

Dr. Rawhi H. Al-Far

Associate Professor of Inorganic Chemistry



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Basic Information

Name	Rawhi Hammoudeh Mustafa Al-Far
Date of Birth	June 10, 1958
Place of Birth	Jericho – Jordan.
Nationality	Jordanian
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Education

1980	B. Sc. (Chemistry)	Yarmouk University, Irbid, Jordan
1985	M. Sc.	The University of Jordan, Amman, Jordan (advisor Professor Salim F. Haddad)
Title of M.Sc. Thesis: Synthesis and XRD studies of U (IV) Dipicolinic Acid		
2003	Ph.D	The University of Jordan, Amman, Jordan (advisor Professor Salim F. Haddad)
Halogen—Halogen interactions in Halopyridines—Metal Halides and Its Role in Crystal Engineering		
June 2, 2009—Present	Associate Professor of Inorganic Chemistry, Department of Applied Science, Al-Balqa' Applied University. Salt, Jordan	

PREVIOUS POSITIONS (Experiences)

- 1- **2 years [2016 – 2018]**; Associate Professor (A) of Inorganic Chemistry, Department of Applied Science, Al-Balqa' Applied University, Salt – Jordan.

2- **2 years:** Hafr AlBatin University (College of Arts and Science for girls), Nuaira- Saudi Arabia (2014 – 2016).

Nov., 2014: Associate Professor (A) of Inorganic Chemistry, Department of Applied Science, Al-Balqa' Applied University, Salt – Jordan.

3- **1 year;** Al-Balqa' Applied University, Salt – Jordan (2013 – 2014).

4- **2 years:** Qassim University, Qassim – Saudi Arabia (2011 – 2013).
Associate Professor of Inorganic Chemistry, Chemistry Department, College of Science, Qassim University, Qassim – Saudi Arabia.

5- **11 years;** Al-Balqa' Applied University, Salt – Jordan (2000 – 2011).

- **2009 -2011:** Associate Professor (B) of Inorganic Chemistry, Department of Applied Science, Al-Balqa' Applied University, Salt – Jordan.
- **2004-June 1, 2009:** Assistant Professor of Inorganic Chemistry, Department of Applied Science, Al-Balqa' Applied University, Salt, H.K. of Jordan
- **2003-2004** Teacher, Department of Applied Science, Al-Balqa' Applied University, Salt, H.K. of Jordan
- **2000-2003** Assistant teacher, Department of Applied Science, Al-Balqa' Applied University, Salt, H.K. of Jordan
- **1991-1993** Instructor, Philadelphia University, Jerash, H.K. of Jordan
- **1998-1999** Teacher, Dhahran School, Dhahran, Saudi Arabia
- **1995-1996** Teacher, Islamic Scientific College, Amman, H.K. of Jordan
- **1980** Teaching assistant, Department of Chemistry, Yarmouk University, Irbid, H.K. of Jordan.

RESEARCH EXPERIENCE

Research interests are mainly in the following fields:

1. Supramolecular chemistry of inorganic molecules and clusters (crystallisation and crystal structure and packing analysis)
2. Synthesis and spectroscopic studies of Transition Metal Compounds containing N-heterocyclic ligands

3. Synthesis and characterisation of nitrogen and sulfur containing metal complexes and salt crystals.
4. DFT studies of halo-derivative pyridine compounds (salt crystals and Coordinated one).

TEACHING EXPERIENCE

I) Courses given for under-graduate students

1. General Chemistry 101
2. General Chemistry 102
3. Practical General Chemistry (Lab 111 and Lab112, 202 lab for chem. 202)
4. Organic Chemistry Course and Its Practical organic Lab.
5. Analytical Chemistry Course and Its Practical Analytical Lab.
6. Transition Metals Chemistry
7. Mechanisms of Inorganic Compounds reactions
8. Solid State Chemistry
9. Organometallics
10. Spectroscopy of Inorganic Compounds
11. Lab(I) for Engineering students
12. Research Projects
13. Environmental Chemistry

II) Courses given for postgraduate students

- 1- Chemical Applications of Group Theory, F.A. Cotton, 3rd edition.
- 2- XRD – Crystallography
- 3- Research Project

Training

1- ICDL at Al-Balqa' Applied University, Computer Center, Salt - Jordan.

2. Training on several programs that are related to structure Determination in 3-D - SHELX-97 [SHELXTL-Bruker]), Mercury, enCifer, WinGX, Crystals, PLATON, Crystals...etc.), Summer 2006. At University of Idaho-Research Center-Moscow [Idaho –USA].

PUBLICATIONS

1- Structure of a neutral uranium (IV)-dipicolinic acid complex.

Haddad, S. F.; Al-Far, R. H.; Ahmed, F. R. *Acta Crystallographica, Section C: Crystal Structure Communications* (1987), C43 (3), 453-6.

2- 2,6-Diaminopyridinium bromide monohydrate.

Haddad, Salim F.; Al-Far, Rawhi H. *Acta Crystallographica, Section E: Structure Reports Online* (2003), E59 (10), o1444-o1445. Publisher: International Union of Crystallography,

3- 3-Ammonio-2,6-dibromopyridine bromide hemihydrate.

Haddad, Salim F.; AlDamen, Murad A.; Al-Far, Rawhi H. *Acta Crystallographica, Section E: Structure Reports Online* (2004), E60 (9), o1491-o1493. Publisher: Blackwell Publishing Ltd.

4- Ruthenium (II) complex of the novel azoimine ligand, α -acetyl- α -phenylazo-4-chlorophenylazomethine.

Al-Noaimi, Mousa Z.; Abdel-Jalil, Raid J.; Haddad, Salim F.; Al-Far, Rawhi H.; Crutchley, Robert J. *Inorganica Chimica Acta* (2006), 359(8), 2395-2399. Publisher: Elsevier B.V.

5- Interconversion of copper(II) to copper(I): synthesis, characterization of copper(II) and copper(I) 2,2'-biquinoline complexes and their microbiological activity. Ali, Basem F.; Al-Sou'od, Khaldoun; Al-Ja'ar, Nayef; Nassar, Ahmad; Zaghal, Mukarram H.; Judeh, Zaher; Al-Far, Rawhi; Al-Refai, Mahmoud; Ibrahim, Mohamad; Mansi, Kamal; Al-Obaidi, K. H. *Journal of Coordination Chemistry* (2006), 59(2), 229-241. Publisher: Taylor & Francis Ltd.

6- Crystal structure of cis-[Rh(biq)₂Cl₂]Cl. 3H₂O: solid-state characterization and crystal packing analysis.

Al-Far, Rawhi; Ali, Basem F.; Zaghal, Mukarram H.; Mhaidat, Razan M.; Judeh, Zaher; Al-Sou'od, Khaldoun. *Journal of Chemical Crystallography* (2006), 36(1), 41-46. Publisher: Springer.

7- Br... HN, N... HC, Br... HC, and Br... Br intermolecular interactions as supramolecular synthons: Synthesis and crystal structure of bis(2-amino-5-methylpyridinium) tetrabromomercurate(II).

Al-Far, Rawhi; Ali, Basem F.; Al-Sou'oud, Khaldoun. *Journal of Chemical Crystallography* (2006), 36(8), 523-529. Publisher: Springer.

8- (π)C-H... S, (allyl)C-H... C(π) and π ... π intermolecular interactions: synthesis, characterization, and crystal structure of 2,2'-bipyridinebis(diallyldithiocarbamate)zinc(II).

Ali, Basem F.; Al-Sou'od, K. A.; Al-Far, Rawhi; Judeh, Zaher. *Structural Chemistry* (2006), 17(4), 423-429. Publisher: Springer.

9- Synthesis and crystal structure of palladium (II) complexes with 2-[3-(diphenylphosphino)propyl]thiophene.

Salmeia, Khalifah A.; Al-Far, Rawhi H.; Hodali, Hamdallah A. *Polyhedron* (2007), 26(15), 4173-4178. Publisher: Elsevier B.V.

10- Noncovalent supramolecular interactions in the crystal structure of 2-amino-3,5-dibromo-4,6-dimethylpyridinium tetrabromocadmate(II).

Al-Far, Rawhi; Ali, Basem F. *Journal of Chemical Crystallography* (2007), 37(5), 333-341.

Publisher: Springer.

11- Intermolecular interactions involved in the crystal structure of 2-amino-5-methylpyridinium hexabromostannate (IV), (C₆H₉N₂)₂[SnBr₆].

Ali, Basem F.; **Al-Far, Rawhi**; Al-Sou'od, Khaldoun. *Journal of Chemical Crystallography* (2007), 37(4), 265-273. Publisher: Springer.

12- Intermolecular interactions in 2,5-dimethylpyrazinium tetrabromidothallate(III).

Al-Far, Rawhi; Ali, Basem Fares. *Acta Crystallographica, Section E: Structure Reports Online* (2007), E63 (8), m2242-m2243. Publisher: Blackwell Publishing Ltd.

13- Dimethylpyrazinium tetrabromidoferrate(II): Br...aryl...Br and Br...Br intermolecular interactions.

Al-Far, Rawhi; Ali, Basem Fares. *Acta Crystallographica, Section E: Structure Reports Online* (2007), E63 (6), m1701. Publisher: Blackwell Publishing Ltd.

14- Bis(2-amino-3,5-dibromo-4,6-dimethylpyridinium) hexabromidostannate(IV).

Al-Far Rawhi; Ali Basem Fares. *Acta crystallographica. Section C, Crystal structure communications* (2007), 63(Pt 4), m137-9.

15- A novel framework of N-H... Br hydrogen bonds forming Br(4,4'-bipyridinium)₄ supramolecular synthons: bis(4,4'-bipyridinium) tris[tetrabromidoferrate(III)] bromide.

Ali, Basem Fares; **Al-Far, Rawhi**. *Acta Crystallographica, Section C: Crystal Structure Communications* (2007), C63(10), m451-m453. Publisher: Blackwell Publishing Ltd.

16- A lead-halide ladder complex: catena-poly[bis(2,3-dimethylquinoxalinium) [[di- μ_2 -bromido-bis[dibromoplumbate(II)]]-di- μ_2 bromido]].

Ali, Basem Fares; **Al-Far, Rawhi**; Haddad, Salim. *Acta Crystallographica, Section E: Structure Reports Online* (2007), E63 (6), m1569. Publisher: Blackwell Publishing Ltd.

17- 5-Hydrazino-1,3-dimethyl-4-nitro-1H-pyrazole.

Abu-Safieh, Kayed A.; Khanfer, Monther; **Al-Far, Rawhi**; Ali, Basem Fares; Maichle-Moessmer, Caecilia; Abu-Rayyan, Ahmad. *Acta Crystallographica, Section E: Structure Reports Online* (2007), E63 (9), o3814-o3815. Publisher: Blackwell Publishing Ltd.

18- 2,5-Dibromopyridinium hexabromidostannate(IV).

Ali, Basem Fares; **Al-Far, Rawhi**. *Acta Crystallographica, Section E: Structure Reports Online* (2007), E63 (3), m892-m894. Publisher: Blackwell Publishing Ltd.

19- 2,3-Dimethylquinoxalinium dibromide.

Al-Far, Rawhi; Ali, Basem Fares. *Acta Crystallographica, Section E: Structure Reports Online* (2007), E63 (5), o2530-o2532. Publisher: Blackwell Publishing Ltd.

20- 2,3-Dimethylquinoxalinediium hexabromidostannate(IV) trihydrate.

Ali, Basem Fares; **Al-Far, Rawhi**; Ng, Seik Weng. *Acta Crystallographica, Section E: Structure Reports Online* (2007), E63 (8), m2102-m2103. Publisher: Blackwell Publishing Ltd.

21- (E)-N'-[(Furan-2-yl)methylene]-2-hydroxy-2,2-diphenylacetohydrazide monohydrate.

Khanfar, Monther A.; Abu-Safieh, Kayed A.; **Al-Far, Rawhi**; Ali, Basem Fares; Maichle-Moessmer,

Caecilia. *Acta Crystallographica, Section E: Structure Reports Online* (2007), E63 (10), o4078-o4079, So4078/1-So4078/9. *Publisher: Blackwell Publishing Ltd.*

22- Three Dimensional Network Polymeric Structure of (4,4'-bipyridinium)[CdBr₄]_n: Supramolecular Motifs and Crystal Supramolecularity.

Al-Far, Rawhi; Ali, Basem Fares. *Journal of Chemical Crystallography* (2008), 38(4), 289-293. *Publisher: Springer.*

23- The Crystal Structures of Bis(2-amino-5-methylpyridinium) Tetrabromometallate(II): Intermolecular Interactions in (C₆H₉N₂)₂[MBr₄]; M = Cd and Co.

Al-Far, Rawhi Hammoudeh; Ali, Basem F. *Journal of Chemical Crystallography* (2008), 38(5), 373-379. *Publisher: Springer.*

24- Isostructural Series of (2,2'-Bipyridinium)tetrabromometallate(II); Intermolecular Interactions in the Structures of (bpyH₂)[MBr₄]; M = Zn, Hg and Co.

Ali, Basem F.; Al-Far, Rawhi. *Journal of Chemical Crystallography* (2008), 38(9), 689-693. *Publisher: Springer.*

25- Intermolecular interactions in the crystal structure of bis(4-methylcyclohexylammonium) tetrabromocuprate(II).

Al-Far, Rawhi; Ali, Basem F.; Haddad, Salim. *Jordan Journal of Chemistry* (2008), 3(4), 381-387. *Publisher: Yarmouk University.*

26- Crystal supramolecularity of polymeric and monomeric organic-inorganic hybrid complexes containing 2,5-dibromopyridinium Cd(II)-chloride.

Al-Far, R.; Ali, B. F.; Haddad, S. F. *Main Group Chemistry* (2008), 7(4), 301-309. *Publisher: Taylor & Francis Ltd.*

27- Crystal Structure of Three Isomorphous Compounds of 2,5-Dibromopyridine with Tetrahalometalate(II) Ions.

Haddad, Salim F.; Al-Far, Rawhi H. *Jordan. Journal of Chemical Crystallography* (2008), 38(9), 663-669. *Publisher: Springer.*

28- Bis(2-bromopyridinium) hexachloridostannate(IV).

Ali, Basem Fares; Al-Far, Rawhi; Haddad, Salim F. *Acta Crystallographica, Section E: Structure Reports Online* (2008), E64 (5), m637-m638, m637/1-m637/8. *Publisher: Blackwell Publishing Ltd.*

29- Bis(2-bromopyridinium) hexabromidostannate(IV).

Ali, Basem Fares; Al-Far, Rawhi H.; Haddad, Salim F. *Acta Crystallographica, Section E: Structure Reports Online* (2008), E64 (6), m749-m750, m749/1-m749/6. *Publisher: Blackwell Publishing Ltd.*

30- Bis(2-amino-6-methylpyridinium) tetrabromidocuprate(II).

Al-Far, Rawhi H.; Ali, Basem Fares; Haddad, Salim F. *Acta Crystallographica, Section E: Structure Reports Online* (2008), E64 (5), m689-m690, m689/1-m689/9. *Publisher: Blackwell Publishing Ltd.*

31- Bis(2,6-dimethylpyridinium) tetrabromidocobaltate(II).

Ali, Basem Fares; Al-Far, Rawhi H.; Haddad, Salim F. *Acta Crystallographica, Section E: Structure Reports Online* (2008), E64 (3), m485-m486, m485/1-m485/8. *Publisher: Blackwell Publishing Ltd.*

32- 3-Ammoniopyridinium tetrabromidomercurate(II) monohydrate.

Ali, Basem Fares; **Al-Far, Rawhi H.**; Haddad, Salim F. *Acta Crystallographica, Section E: Structure Reports Online* (2008), E64 (6), m751-m752, m751/1-m751/9. *Publisher: Blackwell Publishing Ltd.*

33-Three-dimensional framework structures: isomorphous bis(2,6-diamino-3,5-dibromopyridinium) tetrabromidometallate(II) salts with CdII and MnII.

Al-Far, Rawhi H.; Haddad, Salim F.; Ali, Basem Fares. *Acta Crystallographica, Section C: Crystal Structure Communications* (2009), C65(8), m321-m324. *Publisher: Wiley-Blackwell.*

34- Cadmium (II) diallyldithiocarbamate complexes with 2,2'-bipyridine and 1,10-phenanthroline: spectroscopic and crystal structure analysis.

Ali, B. F.; **Al-Far, R.**; Zaghal, M. H.; Judeh, Z.; Haddad, S. F. *Journal of Coordination Chemistry* (2009), 62(12), 2028-2036. *Publisher: Taylor & Francis Ltd.*

35- Bis(2-amino-4-methylpyridinium) tetrachloridocuprate(II).

Al-Far, Rawhi H.; Ali, Basem Fares. *Acta Crystallographica, Section E: Structure Reports Online* (2009), E65 (1), m73-m74, m73/1-m73/8. *Publisher: Wiley-Blackwell.*

36- Bis(2,6-dimethylpyridinium) tetrabromidozincate(II).

Ali, Basem Fares; **Al-Far, Rawhi.** *Acta Crystallographica, Section E: Structure Reports Online* (2009), E65 (5), m581-m582. *Publisher: Wiley-Blackwell.*

37- Bis(2,6-diamino-3,5-dibromopyridinium) hexabromidostannate(IV).

Al-Far, Rawhi H.; Haddad, Salim F.; Ali, Basem Fares. *Acta Crystallographica, Section E: Structure Reports Online* (2009), E65 (5), m583-m584. *Publisher: Wiley-Blackwell.*

38- Biotransformation of methyl cholate by *Aspergillus niger*.

Al-Aboudi Amal; Mohammad Mohammad Y; Haddad Salim; **Al-Far Rawhi**; Choudhary M Iqbal; Atta-Ur-Rahman *Steroids* (2009), 74(4-5), 483-6.

39- 2,5-Dibromopyridine.

Al-Far, Rawhi H.; Ali, Basem Fares. *Acta Crystallographica, Section E: Structure Reports Online* (2009), E65 (4), o843. *Publisher: Wiley-Blackwell.*

40- Crystal Structure and Crystal Supramolecularity of Bis (3,5-Dimethylpyridinium) Tetrahalocuprate(II) [Halide = Cl or Br].

Rawhi H. Al-Far, Basem F. Ali, Salim F. Haddad. *Jordan Journal of Chemistry Vol. 4 No. 2, 2009, pp. 131-141.*

41- Crystal supramolecularity of organic-inorganic hybrids of polyhalides: structures of 2,5-dibromopyrazinium triiodide and 2-bromopyridinium dibromiodide.

Ali, Basem F.; **Al-Far, Rawhi**; Haddad, Salim F. *Main Group Chemistry* (2009), 8(3), 177-187.

42- Three isomorphous 2,6-dibromopyridinium tetrabromidometallates: $(C_5H_4Br_2N)_2[MBr_4] \cdot 2H_2O$ (M = Cu, Cd and Hg).

R. H. Al-Far, S. F. Haddad and B. F. Ali. *Acta Cryst.* (2009), *C65*, m451-m454.

43- Density functional theory calculations of pentabromidooxomolybdate(V) anion with 2,2'-bipyridinium cation: Comparison between the calculated geometry and the crystal structure determination at 293 and 90K. Haddad, Salim F.; Ali, Basem F.; Al-Far, Rawhi H.; Dawoud, Jamal N.; Alomari, Mohammed I. *Polyhedron* (2010), *29(3)*, 1109-1115. *Publisher: Elsevier B.V.*

44. Hydrogen Bonded, $\pi \cdots \pi$ Stacked and $X \cdots \pi$ Framework Structures in Bis(2,6-Lutidinium) Tetrahalocuprate(II) Complexes.

Basem Fares Ali, Rawhi H. Al-Far, Salim F. Haddad. *Journal of Chemical Crystallography* (2010), *40(8)*, 696-701.

45-Crystal Supramolecularity in 2,2'-iminodipyridinium tetrahalometallate(II) salts: Supramolecular motifs that control tetrahedral halometllate solid state structures.

Salim F. Haddad^a, Basem Fares Ali^b and Rawhi H. Al-Far^c. *Polyhedron* 30(2011), 1061-1069.

46- Synthesis, Crystal Structure, and Quantum Mechanics Studies of Tetrapyridinecopper(I)iodide.

Ehab Alshamayleh, Rawhi Al-Far and Muath Atmeh. *Dirasat, pure sciences. Volume 38, No. 1, 2011.*

47- Hemilability of ether-phosphine in ruthenium(II) complexes: $31P\{1H\}$ -nuclear magnetic resonance (NMR), fast atom bombardment-mass spectroscopy (FAB-MS) and extended X-ray absorption fine structure spectroscopy (EXAF) to confirm the open-closed behavior.

Ismail Warad^{1*}, Rawhi Al-Far², Saud Al-Resayes¹, Ahmed Boshala¹ and Belkheir Hammouti³. *International Journal of the Physical Sciences Vol. 6(31), pp. 7183 - 7190, 30 November, 2011.*

48- Synthesis, spectral, thermal, X-ray single crystal of new $RuCl_2(dppb)$ diamine complexes and their application in hydrogenation of Cinnamic aldehyde.

Ismail Warad^{a,*}, Hanan Al-Hussain^a, Rawhi Al-Far^b, Refaat Mahfouz^a, Belkheir Hammouti^c, Taibi Ben Hadda^d

Spectrochimica Acta Part A: Molecular and Biomolecular Spectroscopy 95 (2012) 374–381.

49- Bis(2,6-dimethylpyridinium) dibromiodate bromide

Rawhi Al-Far,^{a,*} Basem F. Ali^{b*} and Salim F. Haddad^c *Acta Cryst.* (2012). *E68*, o2743.

50- 2-Amino-5-methylpyridinium dibromiodate

Salim F. Haddad, Basem F. Ali and Rawhi Al-Far. *Acta Cryst.* (2012). *E68*, o2786.

51- 2,6-Dimethylpyridinium bromide

Salim F. Haddad,^a Basem F. Ali^{b*} and Rawhi Al-Far^{c,d} *Acta Cryst.* (2012). *E68*, o2983–o2984.

52- Redetermination of 2,2'-bipyridine-1,1'-diium dibromide

Basem F. Ali, Rawhi Al-Far and Salim F. Haddad *Acta Cryst.* (2012). *E68*, o3033.

53- Bis(2,4,6-trimethylpyridinium) tetrabromidozincate

Basem F. Ali,^{a*} Salim F. Haddad^b and Rawhi Al-Far^c *Acta Cryst. (2012). E68, m1320.*

54- 3-(Ammoniomethyl)pyridinium dibromide

Basem F. Ali,^{a*} Rawhi Al-Far^b and Salim F. Haddad^c *Acta Cryst. (2012). E68, o3066.*

55- Bis(2,4-dimethylpyridinium) tetrabromidomercurate(II)

Rawhi Al-Far, Salim F. Haddad and Basem F. Ali *Acta Cryst. (2012). E68, m1499.*

56-Trans/cis isomerization of [RuCl₂(diphosphine)(diamine)] complexes: Synthesis, X-ray structure and catalytic activity in hydrogenation .

Spectrochimica Acta Part A: Molecular and Biomolecular Spectroscopy, Volume 105, 15 March 2013, Pages 466-473.

Ismail Warad, Hanan AlHussen, Hamdah Alanazi, Refaat Mahfouz, Belkheir Hammouti, Mohammad A. Al-Dosari, Rawhi Al-Far, Taibi Ben Hadda

57- A novel polymeric metal halide extended network lead(II)-bromido complex, [(2-amino-5-methylpyridinium) (PbBr₃)]_n

Rawhi Al-Far¹, Basem Fares Ali², Salim F. Haddad³. *Main Group Chemistry 12 (2013) 105–112.*