



5th NATIONAL
**INORGANIC
CHEMISTRY
CONGRESS**

ABSTRACT BOOK
APRIL 22-25, 2015

V. ULUSAL
**ANORGANİK
KİMYA
KONGRESİ**

ÖZET KİTABI
22-25 NİSAN 2015

Publication No: 41

MERSİN
UNIVERSITY
PUBLICATIONS

MERSİN
ÜNİVERSİTESİ
YAYINLARI

Yayın No: 41



MERSİN UNIVERSITY MERSİN ÜNİVERSİTESİ

5th NATIONAL
**INORGANIC
CHEMISTRY
CONGRESS**

ABSTRACT BOOK
APRIL 22-25, 2015

MERSIN UNIVERSITY PRESS

5th NATIONAL INORGANIC CHEMISTRY CONGRESS
ABSTRACT BOOK
APRIL 22-25, 2015
MERSİN - TURKEY

MERSIN UNIVERSITY PUBLICATIONS NO: 41

CHAIR OF ORGANIZING COMITEE

Prof.Dr. Nevzat KÜLCÜ (Chairman)
Prof.Dr. Hakan ARSLAN (Vice-Chairman)
Asist.Prof.Dr. Göktürk AVŞAR (Coordinator)

V. ULUSAL
**ANORGANİK
KİMYA
KONGRESİ**

ÖZET KİTABI
22-25 NİSAN 2015

MERSİN ÜNİVERSİTESİ YAYINEVİ

V. ULUSAL ANORGANİK KİMYA KONGRESİ
ÖZET KİTABI
22-25 NİSAN 2015
MERSİN - TÜRKİYE

MERSİN ÜNİVERSİTESİ YAYINLARI NO: 41

ORGANİZASYON KOMİTESİ BAŞKANLIĞI

Prof.Dr. Nevzat KÜLCÜ (Kongre Başkanı)
Prof.Dr. Hakan ARSLAN (Kongre Başkan Yardımcısı)
Yrd.Doç.Dr. Göktürk AVŞAR (Koordinatör)

ISBN NO: 978 – 975 – 6900 – 47 – 5



9 789756 900475 >

P-241

Crystal structure of *Bis*(4-floro-*N*-(di-methylcarbamothiol)benzamido) nickel(II)

GÜN BİNZET¹, ULRICH FLÖRKE², HAKAN ARSLAN³, NEVZAT KÜLCÜ³

¹ DEPARTMENT OF ELEMENTARY SCIENCE EDUCATION, FACULTY OF EDUCATION, MERSIN UNIVERSITY, YENISEHIR CAMPUS, 33160, MERSIN, TURKEY

² DEPARTMENT OF CHEMISTRY, UNIVERSITY OF PADEBORN, PADEBORN, 33098, GERMANY

³ DEPARTMENT OF CHEMISTRY, FACULTY OF ARTS AND SCIENCE, MERSIN UNIVERSITY, CIFTLIKKOY CAMPUS, MERSIN, 33343, TURKEY

Bis(4-floro-*N*-(di-methylcarbamothiol)benzamido) nickel(II) complexes has been synthesized in high yield according to the methods in the literature [1,2]. The title complex was characterized by ¹H NMR, FT-IR and elemental analysis. The crystal and molecular structure of *bis*(4-floro-*N*-(di-methylcarbamothiol)benzamido) nickel(II), Ni(L¹)₂, has been determined from single crystal X-ray diffraction data. (Ni(L¹)₂), C₂₄H₂₈F₂N₄NiO₂S₂, crystallizes in the tetragonal, space group I4(1)/a, with Z = 8 and unit cell parameters, *a* = 19.3256(13) Å, *b* = 19.3256(13) Å, *c* = 13.6910(19) Å. The molecular structure of Ni(L¹)₂ is depicted in Figure 1. The crystal structure of the title compound confirms ligand is a bidentate chelating ligand, coordinating to the nickel atom through the thiocarbonyl and carbonyl groups. The central nickel atom shows slightly distorted square-planar coordination and the sulfur atoms are in a *cis*-configuration. The bond lengths of the carbonyl and thiocarbonyl groups lie between those for double and single bonds [2,3]. The other bond lengths in title compound show normal values.



Figure 1. The molecular structure of the title compound.

Keywords: Thiourea, Benzoylthiourea, Metal complex, Molecular structure, X-ray single crystal diffraction.

References

1. Binzet, G., "Synthesis and properties of benzoylthiourea derivatives and metal complexes", Ph.D Thesis, Mersin University Mersin, 2009.
2. Binzet, G., Kavak, G., Külcü, N., Ozbey, S., Florke, U., Arslan, H., "Synthesis and characterization of novel thiourea derivatives and their nickel and copper complexes", J. Chem. 1-9, ID:536562, 2013.
3. Binzet, G., Arslan, H., Flörke, U., Külcü, N., Duran, N., "Synthesis, characterization and antimicrobial activities of transition metal complexes of *N,N*-dialkyl-*N'*-(2-chlorobenzoyl)thiourea derivatives", J. Coord. Chem. 59(12), 1395-1406, 2006.