis and Characterization of Some Transition Metal Complexes of Thiocarbohydrazone Schiff Bases

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Abbreviations

FU: bis(furfural)thiocarbohydrazone.

PY: bis(pyrrole-2-carboxyaldehyde)thiocarbohydrazone.

TH: bis(thiophen-2-aldehyde)thiocarbohydrazone.

PI: bis(piperonaldehyde)thiocarbohydrazone.

DMSO: Dimethylsulfoxide.

SB: Schiff base
Abstract:

Thiocarbohydrazones Schiff base complexes were prepared from the reaction of bis (furfural) thiocarbohydrazone(FU), bis (pyrrole-2-carboxaldehyde) thiocarbohydrazone(PY), bis (thiophen-2-aldehyde) thiocarbohydrazone(TH) and bis(piperonaldehyde)thiocarbohydrazone(PI) with Cu(II), Zn(II), Co(II), Ni(II) and Fe(II) metal ions. The Schiff bases were prepared from the reaction of thiocarbohydrazide with furfural, pyrrole-2-carboxyaldehyde, thiophene-2-aldehyde and pipronaldehyde. One of these Schiff bases is new, which is PI, whereas the others have been prepared and characterized previously.

The new synthesized complexes were found to have the general formulas [M(FU)Cl₂] where M is Cu(II), Zn(II), Co(II), Fe(II) and [Ni(FU)Cl₂].2H₂O, [M(PY)Cl₂].XH₂O where M is Cu(II), Co(II), Ni(II) and Fe(II), X= 0 for nickel and copper, 2 for cobalt and iron, [M(TH)₂] where M is Cu(II), Co(II) and Ni(II), [M(TH)Clₓ] where M is Fe(II), x=2 and Zn(II), x=1, [M(PI)₂] where M is Zn(II), Co(II) and Fe(II) and [Cu(PI)Cl].