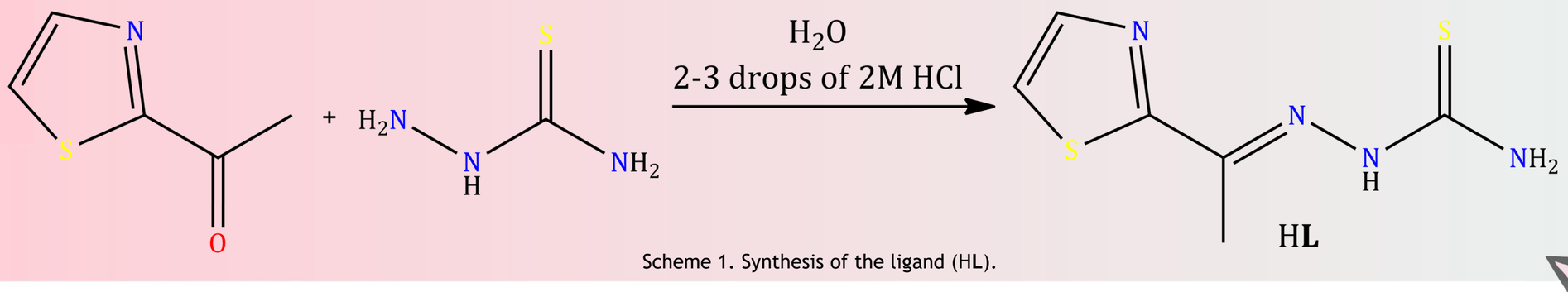
Syntesis and characterization of Mn(II) complex with the condensation product of thiosemicarbazide and 2-acetylthiazole

M. Jevtović [a], A. Pevec [b], M. Šumar Ristović [c], M. Savić [d], D. Mitić [a], N. Stevanović [c]

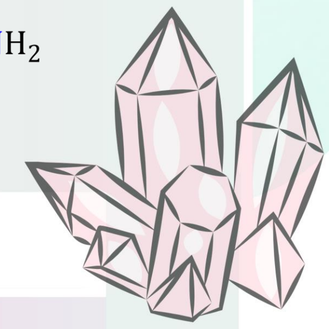
[a] *Innovative Centre of the Faculty of Chemistry ltd., Studentski trg 12-16, 11000 Belgrade, Serbia;*
[b] *Faculty of Chemistry and Chemical Technology, University of Ljubljana, Večna pot 113, 1000 Ljubljana, Slovenia;*
[c] *University of Belgrade - Faculty of Chemistry, Studentski trg 12-16, 11000 Belgrade, Serbia;*
[d] *University of Belgrade - ICTM, Department of Chemistry, Njegoševa 12, 11000 Belgrade, Serbia*

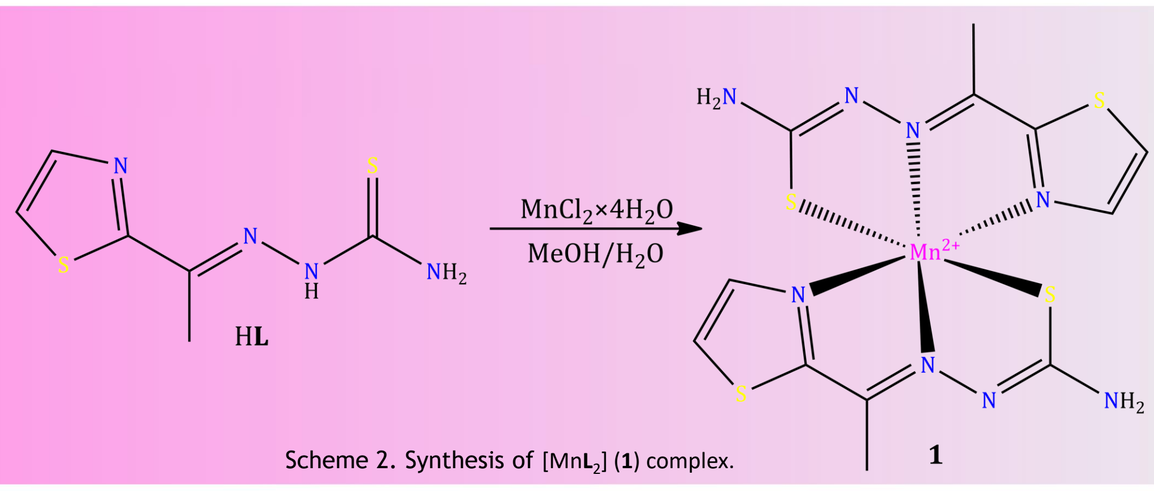
e-mail: mima@chem.bg.ac.rs

The reaction of the H**L** ligand, (*E*)-2-(1-(thiazol-2-yl)ethylidene)hydrazine-1-carbothioamide, with the metal salt $MnCl_2 \cdot 4H_2O$ in a molar ratio 1:1 in methanol/water mixture results in the formation of bis Mn(II) complex (**1**) with composition [Mn**L**$_2$] (Scheme 1 and 2).



Scheme 1. Synthesis of the ligand (HL).





Scheme 2. Synthesis of [Mn**L**$_2$] (**1**) complex.

Complex **1** crystallizes in the triclinic crystal system with space group *P*–1. The asymmetric unit of **1** consists of two crystallographically independent [Mn(**L**)$_2$] complex molecules. The Mn(II) ion is hexacoordinated with two tridentate ligands **L** through NNS sets of donor atoms. The geometry around the Mn is described as a distorted trigonal prism (Figure 1).

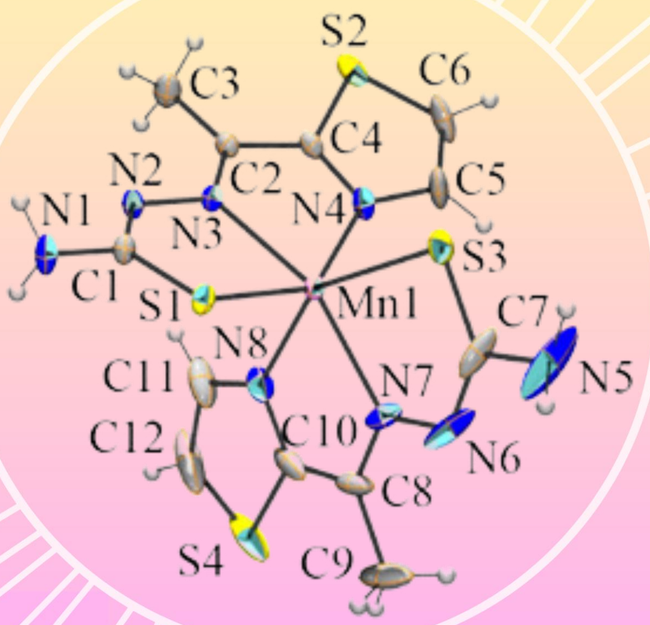


Figure 1. Molecular structure of complex **1**.

Acknowledgment: This research was supported by the Science Fund of the Republic of Serbia, #7750288, Tailoring Molecular Magnets and Catalysts Based on Transition Metal Complexes – ***TMMagCat.***