

# Curriculum vitae

## Abood Ahmed Awadh Bahajaj



### 1. Personal

Name :Abood Ahmed Awadh Bahajaj  
Sex :Male  
Marital Status :Married with two daughters and three boys  
Place of Birth : Al-Hami, Hadhramout Governate, Republic of Yemen.  
Date of Birth : 24<sup>th</sup> September 1958 .  
Nationality :Yemeni .  
Present Position : Professor of Organic Chemistry ,Chemistry department  
, College of Science , Mukalla , Hadhramout University of Science &  
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### 2. Addresses

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### **3. Education**

Secondary school certificate (Keifan secondary school for boys, scientific section, State of Kuwait, 1976).  
B.Sc. (Major Chemistry, Minor Mathematics, Kuwait University, College of Science, Department of Chemistry, 1980).  
M.Sc. (Organic Chemistry, Kuwait University, College of Science, Department of Chemistry, 1983).  
Ph.D. (Organic Chemistry, York University, Alcuin College, Department of Chemistry, United Kingdom, 1995).

### **4. Teaching Experience**

Academic assistant, Department of Chemistry, College of Science, Kuwait University, 1980-1983.  
Teacher assistant, Department of Chemistry, College of Science, Kuwait University, 1983-1990.  
Teacher assistant, Department of Chemistry, College of Education-Mukalla, Aden University, 1991-1995.  
Assistant Professor of Organic Chemistry, Department of Chemistry, College of Education-Mukalla, University of Hadhramout of Science and Technology 14/7/1995- 29/4/2006.  
Associate Professor of Organic Chemistry, Department of Chemistry, College of Science – Mukalla, University of Hadhramout of Science and Technology 30/4/2006 – 26/6/2011.  
Professor of Organic Chemistry, Department of Chemistry, College of Science – Mukalla, University of Hadhramout of Science and Technology 27/6/2011 - Now.

## **5. Professional Experience**

- \* Head of chemistry Department, 1995-1999.
- \* Manager of higher studies and scientific research, College of Education-Mukalla, University of Hadhramout of Science and Technology 1998-1999.
- \* Vice-Chancellor Assistant for Academic Affairs and Graduate Studies, University of Hadhramout of Science and Technology, 1999-2001.
- \* Dean of Graduate Studies and Scientific Research, University of Hadhramout of Science and Technology, 2001-2004.
- \* One-year sabbatical leave at King Abdul Aziz University, College of Science, Department of Chemistry, Jeddah. Under the supervision of Prof. Dr. Abdullah M. Asiri. 9/2004-8/2005.
- \* Associate professor of Organic Chemistry and Consultant at the Chemical Pollution Protection Committee, King Saud University, College of Science, 3/1/2009 -.

## **6. Conferences, symposiums and training**

- a) Participating in training program held from 1<sup>st</sup> July to 27<sup>th</sup> August 1980 in the area of Petroleum Technology at Kuwait Institute for Scientific Research (KISR), State of Kuwait.
- b) Participating within the training staff in the 11<sup>th</sup> Student Summer training Program held from 21<sup>st</sup> June to 13<sup>th</sup> August 1986 at Kuwait Institute for Scientific Research (KISR), State of Kuwait.
- c) Participating within the training staff in the 13<sup>th</sup> Student Summer training Program held from 28<sup>th</sup> May to 20<sup>th</sup> July 1988 at Kuwait Institute for Scientific Research (KISR), State of Kuwait.
- d) Participating at the Ninth Postgraduate Heterocyclic Symposium held at University of Leicester, United Kingdom, Wednesday 6 July 1994 (Poster).
- e) Member of the scientific committee for the seminar entitled (Water in Hadhramout Governate: Environmental and Economical Study) held on 27<sup>th</sup> – 29<sup>th</sup> May 1997 at College of Education-Mukalla, University of Aden- Republic of Yemen.
- f) Member of organizing committee and head of scientific committee for the seminar entitled, (Environmental pollution in Hadhramout Governate) held on 18-20<sup>th</sup> September 1999 at College of Education-Mukalla, University of Hadhramout of Science and Technology- Republic of Yemen.
- g) Head of the organizing committee of the workshop for developing course-plan of Colleges of Education held on 1<sup>st</sup>-2<sup>nd</sup> of January 2002 at College of Education-Mukalla.

- h) External examiner and chairman of the examination committee for the master dissertation entitled "Isolation of harmine and harmaline and their HPLC chromatographic quantification in seeds of Yemeni *Perganum Harmala*", presented by Gamal Ahmed Abdullah Ed-dhbli to the Chemistry Department, College of Education , Aden University. Supervisor Dr. Taha Abubaker Fadel. Date of examination 18/6/2006.
- i) External examiner for the master dissertation entitled "Synthesis, Characterisation, and biological activity study of Oxazolidine compounds by 1,3-dipolar cycloaddition reactions ", presented by Mohammed M. Abdulallah Al-Ghorbani to the Chemistry Department, College of Education , Aden University. Supervisor Prof. Dr. Usama S. Altimari and Dr. Taha Abubaker Fadel. Date of examination 16/3/2008.
- j) External referee for the Arabian Journal of Chemistry (Saudi Arabia).
- k) External referee for King AbdulAziz University Journal (science) (Saudi Arabia).
- l) Extrnal referee for the University of Aden Journal for Natural and applied Sciences (Republic of Yemen).
- m) External referee for the Journal of Hadhramout University (Republic of Yemen).
- n) Participating with a poster held in riyadh the (2004)
- o) Paticipating with a poster entitled " Photochromic properties of fulgides in solid polymer matrices in held in Macca (2006).
- p) Participating with two posters entitled " Photochromic properties of 7',8'-dichloro-1,3,3-trimethylspiro[indoline-2,3'-[3H]benzo[b][1,4]oxazine] doped in PMMA and Epoxy resin thin films" and " Photochromic properties of 1',3',3'-trimethyl-6-nitrospiro[2H-1-benzopyran-2,2'-indoline] doped in PMMA and epoxy resin thin films" in Tiabah International Conference of Chemistry 2009.
- q) A reprtesentitive for the Chemical Pollution protection Committee in the exhibition accompanied the Taibah International Conference of Chemistry 2009.
- r) Participating with a poster entitled " The Effect of annealing temperature and solid polymer matrices on the fatigue resistance of furylfulgide" in Kuwait Conference of Chemistry 2010 held at Kuwait from 6-9/3/2010.
- s) Participating within staff training in the training course entitled "Chemical Safety in Laboratory and Stores" held at King Saud University under the supervision of the Chemical Pollution protection Committee on 13-17/3/2010 and 27-31/3/2010.

- t) Attending a workshop entitled "First Workshop on Chemical Safety" organized by Chemical Pollution Protection Committee (King Saud University) and Chemical Security Engagement Program (USA) held on 18-19 May 2010 at Intercontinental Riyadh, Saudi Arabia.

## **7-Names and Addresses of the referees**

a) Dr John M. Vernon  
Department of chemistry  
University of York  
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b) Prof. Dr. Noria A. Al-awadi  
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C) Prof. Dr. Abdullah Mohamed Asiri  
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## 8-M.Sc. Thesis

### a) Thesis Title

(Amino-*s*-Triazolethiols: Chemistry and Antimicrobial Activity Studies ). Supervised by Dr. N. F. Eweiss (Assoc. prof.), Kuwait University, Faculty of Science, Chemistry department, (1983).

### b) Brief Summary of the M.Sc. work

Twelve 4-Amino-5-aryl-1,2,4-triazole-3-thiones were synthesized using standard methods. These compounds were then allowed to react with various reagents such as carboxylic acids, acid chlorides, methylene chloride, methyl bromoacetate, chloroacetonitrile, phenacyl chloride, cyanogen bromide, carbon disulfide, and phenyl isothiocyanate to give the corresponding products. The correctness of the assigned structures was confirmed by elemental analyses and MS, IR and NMR spectroscopic methods. The synthesized compounds were screened against different strains of bacteria and fungi through determination of their minimum inhibition concentration values. The results of this study were published in three scientific papers ( see list of publications).

## 9-Ph.D. Thesis

### a) Thesis Title

Asymmetric synthesis of spiro lactams *via* N-acyliminium ions.  
Supervised by Dr. J. M. Vernon, (Reader in Chemistry), University of York, Alcuin college, Department of Chemistry, (1995).

### b) Brief Summary of the Ph.D. work

The main subject of the thesis is the diastereoselective synthesis of spiro lactams via N-acyliminium ion intermediates. Besides, some fused heterocyclic systems containing nitrogen at a bridgehead position were also prepared. To induce such diastereoselective synthesis, two auxiliary groups were tried.

The N-acyliminium ion precursors used in this study were obtained by two methods. The first one is the  $\alpha$ -hydroxylactams obtained by Grignard addition to cyclic imides. The second route is the bicyclic lactams (oxazolo[1,2-a]pyrrolidin-5-ones and oxazolo[1,2-a]piperidin-5-ones). These bicyclic lactams were easily obtained as a single diastereoisomer by condensing equimolar amounts of  $\gamma$ - or  $\delta$ -ketoacids with optically pure  $\beta$ -aminoalcohol.

Acid-catalyzed intramolecular cyclisation of N-acyliminium ion precursors using PPA, TFA, or  $\text{AlCl}_3$  gave high yields of spiro lactam

with > 3:1 diastereoselectivity. The relative configuration of these spiro lactams was proved by single crystal X-ray crystallography.

Six scientific papers were already published (see list of publications).

## **10-Areas of research Interest:**

- Organic synthesis
- Asymmetric organic synthesis
- Mechanistic studies
- Isolation and characterization and synthesis of natural products.
- Photochemistry
- Chemical Safety

## **11- Couses taught**

- a) Organic Chemistry (Chemisrty of aromatic Compounds, Third year, Major Chemistry, Faculty of Education).
- b) Organic Chemistry of functional groups (Second year students, Faculty of Science, major chemistry).
- c) Organic Chemisrty (Chemistry of biomolecules, Fourth year students, Major Chemistry, Fucilty of Education).
- d) Selected Topics (Organic reactions mechanism, Fourth year students, Major Chemistry).
- e) Organic Chemistry for Chemical and Petroleum Engineering students (Second year students).
- f) Research project (Literature survey, fourth year students Major Chemistry)
- g) Organic Spectroscopy (Fourth year Students Major Chemistry).
- h) Physical Chemistry (Thermodynamics, Second year Students , Major Chemistry).
- i) Physical Chemistry (Electrochemistry, Third year students, Major Chemistry).
- j) Physical Chemistry (Chemical Kinetics, Fourth year students , Major Chemistry).
- k) General Chemistry (First year students).

## **12- Books and notes**

- Abood Ahmed Bahajaj and Abdullah M. Asiri, (Principles of Spectroscopic Analysis of Organic Compounds), First edition, Dar Hafiz, Jeddah, KSA, 2005.

- Abood Ahmed Bahajaj, Comprehensive notes for all the courses taught except the General Chemistry course.

### 13-List of Publications:

1. M. A. Ghannoum, N. F. Eweiss, A. A. Bahajaj and M. A. Qureshi, "Antimicrobial activity of some thiol-containing heterocycles", *Microbios*, (1983), **37**, 151-159.
2. N. F. Eweiss, A. A. Bahajaj and E. A. Elsherbini, "Synthesis of Heterocycles. Part 6. Synthesis and Antimicrobial activity of some 4-amino-5-aryl-1,2,4-triazol-3-thiones and their derivatives", *J. Heterocycl. Chem.*, (1986), **23**, 1451-1458.
3. N.F.Eweiss and A.A.Bahajaj, "Synthesis of Heterocycles. Part 7. Synthesis and Antimicrobial activity of some 7H-s-triazolo[3,4-b][1,3,4]thiadiazine and s-triazolo[3,4-b][1,3,4]thiadiazole derivatives", *J. Heterocycl. Chem.*, (1987), **24**, 1173-1182.
4. A. M. Kiwan, F. M. Hassan, W. Hamdan, A. A. Bahajaj and M. Y. Khalid, "Extraction equilibria of Ni(II) with 3-mercapto-1,5-diarylformazans in the presence of 2,2-bipyridyl and 1,10-phenanthroline", *J. Coord. Chem.*, (1990), **22**, 59-69.
5. A. A. Bahajaj, G. H. Hitchings, M. H. Moore and J. M. Vernon, "Unexpected formation and crystal structure of a spiro [indine-1,7(6H)-pyrrolo[3,4-b]pyridin]-5-one", *J. Chem. Soc., Perkin Trans .1*, (1994), 1211-1214.
6. A. A. Bahajaj, P. D. Bailey, M. H. Moore, K.M. Morgan and J. M. Vernon, "Asymmetric synthesis of spiro2-pyrolidin-5-ones and 2-piperidin-6-ones", *J. Chem. Soc., Chem ., Commun.*, (1994), 2511-2512.
7. A. A. Bahajaj, and J. M. Vernon, "Formation of spiro indane derivatives from hydroxy lactams derived from N-(1-phenylethyl)-phthalimide and -pyridine-2,3-dicarboximide", *J. Chem. Soc., Perkin Trans .1*, (1996), 1041-1046.



8. A. A. Bahajaj, and J. M. Vernon ,and G. D. Wilson, "Stereoselectivity of cyclisation *via* N-acyliminium ions to form pyrido[2',3':3,4]pyrrolo[2,1-a]isoindole, -isoquinoline and – benz[c]azepine ring systems", *J. Chem. Soc., Perkin Trans .1*, (2001), 1446-1451.
9. A. A. Bahajaj, M.H. Moore and J. M. Vernon, "Asymmetric synthesis of spiro 2-pyrrolidin-3-ones, 2-piperidin-6-ones and 1-isoindolin-3-ones. Part 1. N-Acyliminium ion cyclisations with an internal arene nucleophile", *Tetrahedron*, (2004), **60**, 1235-1246.
10. A. A. Bahajaj, J. M. Vernon and G.D. Wilson, "Asymmetric synthesis of spiro 2-pyrrolidin-3-ones, 2-piperidin-6-ones and 1-isoindolin-3-ones. Part 2. N-Acyliminium ion cyclisations with an internal alkene nucleophile", *Tetrahedron*, (2004), **60**, 1247-1253.
- 11) Abood A. Bahajaj and Abdullah M. Asiri, " Photochromic properties of (E)-dicyclopropylmethylene-(2,5-dimethyl-3-furylethylidene)-succinic anhydride doped in epoxy polymer film", *Pigment & Resin Technology*, Year 2005, Volume 34, Number 5, Page 275-281.
- 12) Abood A. Bahajaj and Abdullah M. Asiri, " Photochromic properties of (E)-dicyclopropylmethylene-(2,5-dimethyl-3-furylethylidene)-succinic anhydride doped in PMMA polymer film", *Optical Materials*, Year 2005, Volume 28, Number 8-9, Page 1064-1067 .
- 13) Abdullah M. Asiri, Abood A. Bahajaj, Iqbal M. I. Ismail, and N. A. Fatani, " Novel Dyes driven from hydrazones: Part 3. Synthesis and Characterizations of 2-[4-(1-phenylethylidene)hydrazine] phenylethylene-1,1,2-tricarbonitrile", *Dyes and Pigments*, year 2006, volume 71, Page 103-108.
- 14) Abood A. Bahajaj and Abdullah M. Asiri, " Photocoloration and photobleaching of 3-(2-admantylidene)-2-[5-(p-diethylamino)phenyl-2-methyl-3-furylethylidene]-succinic anhydride doped in PMMA polymer film", *Journal of Photochemistry and Photobiology, A: Chemistry*, Year 2007, Volume 191, Issues 2-3, Page 182-186.
- 15) Abood A. Bahajaj and Abdullah M. Asiri, " Photochromic properties of (E)-dicyclopropylmethylene-(2,5-dimethyl-3-furylethylidene)-succinic

anhydride doped in polystyrene polymer film", *Chinese Journal of polymer science*, Year(2008), Vol. 26, issue (4), pp. 433-441.

16) Abood A. Bahajaj and Abdullah M. Asiri, " Photochromic Properties of 3-(2-admantylidene)-2-[5-(p-diethylamino)phenyl-2-methyl-3-furylethylidene]-succinic anhydride doped in polystyrene polymer film", *Pigment & Resin Technology*, (2008), vol. 37, No.3, pp. 140–144.

17) Abdullah M. Asiri, Abood A. Bahajaj, and Amerah M. Alsoliemy, and A G. Al-Sehemi, "Photochromic Properties of 1,3,3-trimethylspiro[indoline-2,3'-[3H]naphtho[2,1-b][1,4]oxazine] doped in PMMA and epoxy resin thin films", *Arabian J. Chem.*, ( 2009), Vol. 2 , No. 1, pp. 21-30.

18) Abood A. Bahajaj, Abdullah M. Asiri, Amerah M. Alsoliemy, and A G. Al-Sehemi, "Photochromic Properties of 7',8'-dichloro-1,3,3-trimethylspiro[indoline-2,3'-[3H]benzo[b][1,4]oxazine] doped in PMMA and epoxy resin thin films", (2009), *Pigment & Resin Technology*, (2009), Vol. 38, No. 6, pp. 353–358.

19) Abood A. Bahajaj, Abdullah M. Asiri, Amerah M. Alsoliemy, and A. G. Al-Sehemi, "Photochromic Properties of 1',3',3'-trimethyl-6-nitrospiro[2H-1-benzopyran-2,2'-indoline] doped in PMMA and epoxy resin thin films", (2010), *Pigment & Resin Technology* Vol. 39, No. 2, PP. 71-76.

20) M. Bakkar, M. Monshi, I. Warad, M. Siddiqui, A. Bahajaj, " $^1\text{H}$ - $^{13}\text{C}$ -NMR Investigation of *E/Z*-Isomerization around C=N bond in the *trans*-alkene-Pt(II)imine Complexes of some Ketimines and Aldimines", (2010), *J. Saudi Chem. Soc.*, Vol. 14, pp. 165-174.