

## Curriculum Vitae

*Prof. Muhammad Hasan Radi Ashram*

*Professor of Organic and Macrocyclic Chemistry*

Date of Birth: Nov.

Place of Birth: Al-Karama/Jordan

Status: Married

Nationality: Jordanian

Language Proficiency : Arabic (Native), English (Good command in reading, writing, and conversation)

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### UNIVERSITY EDUCATION

- Nov. , - present Professor , Chem. Dept at Mutah University
- Nov. , - Nov. , Associate Prof., Chemistry Dept at Mutah University.
- Oct. – Nov. Assistant Prof., Chemistry Dept. at Mutah University.
- Sept. – Ph.D. Degree, Organic Chemistry,  
Memorial University of Newfoundland, St. John's, NF,  
Canada.
- Sept. - M.Sc. Degree, Organic Chemistry,  
Jordan University, Amman, Jordan.
- Sept. - B.Sc. Degree, Chemistry,  
Jordan University, Amman, Jordan.

### SCHOLARSHIPS

Scholarship for obtaining M.Sc from Jordan University ( - ).

Scholarship for obtaining Ph.D. from Mutah University ( - ).

### AWARDS

In and due to the productivity of my research work, I have been nominated as a Fellowship in Graduate Studies at Memorial University of Newfoundland.

### RESEARCH EXPERIENCE

Nov. , - present Professor , Chem. Dept at Mutah University

Nov. , -present Associate Prof. Of organic chemistry at Mutah University.

Oct. -Nov. Assistant Prof. of organic chemistry at Mutah University. My research interest is organic synthesis, synthesis of crown ethers, calix[n]arenes, calix[n]naphthalenes and their derivatives and studying of their complexation properties with metal ions and neutral molecules such as fullerenes using various spectroscopic methods.

Summers of the years:

, , and Visiting Scientist at Chemistry Department/ Memorial University.

May - Ph.D. candidate Organic and Physical-Organic Chemistry Memorial University of Newfoundland, Canada.  
**Supervisor: Prof. Paris E. Geohrgiuo**, Chemistry Department, Memorial University of Newfoundland, NF, A B x Canada.

***Thesis Title: "Synthesis of calix[ ]naphthalenes and their properties".***

*In our group reported the first synthesis of a new class of molecules that are closely related to calixarenes, but which are naphthalene-based. The properties of these compounds can have important applications such as for example, being able to selectively bond non-covalently with other molecules that have specific molecular architectures. We have also recently reported the synthesis of hexahomooxacalix[ ]naphthalenes in which the naphthalene units are linked by CH OCH groups instead of methylene bridges. Such new molecules whose molecular architecture can be controlled are desirable since no single type of molecular structure can provide a basis for modelling all the various aspects of enzyme behaviour. My research is currently concerned in studying the molecular recognition/complexation of these compounds with various "guest" molecules such as [ ]- and [ ]fullerenes using different methods such as UV-VIS, NMR. Another class of*

*compounds that are considered as host molecules are crown ethers. We have synthesized several types of new types of crown ethers such as thiaazacrown ethers and thiaoxacrown ethers and studying their complexation behavior with transition metal cations and neutral molecules.*

Sept. – August M.Sc. Organic Chemistry  
Jordan University, Amman, Jordan  
**Supervisor: Prof. Musa Nazer**, Chemistry Department,  
Jordan University, Amman, Jordan.

***Thesis Title: “Recation of nitroanilines with sodiumcyanoborohydride and different carboxylic acids”.***

### **EMPLOYMENT RECORD**

Nov. , – present Professor , Chem. Dept at Mutah University  
- Sabatical leave at Tafila Univ.+ Balqa’ Applied Univ.  
Nov. -present Associate Prof. Of organic chemistry at Mutah University.  
Oct. – Assistant Prof, of Organic, Mutah University, Mutah, Al-Karak,  
Jordan.  
May. – Ph.D candidate at Memorial University of Newfoundland,  
Canada.  
Jan. - May Teaching Assistant, Organic Chemistry  
Chemistry Department, Mu’Tah University, Jordan.  
Laboratory demonstrator to undergraduate students in  
Organic Chemistry laboratories, as well as responsible for  
preparing the experemental apparatus and marking the students  
aboratory reports.  
Sept. -Jan. Chemistry lecturer, Private College, Amman, Jordan.  
Presented Chemistry lectures in the areas of Organic, Analytical  
and General Chemistry for Science programme and medical  
programme students. Prepared students for the comprehensive  
examination.  
Sept. -June Chemical analyst, Forensic Lab, Jordanian Army, Amman.  
Sept. - Teaching assistant at Chemistry Department/ Jordan University.

### **Computer Skills:**

- ICDL certificate ٢٠٠٤.
- Presentation and lecturing using powrpoint software and data show machine.

### **Graduate Students Supervision ( M. Sc.) :**

<b>Student Name</b>	<b>Thesis Title</b>
. Maher Abu Malouh	<i>“Synthesis of calix[ ]thiacrowns and their metal complexation properties”</i> , .
. Ebtessam Yaseen Al-Jaafreh	<i>“Synthesis of new azathiadibenzocrown ethers and study of their complexation properties”</i> , .
. Muhammad Al-baqaeen	<i>“Complexation and a thermodynamic Studies of oxathiadibenzocrown ethers with some transition metals”</i> , .
٤. Maysa’a Abu Al-Homos	<i>“A synthesis of new podant derivatives and a study of their complexation with heavy metals”</i> ,
٥. Muhammad Al-Rbeehat	<i>Novel layered double hydroxide intercalated with crown ether: Preparation, characterization and heavy metals adsorption.</i>

### **Master Theses Examining Committees:**

Student Name	Thesis Title
. Rami Al-Akhras	<p>“Some reactions of unsymmetrical aromatic aldehydes with Dimethyl acetylenedicarboxylate, supervisor: Prof. Abdullah El-Alali, Chem. Dept./Mutah Univ.,</p>
. Ali Al-Nawaiseh	<p>“Synthesis and characterization of <i>2</i>-thienyl-<i>5</i>-substituted-<i>4</i>-trifluoromethyl pyrazole, supervisor: Prof. Sammer Al-Taweel, Chem. Dept./Mutah Univ.,</p>
. Ali S. Al-Abadleh	<p>Synthesis of <math>\beta</math>-nitroalcohols via Tin(II)chloride catalyzed addition reactions of bromonitromethane to aldehydes, supervisor: D. Ali Mahasneh, Chem. Dept./Mutah Univ.,</p>
. Fedaa' Al-Adaileh	<p>Synthesis and characterization of poly(<i>2</i>-dinitro-<i>5</i>-hexyl-<i>2</i>-bithiophene), supervisor: Prof. Sammer Al-Taweel, Chem. Dept./Mutah Univ.,</p>
. Hajar Al-Tarabsheh	<p>Charge transfer complexation between [C<sub>60</sub>]fullerene and some amines, supervisor: Dr. Shehadeh Mized, Chem. Dept./Yarmouk Univ.,</p>
- Elita Al-Jarrah	<p>A Thermodynamic Study of the Complexation Between C<sub>60</sub> and Some Calix[4]crown ethers supervisor: Dr. Shehadeh Mized, Chem. Dept./Yarmouk Univ.,</p>
- Maun Al-Tawarah	<p>Reactions of some heteroaromatic Aldehyde-ketone azines (Alketazines) with dimethyl acetylenedicarboxylate Supervisor: Prof. Abdullah El-Alali, Chem. Dept, Mutah Univ.,</p>
- Ahmad Al-Sabaileh	<p>A theoretical study of substituted <i>2</i>-pyridone tautomerism Supervisor: Dr. Hamzeh Al-Omari, Chem. Dept, Mutah Univ.</p>

- Asmaa' Al-Burdini      “Some reactions of symmetrical and unsymmetrical hetero aromatic aldazines with Dimethyl acetylenedicarboxylate,  
**supervisor: Prof. Abdullah El-Alali, Chem. Dept./Mutah Univ., Nov.** .
- Maram Al-Dweik      “Synthesis and properties of some new (substituted) imidazo[*h*]quinoline-*h*-carboxylic acids and esters”  
**supervisor: Dr. Jalal A. Zahrai, Co-supervisor: Prof. Mustafa M. El-Abadelah Chem. Dept./Jordan Univ., May** .
- Dalia Al-Sa'ad      “Synthesis and spectroscopic identification of some new substituted thiazolo-triazole derivatives”  
**supervisor: Prof. Hasan Tashtoush, Co-supervisor: Prof. Mahmoud Al-Taleb/ Chem. Dept./Yarmouk Univ., July** .
- Khalid Hijazin      “Synthesis and characterization of thieno[*a*]-*b*]indoles and related derivatives  
**Supervisor: Prof. Samir Al-Taweel, chem. Dept., Mutah University, May** .

### PUBLICATIONS:

- Synthesis and Physical Studies of polycarbonate of *p*-*tert*-butylcalix[4]arene: Highly Selective Receptor for Na<sup>+</sup>, **Muhammad Ashram**, Nawash Al-Ghezawi, Ibrahim Abu Awaad and G. Asman, accepted for publication in *Turkish of Journal Chemistry* 2009.
- Genotoxicity of Different *tert*-Butylcalix[4]crowns, Ahmad Khalil, Ahmed Maslat, Abeer Hafez, Shehadeh Mizyed and Muhammad Ashram, *Z. Naturforsch.* 64 c, 167-170 (2009).
- . A Convenient Synthesis of New Thiaazacrown Ethers and Study of Their Complexation Reactions with Some Transition Metal Cations in Binary Acetonitrile-Chloroform Mixture Using the Conductometric Method, **Muhammad Ashram** and Ebtesam Al-Jaafreh, *J. Incl Phenom Macrocycl Chem.* 62, 70-80 (2008).
- . Synthesis and Biological Activities of New Azacrown Ether Schiff-Bases and Spectrophotometric Studies of Their Complexation with [C<sub>60</sub>]Fullerene”, **Muhammad Ashram**, Ahmed Maslat and **Shehadeh Mizyed**, accepted for publication in *Toxicological & Environmental Chemistry* ( ).

- o. O-Ethoxycarbonylmethoxy esters of homocalix[n]naphthalenes: Synthesis and recognition behavior towards alkali cations”, " A. H. Tran, **Muhammad Ashram**, **S. Mized** and P. E. Georghiou, accepted for publication in *J. Incl Phenom Macrocycl Chem*, 70: 43-49 (2008).
- . A Spectrophotometric Study of the Charge Transfer Complexes of [ ]fullerene with Different *tert*-Butylcalix[ ]crowns, Shehadeh A. Mized, Elita Al-Jarrah, Deeb Marji, **Muhammad Ashram**, *Spectrochimica Acta Part A*, , - ( ).
- . Synthesis and extraction properties of new chromogenic azo-calix[ ]dibenzothiacrown ethers, **Muhammad Ashram**, *Journal of Inclusion Phenomena and Macrocyclic Chemistry*, : - ( ).
- . Synthesis of Novel Hexahomotrithiacalix[ ]arenes, **Muhammad Ashram**, *Journal of Inclusion Phenomena and Macrocyclic Chemistry*, : - ( ).
- . Calixnaphthalenes: Deep, Electron-Rich Naphthalene Ring-Containing Calixarenes. The First Decade, Paris E. Georghiou, Zhaopeng Li, **Muhammad Ashram**, Sultan Chowdhury, Shehadeh Mized, Anh Tran, Hassan Al-Saraierah, David O. Miller, *Synlett*, , - ( ).
- . A Thermodynamic Study of the Charge Transfer Complexes of Iodine with Different *tert*-Butylcalix[ ]crowns, Shehadeh A. Mized, **Muhammad Ashram**, Riyadh SaymeH and Deeb Marji, *Z. Naturforsch B*, b, - ( ).
- . A Convenient Synthesis of Novel -, - and -Membered Macrocyclic Oxathiadibenzo- and Oxathiadinaphthalenocrown Ethers, Part , **Muhammad Ashram**, *Z. Naturforsch.* b, - ( ).
- . A Thermodynamic Study of the Association of K<sup>+</sup> and Rb<sup>+</sup> Cations with - Bis(benzyloxy)-*p-tert*-butylcalix[ ]crown- in a CHCl<sub>3</sub>-Methanol Mixture, Shehadeh A. Mized and **Muhammad Ashram**, *Z. Naturforsch.* a, - ( ).
- . Synthesis and X-ray Crystal Structure of New Oxthiacrown Ethers Containing Sulfoxide Group and their Metal Binding Properties: Highly Selective Receptors for Ag<sup>+</sup> and Cu<sup>+</sup>, **Muhammad Ashram**, *Journal of Inclusion Phenomena and Macrocyclic Chemistry*, : - , ( ).
- . Synthesis of *p-tert*-Butylcalix[ ]arenedibenzothiacrown Ethers and Their Complexation Properties with Transition Metal Ions, **Muhammad Ashram** and Maher Abu Mallouh, *Mutah Lil-Buhuth wad-Dirasat* , , - ( ).

. Ester Derivatives of Hexahomotrioxacalix[ $\epsilon$ ]naphthalenes: Conformational and Binding Properties with Alkali Metal Cations, **Muhammad Ashram**, Shehadeh Mizyed and Paris Georghiou, *Org. Biomol. Chem.*, , - ( ).

. Synthesis of Calix[ $\epsilon$ ]crown Containing Soft Donor Atoms and a Study of Their Metal-Cation Binding Properties: Highly Selective Receptors for  $\text{Cu}^+$ , **Muhammad Ashram**, *J. Chem. Soc. Perkin Trans.* 2, 1662-1668 (2002).

17. Conductance and Thermodynamic Study of the complexation of Ethyl *p*-tert-butylcalix[ $\epsilon$ ]arene Tetraacetate with Alkali Metal and Silver Ions in Various Solvents, **Muhammad Ashram**, *Journal of Inclusion Phenomena and Macrocyclic Chemistry*, , - , ( ).

18. Chemical Reactivity of Hydroxymethylnaphthols: Hetero-Diels-Alder Products of *O*-Naphthoquinomethides Derived from 2- and 3-hydroxymethylnaphthols, **Muhammad Ashram**, David Miller and Paris E. Georghiou, *J. Chem. Soc. Perkin Trans* 1 1470-1476, (2002).

19. Supramolecular Complexation of [60]fullerene with Hexahomotrioxacalix[ $\epsilon$ ]naphthalenes : a New Class of Naphthalene-Based Calixarenes", S. Mizyed, **Muhammad Ashram**, D. O. Miller and P. E. Georghiou, *J. Chem. Soc. Perkin Trans.* 2, 1916-1919, (2001).

. Synthesis of Hexahomotrioxacalix[ $\epsilon$ ]naphthalenes and a Study of their Alkali-Metal Cation Binding Properties, **Muhammad. Ashram**, S. Mizyed and P. E. Georghiou, *J. Org. Chem.*, , - , ( ).

21. Thermodynamic Study of the Complexes of Calix[ $\epsilon$ ]naphthalenes with [60]fullerene in Different Solvents, S. Mizyed, P. E. Georghiou and **Muhammad Ashram**, *J. Chem. Soc. Perkin Trans.* 2, 277-280, (2000).

22. Chemistry of 1,8-Naphthalenesultone: Synthesis of a Water-Soluble Tetrasulfonated  $\text{C}_{70}$  Calixnaphthalene, P.E. Georghiou, Z. Li and **Muhammad Ashram**, *J. Org. Chem.*, 63, 3748-3752, (1998).

23. Spirodienones and Bis(spiroenone) Derivatives of Calix[ $\epsilon$ ]naphthalenes, P. E. Georghiou, **Muhammad Ashram**, H. J. Clase and J. N. Bridson, *J. Org. Chem.*, 63, 1819-1826, (1998).

24. Synthesis of Dibenzopyrenes and Pyrenes via Photolytic Sulphur Extrusion and Intramolecular Cross-Coupling Reaction of (1,3)-Dithianaphthaleneophanes and Dithiametacyclophanes, **Muhammad Ashram**, M. O. Miller, and P. E. Georghiou, *J. Org. Chem.*, 62, 6476-6484, (1997).

. Syntheses of ( )-Dihomocalix[ ]naphthalenes: First Members of a New Class of Naphthalenophanes, P. E. Georghiou, Z. Li, **Muhammad Ashram** and D.O. Miller *J. Org. Chem.*, , , - .

. Syntheses of Calix[ ]naphthalenes Derived from -Naphthol", P. E. Georghiou, **Muhammad Ashram**, Z. Li and S. G. Chaulk, *J. Org. Chem.*, , , - .

. Regioselectivity in the Friedel-Crafts *Tert*-butylation of -Naphthol", P.E. Georghiou and **Muhammad Ashram**, *J. Org. Chem.*, , , - .

### **CONFERENCE PRESENTATIONS**

- **Muhammad Ashram**, Syntheses of Novel Hexahomotrithiacalix[ ]arenes, The Fifth Jordanian International Conference of Chemistry, Yarmouk University, .

. Shehadeh Mizyed, Elita Aljarrah, Deeb Marji, **Muhammad Ashram**, A Thermodynamic Study of the Charge Transfer Complexes of C with different *tert*-butylcalix[ ]crowns, The <sup>th</sup> Jordanian Conference of Chemistry, Al-Mafraq, .

. Shehadeh Mizyed, **M. Ashram**, Riyadh Saymeh and Deeb Marji, A Thermodynamic Study of The Charge Transfer Complexes of Iodine with Different *tert*-butylcalix[ ]crowns, The Fourth Jordanian International Conference of Chemistry, Yarmouk University, .

. **M. Ashram** and Shehadeh Mizyed, Synthesis of New Azacrown Ethers Schiff-Bases and Spectrophotometric Studies of Their Complexation With [ ]Fullerene, The Fourth Jordanian International Conference of Chemistry, Yarmouk University, .

. **M. Ashram** and Paris Georghiou, , "Calixnaphthalene Spirodienone" Presented in the <sup>th</sup> Canadian Society for Conference(CSC), Winsdor, Ontario, Canada.

. B. Hendrick, **M. Ashram**, Paris Georghiou, C. Joblonski and, "Host-Guest Chemistry of Dithiacalixnaphthalenes" Presented in the <sup>th</sup> Canadian Society for Conference(CSC), Winsdor, Ontario, Canada.

. R. Burns, **M. Ashram**, Paris Georghiou and C. Joblonski, "Metallocalix[ ]naphthalenes: The research for Resolution." Presented in the <sup>th</sup> Canadian Society for Conference(CSC), Winsdor, Ontario, Canada.

. P. E. Georghiou, **M. Ashram**, S. Chowdhary, C. R. Joblonski and R. Burns, Aug. - Sept. , , Recent advances in the chemistry of calixnaphthalenes, <sup>th</sup> international conference on calixarenes, Parma, Italy.

. **M. Ashram**, Paris Georghiou, J. Bridson and D. Miller, , “Synthesis of Dibenzopyrenes and Pyrenes via Photochemical Sulfur extrusion and Intramolecular Cross-Coupling Reactions of Dithia[ , ]( )naphthalenophanes and Dithia[ , ]metacyclophanes” Presented in the <sup>th</sup> Canadian Society for Conference (CSC), St. John’s, Newfoundland, Canada.

. Paris Georghiou, Z. Li and **M. Ashram**, , ”Calixnaphthalenes: Novel Supramolecular Building Blocks” Presented in the <sup>th</sup> Canadian Society for Conference (CSC), Guelph, Canada.

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## **REFERENCES**

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Jordan University  
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Mutah University  
Mutah, Al-Karak  
Jordan

### **Prof. Nidal Hawamdeh**

Dean of Graduate studies  
Mutah University  
Mutah, Al-Karak  
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