

An-Najah National University

Chemistry Department

Dr. Othman Hamed:
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Higher Education

1979 – 1983, B.S. Yarmouk University, Irbid, Jordan
1983 - 1985, MS Yarmouk University, Irbid, Jordan
1992 - 1996, Ph.D., Loyola University of Chicago, Chicago, Illinois

Thesis

- MS thesis - "Syntheses and Conformations of Some Perimidones and 2,3-dimethyl -1,2,3,4-tetrahydroquinoxalines Derivatives"
Advisor(s) - Professors Mustafa Ibrahim and Zacharia Fataftah.
- Ph.D. thesis - "Asymmetric Synthesis by Pd(II) Catalysis: Chirality Transfer and New Asymmetric Catalytic Systems"
Advisor - Professor Patrick M. Henry.

Employments

Years	Ranks	Institute
2010 (June 1 to Aug 15)	Visiting Scientist	Rayonier Research Center
2009 (June 1 to Sept. 1))	Visiting Scientist	TransTech Phrama, High Point, NC
2008 (June 1 to Sept. 1)	Visiting Professor	Loyola University Chicago, Chicago, IL
2009-present	Associate Professor	Chemistry Department, An-Najah National University
2007-2009	Assistant Professor	Chemistry Department, An-Najah National University,
2006-2007	Principal Scientist	Rayonier Research Center, Jesup, GA, USA
2002-2006	Associate Scientist	Rayonier Research Center, Jesup, GA, USA
1999-2002	Senior Scientist	Rayonier Research Center, Jesup, GA, USA
1997-1999	Post Doctoral	USDA, New Orleans, USA

1996-1997	Associate	Loyola University Chicago
1988-1990	Lecturer	KFUPM, Dhahran, Saudi Arabia
	Lecturer	

Continuing Educations

- **Coating Science for Coating Chemists.** Shelby Thames Polymer Science Research Center, University of Southern Mississippi, Mississippi, June 1998.
- **Rheology, Thermal Analysis and Lab Scale Processing.** Haake, Atlanta, Georgia, April 2000.
- **Master in Practical and Theoretical Aspects of Multiangle Light Scattering.** Wyatt Technology, Santa Barbara, California, June 2000.
- **Increasing Human Effectiveness.** Rayonier, Jesup, Georgia, February 2000.
- **Managing Interpersonal Relationship Social Styles.** Rayonier, Jesup, Georgia, September 2000.

Awards

- **Achievement Award:** Rayonier Research Center, March 2006.
- **Achievement Award:** Rayonier Research Center, March 2005.
- **Quality Award:** Rayonier Research Center, March 2003.
- **Employee of the Quarter:** For outstanding service and being the best and going the extra mile, Rayonier Research Center, June 2001.
- **Best Teaching Assistant:** Loyola University of Chicago, June 1996.

Expertise

- Thermoplastic/cellulose composites.
- Thermal Bonding.
- Fiber modification for applications in absorbent products
- Superabsorbent polymer and fibers.
- Polymers modification (derivatization, cross-linking, and graft co-polymerization).
- Molecular Masses Determination of Polymers by SEC combined with triple detector (multiangle laser detector, optilab DSP, and viscotek).
- Epoxy synthesis, curing, and characterization (viscosity, density, glass transition, modulus (storage and loss) using Rheometer, TGA, DSC, DMA, and Instron) of cured and uncured epoxy materials from Petroleum and naturally occurring starting materials.
- Structural elucidation by modern spectroscopic techniques (UV-Visible, FT IR, and multi-dimensional NMR).
- Modern chromatographic techniques (HPLC, SEC, Gas-liquid, GCMS, Thin Layer, and Flash Chromatography).
- Handling of air- and moisture-sensitive compounds (Schlenk line, glove box and glove bag).
- Scale-up of bench processes.

Accomplishments

- Developed a new method for making cellulose fiber with high permeability.
- Developed a new superabsorbent material from naturally occurring monomers.
- Asymmetric total synthesis of the antifungal natural product Partheniol.
- Synthesis and complete characterization of novel palladium catalysis for asymmetric synthesis.
- Developed a new superabsorbent fiber from cellulose fiber.
- Developed cellulose fibers with improved liquid acquisition properties.
- Developed cellulose fibers with anti-bacterial properties.
- Developed cellulose fibers with reduced defiberization energy.
- Developed new water miscible silicon polymers for fiber softening.
- Developed cellulose fibers useful for making baby diapers and adult incontinent free of hard spots (
- Synthesis and characterization of new epoxy monomers from naturally occurring and Petroleum monomers (patent application, USDA).
- Synthesis and complete assignment of cellulose ethers by proton and carbon-13 and 2D NMR.
- Synthesis and complete characterization of poly[6-phenyl-6-deoxy-2,3-di-O-methyl]-(-1-4)-anhydro-D-glucose.

Teaching

A. Courses taught in recent years

Course name	Years	Level
Organic Chemistry 1	2007-present	B.Sc.
Organic Chemistry 2 for Pharmacist	2007-present	B.Sc.
Organic Chemistry 2	2007-present	B.Sc.
Organic Chemistry 3	2007-present	B.Sc.
Organic Chemistry 1 for Pharmacist	2007-present	B.Sc.
Mechanism In Organic Chemistry	2008	Ph.D.
Analytical Organic Chemistry	2007-present	B.Sc.
Special Topics In Organic Chemistry	2008-	M.S.

Advanced Organic Chemistry	2008-	B.Sc.
Physical Organic Chemistry	2008	B.Sc.
Special Topics 3 in Organic Chemistry	2009-	B.Sc.

B. Supervision of Graduate Students in Recent Years:

MS students

1. Hisham Qarareyah, "Palladium Catalysts on polymer support". Graduated June, 2009.
2. Dora Smadi . "Studies Toward Isolation And Identification Of Bioactive Natural Products" Expected graduation March., 2010
3. Yusara Fuad "Extraction of Cellulosic Materials from Olive pulp" Graduated December, 2009.
4. Noha Mehdawi "Natural Product Platinum Complexes with potential Antibacterial Activities" .. graduated April., 2010
5. Amal Shalabi "Bio Ethanol Form Olive Industry Waste" Expected graduation June., 2010.

Active Participation in Scholarly Conferences

Conference	Date and Place	Paper Subject
Am. Chem. Soc. Nat'l Meeting, 215th,	Dallas, TX March 1998.	"Physical and Dynamic Mechanical Characterization of Sucrose-Based Epoxy Monomers and Thermosets "Abstract No. CARB041
14th New Orleans Carbohydrate Symposium	New Orleans, La April 2-4, 1998	" Recent Advances in Carbohydrates Chemistry"
215th Am. Chem. Soc. Nat'l Meeting	Dallas, TX. March 1998.	"Synthesis and Characterization of Poly-[6-phenyl-6-deoxy-2,3-di-O-methyl]-1,4-anhydroglucose " Abstract No. Cell046
215th Am. Chem. Soc. Nat'l Meeting	Dallas, TX. March 1998	"Carbon-13 Characterization of O-Alkyl Cellulose Derivatives" Abstract No. Cell046
19th International Carbohydrate Symposium	San Diego, CA. August 9-14, 1998	"The Chemistry of carbohydrate Fibers
1999 Proceeding Beltwide Cotton Conference,.	San Diego, Ca., Vol.1, 000, Jan. 1999	"Rational Design of Cellulosic Fiber Insulation Materials"

217th Am. Chem. Soc. Nat'l Meeting	Anaheim, CA. March 1999	"Unequivocally Assigning All The ¹ H and ¹³ C Resonances in The Repeat Unit of Tri-O-Methylcellulose!" Abstract No. CELL013
Int. Conf. On Value-Added Products for the Sugar Industry	Baton Rouge, LA. April 27, 1999	Physical and Dynamic Mechanical Characterization of Sucrose-Based Epoxy Monomers and Thermosets
NSF, Michigan State	University, E. Lansing, MI, June 23, 1999.	Meeting New Materials Development from sucrose "
219th Am. Chem. Soc. Nat'l Meeting	San Francisco, CA. March 2000	"Synthesis and Characterization of The Repeat Unit of Poly-[(6-Phenyl-6-Deoxy-2,3-di-O-Methyl)-1,2-Anhydroglucose]" Abstract No. CELL71

Publications

- Hamed, Othman A; Yusra, Fuad A. "Isolation and Characterization of Cellulose from Olive Pulp Waste" manuscript in preparation to be submitted to *Cellulose*.
- Hamed, Othman A; Patrik, Henry M., Danial, Becker "Palladium(II)-Catalyzed Dicarboxymethylation of Chiral Allylic Alcohols: Chirality Transfer Affording Optically Active Diesters Containing Three Contiguous Chiral Centers", *Tetrahedron Letters* 51, 3514–3517, **2010**.
- Hamed, Othman A.; Chmielewski; Harry J. "Liquid Distribution Mat Made of Enhanced Cellulosic Fibers" US 7686921, **2010**.
- Sachinvala, N.D.; Hamed, O.A.; Winsor, D.L. "Physical and Dynamic Mechanical Characteristics of Sucro-based Epoxy Monomers and Thermosets. *J. of Poly. Sci.: Part A: Chem. Poly. Ed.* (submitted for publication).
- Hamed; Othman A.; Chmielewski; Harry J., " Cellulosic fibers with odor control characteristics" US Pat Application No. 20070077428.
- Hamed; Othman A.; Chmielewski; Harry J., " Liquid distribution mat made of enhanced cellulosic fibers" United States Patent Application 20070254550.
- Chmielewski, Harry J.; Hamed, Othman A.; Haeussler, Michael "Plasticizing formulation for Fluff Pulp and Plasticized fluff pulp Products made Therefrom " WO Patent 2006060221.
- Hamed, Othman " Superabsorbent Cellulosic Fibers and Method of Making the Same" USA Patent No. 6844066, **2005**
- Hamed, Othman, A; Chmielewski, Harry, J.; "Materials Useful in Making Acquisition Fiber in Sheet Form" **USA Patent No.** 0079361, **2005**.
- Hamed, Othman A.; Haeussler, Michael "Treatment composition for making acquisition fluff pulp in sheet form" **USA Patent No.** 0247419, **2005**.
- Hamed, Othman A.; Chmielewski, Harry J.; McBee, Dana B. "Chemically cross-linked cellulosic fiber and method of making same" **USA Patent No.** 0263258, **2005**.
- Hamed, Othman, A; Chmielewski, Harry, J.; " Materials Useful in Making Acquisition Fiber in Sheet Form" **USA Patent No.** **0079361**, **2005**..

- Hamed, O.A.; Sachinvala, N.D.; Winsor, D.L. "Synthesis and NMR characterization of 6-Phenyl-6-deoxy-2,3-di-O-methylcellulose]" *J. of Poly. Sci.: Part A: Chem. Poly. Ed.* 6 (13) 2002.
 - Hamed O; el-Qisairi A; Henry P M "Palladium(II)-catalyzed oxidation of aldehydes and ketones. 1. Carbonylation of ketones with carbon monoxide catalyzed by palladium(II) chloride in methanol." *The Journal of organic chemistry* (2001), 66(1), 180-5.
 - Vigo, Tyrone L.; Sachinvala, Navzer D.; Hamed, Othman A. "Facile preparations of carboxy-end-capped polyethylene oxides". *Book of Abstracts, 219th ACS National Meeting, San Francisco, CA, March 26-30, (2000), POLY-102. CODEN: 69CLAC AN 2000:334282.*
 - Vigo, Tyrone; Sachinvala, Navzer D.; Hamed, Othman A.. Facile preparations of carboxy-endcapped polyethylene oxides (PEO). *Polymer Preprints (American Chemical Society, Division of Polymer Chemistry)* (2000), 41(1), 144-145. CODEN: ACPAY ISSN:0032-3934. CAN 132:322249 AN 2000:208081.
 - Tregre, Gregory J.; Sachinvala, Navzer D.; Hamed, Othman A.; Winsor, David L.; Bertoniere, Noelie R. "Blends of carboxymethyl and diethylaminoethyl cottons". *Book of Abstracts, 218th ACS National Meeting, New Orleans, Aug. 22-26 (1999), CELL-075. CODEN: 67ZJA5 AN 1999:539909*
 - Sachinvala, N.D.; Hamed, O.A.; Winsor, D.L. "A New Liquid Epoxy from Sugar Cane" *Science Blog June 10, 1999.*
 - Hamed, O.A.; Henry, P.M. "Palladium (II)-Catalyze Oxidation of Aldehyde and Ketones. Carbonylation of Ketones with Carbon-Monoxide Catalyzed by Palladium(II) Chloride in Methanol" *J. Org. Chem.* 66(1), 180-185, **2001**
 - Sachinvala, N.D.; Hamed O.A.; Winsor, D.L. "The Characterization of tri-O-allyl and crotylcellulose by One and Two Dimensional NMR Methods" *J. Poly. Sci.: Part A: Poly. Chem. Ed.* 38,1889, **2000**.
 - Hamed, O.A.; Zaw, K.; Patrick M. "Palladium (II)-Catalyzed Synthesis of Optically Active Diester Containing Three Chiral Centers. A study Using Chirality Transfer" *Tetrahedron Lett.*00, **2003** (Accepted)
 - Hamed, O.A.; Henry, P.M. "Palladium (II) Catalyze Carbonylation of Ketones" *Tetrahedron Lett*, 41,3021, **2000**.
 - Navzer (Nozar) Sachinvala, Othman Hamed, David L. Winsor, Karol Maskos, Casey Grimm, Tyrone L. Vigo, and Noelie R. Bertoniere" One-Step Conversion of Urea to Tertiary Amines" *J. Org. Chem.*, 65(26) 9234–9237, **2000**.
- Sachinvala, N.D.; Hamed, O.A.; Winsor, D.L. "New Liquid Epoxies Created from Cane Sugar" *Science Blog, June 10, 1999.*
- Hamed, O.A; Henry, P.M.; Thompson, C; Palladium(II)-Catalyzed Exchange and Isomerization Reactions. 17. Exchange of Chiral Allyl Alcohols with Hydroxide, Methoxide and Phenyl at High [Cl⁻]. Stereochemistry of the Wacker Reaction" *J. Org. Chem.*, 64, 7745-7750, **1999**.
 - Sachinvala, N.D.; Hamed O.A.; Winsor, D.L. "Characterization of tri-O-methylcellulose by One and Two Dimensional NMR Methods" *J. Poly. Sci.: Part A: Poly. Chem. Ed.* 37(21), 4019, **1999**.
 - Sachinvala, N.D.; Winsor, D.L., Hamed O.A.; "Rational Design of Cellulosic Fiber Insulation Materials" *Beltwide Cotton Conference 2*, 1359, **1999**.
 - Hamed, O.; Henry, P.M. "Oxidation of Olefins by Palladium (II) (16). A New Palladium (II) Catalyze Asymmetric Chlorohydrin Synthesis" *Organometallics* **1998**, 17, 5184.
 - Arab El-Qisairi; Hamed, O.; Patrick M. "A New Palladium (II)-Catalyzed Asymmetric Chlorohydrin Synthesis" *J. Org. Chem.* **1998**, 63(9), 2790.
 - Hamed, O.; Thompson, C; Patrick M. "Stereochemistry of Wacker Reaction (15)- Evidence for Different Modes of Addition at High and Low [Cl⁻]. A Study Using Chirality Transfer" *J. Org. Chem.* **1997**, 62(21), 7082.

- Hamed, O.; Patrick M. "Oxidation of Olefins by Palladium (II). Oxidation of (R)-(-)-Z- and (R)-(-)-E-3-penten-2-ol using Several Nucleophiles to give Chiral -Substituted Ketones. A Simple Means of Finding Stereochemistries and Palladation of Olefins Using Chirality Transfer" *Organometallics*, **1997**, *16*(22), 4903.