



Professor Dr. Mohammed Khair Hourani

1. GENERAL

Nationality : Jordanian

Date of Birth : 1956

Marital Status : Married

Current job : Professor of Chemistry

Department of Chemistry

The University of Jordan

Amman – Jordan

2. EDUCATION :

No.	Degree	University	Graduation year
1	B.Sc. in Chemistry	University of Jordan/Amman/Jordan	1977
2	MS in Chemistry	University of Jordan/Amman/Jordan	1984
3	Ph.D. in Analytical Chemistry	University of Illinois at Urbana-Champaign /USA	1989

3. Administrative Experience.

1. President, Tafila Technical University, Tafila, February 14, 2019 – August 4, 2021.

2. Vice-President for Administrative Affairs

World Islamic Sciences and Education University (WISE) ,

September 2013 – September 2014.

3. Vice-President of Administrative Affairs, University of Jordan,

November 30, 2006 – August 22, 2007.

4. Vice-President of Al-Balqa Applied University

September 21, 03 – September 11, 2006.

5. Vice–Dean of Faculty of Science , University of Jordan
April 4, 2002 – September 20, 2003
6. Chairman of Chemistry Department at the University of Jordan – September 2000 – September 2002.
7. Academic Student Councilor / Department of Chemistry / University of Jordan – 1997– 2000.
8. Head of the Department of Chemistry / Hashemite University/
The Scholastic year 1996/97 (During the sabbatical leave).

4. TEACHING EXPERIENCE.

I have taught the following courses at the graduate and undergraduate levels:

A. Undergraduate level courses.

1. General chemistry (Chem. 101 and Chem. 102)
2. Analytical chemistry introductory course (Chem. 211)
3. Chemical instrumentation (Chem. 212)
4. Instrumental methods of Analysis (Chem 311)
5. Electroanalytical Methods of Analysis (Chem. 312)
6. Environmental Analytical Chemistry (Chem. 411)

B. Graduate courses:

1. Modern Methods in Chemical Analysis (Chem. 711)
 3. Electrochemical methods of Analysis (Chem. 912)
- C. Tailored courses for public and private sectors arranged by the Center of Consultations , Technical Services and Studies at the university of Jordan. These short courses included training courses in the field of chemical and environmental analysis.

5. Languages :

1. Arabic : native speaker.
2. English : Excellent.
3. Excellent acquaintance with computer software and interfacing.

6. Affiliation

- Former Member of the International Union of Pure and Applied Chemistry (IUPAC).
- Former Member of the Editorial Board of the Jordanian Journal of Chemistry

- Former member of "Dirasat" Editorial board. A journal published by The University of Jordan
- Former Member of the Advisory Committee of the Jordanian Journal of Applied Sciences published by The University of Applied Sciences.
- Member of the Editorial Board of the Journal of Arab Chemists Union
- Member of the editorial board of journal of Chemistry and Applications.

7. Research :

a. Head of a research group dedicated to research and development in the field of analytical and electrochemistry.

b. Research Interests:

Electroanalysis and its applications in biological, environmental, industrial and pharmaceutical systems. Surface electrochemistry and electrochemistry of solid/liquid interface, corrosion studies and corrosion inhibition, energy storage and energy conversion, electrocatalysis, studies on utilization of Jordanian industrial raw materials, studies of utilization of CO₂ and N₂ and their conversion to useful compounds.

c. No. of students graduated from my research group :
40 Ph.D. and MS students.

8. Publications:

a. Published Papers

1. M. Hourani and A. Wieckowski, " Electrochemistry of the Ordered Rh(111) Electrode: Surface Preparation and Voltammetry in HClO₄ Electrolyte" *J. Electroanal Chem.*, 227 (1987) 259.
2. M. Hourani and A. Wieckowski, " Single Crystal Electrochemistry of Rhodium: Anion Effects and Order/Disorder Transitions of Clean and Silver Coated Rh(111)" *J. Electroanal Chem.*, 244(1988) 147.
3. L. Palaikis, D. Zurawski, M. Hourani and A. Wieckowski, "Surface Electrochemistry of Carbon Monoxide Adsorbed from Electrolytic solutions at Single Crystal Surfaces of Pt(111) and Pt(100)", *Surf. Sci.*, 199, 183 (1988).
4. D. Zurawski, L. Rice, M. Hourani and A. Wieckowski, "The In-Situ

- Preparation of Well-Defined, Single Crystal Electrodes", *J. Electroanal. Chem.*, 230 (1987), 221.
5. M. Hourani, A. Wieckowski Extended Abstracts, Spring Meeting of the Electrochemical Society, Los Angeles, CA, May 7-12, 1989.
 6. A. Wieckowski, M. Hourani, M. Wasberg and D. Zurawski, "Contrastive Surface Science of Pt(111) and Rh(111) Electrodes", Extended Abstracts, VIII International Summer Conference, June 22-July 1, 1989, Red Island/Rovinj, Yugoslavia.
 7. M. Hourani and A. Wieckowski, "Structural Effects in Heterogeneous Electrocatalysis: Electrohydrogenation of Ethylene on Preferentially Oriented Platinum Electrodes." *Langmuir*, 6 (1990), 379.
 8. M. Wasberg; M. Hourani; A. Wieckowski "Comparison of Voltammetry of Vacuum-prepared Rh(100) and Rh(111) Electrodes" *J. Electroanal. Chem.* 278 (1990) 425.
 9. A. Wieckowski; M. Hourani, L. Palaikis, K. Chan "Electrochemical Techniques to Produce Electrode and Gas Phase Catalysis" Annual Report of the Materials Research Laboratory at the University of Illinois, June 1987.
 10. A. Wieckowski; M. Hourani, L. Palaikis, K. Chan "Electrochemical Techniques to Produce Electrode and Gas Phase Catalysis" Annual Report of the Materials Research Laboratory at the University of Illinois., June 1988
 11. M. Hourani; M. wasberg; C. Rhee; A. Wieckowski "Contrasting Surface Behavior of Rh(111) and Pt(111) Electrodes" *Croat. Chem. Acta*, 63(1990) 373.
 12. M. Hourani, "Potentiostatic Adsorption of Ethylene, Acetylene and Benzene on Pt(111) Electrode. A single Crystal Comparative Study" *Dirasat*, 21B (1994) 107.
 13. M. Hourani "Desulfurization of Thiophene by Electrochemical Perturbation" *J. Electroanal. Chem.* 368 (1994) 139.
 14. M. Hourani "Desulfurization of Thiophene by Electrochemical Perturbation" Proceedings of The First International Conference in Chemistry and its Applications" Doha, Qatar, 7-9 December, 1993.

15. M. Hourani, " Determination of Silver(I) by cyclic voltammetry at Iodine-coated platinum electrodes", *The Analyst*, 119 (1994) 1975.
16. M. Hourani, and Kafa Ibrahim " An Investigation of the Electrocatalytic Properties of Pd-Ta(Substrate) Electrodes" *Mu'tah Journal*, 10(1) (1995) 25.
17. M. Hourani " E. Shamayleh, and Kafa Ibrahim " Electroanalysis of Ag⁺, Hg²⁺ and Fe³⁺ by Voltammetry at Iodine-Coated Platinum Electrodes" *Arab Gulf J. Scient. Res.* 13(2), (1995), , 225.
18. M. A. Alawi, M. Hourani and D. Abu Hilal " Levels of Organochlorine Pesticides in Fish, Algae, Sediments and Sea Water Samples in the Aqaba Gulf" *Toxicological and Environmental Chemistry*, 51 (1995) 121.
19. M. Hourani; M. Alawi. E. Shamayleh" A Wall-Jet Voltammetric Detector Based on an Iodine-Coated Platinum Electrode" *Abhath Al-Yarmook Journal*, 7(2), (1998)19.
20. M. Hourani, " Anodic Stripping Analysis of Silver(I) at an Iodine-Coated Platinum Electrode", *Dirasat*, 26(1), (1999)1.
21. M. Hourani, " Linear Sweep Voltammetric Analysis of Hydrazine at Pd-Ta Adatom Electrode" *Dirasat*, 26(1), (1999) 32..
22. M. Hourani, A. Jarar, and S. Arar, " Atmospheric SO₂ determination by voltammetric analysis at an iodine-coated electrode" *Electroanalysis*, 11(9), (1999) 637.
23. M. Hourani and B. Waleed " Exhaustive Oxidation/reduction of NO₂⁻, NO₃⁻, and N₂H₂ by a Square wave potential regime" .J. Applied Electrochemistry, **30**(2000) 859.
24. M. Hourani, and F. Wedian, " The Effect of Adatoms on the Corrosion Rate of Copper", *Corrosion Science*, **42(12)** , (2000) 2131.
25. Analytical Chemistry : principles and Fundamentals (A text book in Arabic), Dar Al-Dia', Amman (1999).
26. M. Hourani and Y. Eishaiker " *Dictionary of General Chemistry Terms*" (in Arabic) *Dar Al-Shurook, Amman, Dr Al-Shrouq, 2000.*

27. M. Hourani and H. Esmael , “ Aluminum and Calcium Concentration Levels in the Jordanian Surface Waters”, *Frezenius. Environmental Chemistry*, 9(2000) 158.
- 28 . A.A. Isa; Hourani, M.' *Selective Analysis of Copper and Silver Ions Using Electrodes Modified with Zinc(II)- Benzenetricarboxylate Networks*, *Res. J. Chem. Env.*, 219 (2005) 227.
29. Hani Khoury; Hamdallah hodali; Mohammed Khair Hourani; Yousif Mubarak, Naim faquir; Bassel Hananyah; Muayad Esaifan “Mineral Polymerization of Some Industrial Rocks and minerals in Jordan”, *Deanship of Academic Research, University of Jordan* (2008).
30. Muayyed Esaifan; Mohammed Khair Hourani “Indirect Voltametric Method for determination of Nitrogen dioxide in the Ambient Atmosphere” *Jordanian Journal of Chemistry*, 4(2009), 367.
31. M. Hourani and R. Aboshmais, “An Investigation of Adsorption enantioselectivity of Faceted Polycrystalline Platinum and Gold Electrodes” , *Arabian Journal of Science and Engineering*, 39(1), 2013, 123-129.
32. Q. Shunak, M. Abu Hala, A. Bawab and M. Hourani, “Teaching Experimental General Chemistry by Using Computers and Multimedia. A free experiment Approach” , *A special report published by Higher Council of Science and Technology, Amman, Jordan*.
33. Mohammed Khair Hourani “Electroanalytical Chemistry”, (a textbook in Arabic), *Dar Al-dia, Amman, 2010*.
34. M. Hourani and T. Hamdan, *Preparation of nano and Microstructured Gold Surfaces by Application of A Square Wave Potential Regime*, *Surface Engineering and Applied Electrochemistry*, 49(3), 2013.
35. Wojdan Qaddumi and Mohammed Khair Hourani “Electroanalysis of Ethanol at a Pt-Pb_(ad) and Pt-Pb_(ad)-I_(ad) Adatom Electrodes” , *Analytical Chemistry: An Indian Journal*, 12(11) (2013) 403-407.
36. Mohammed Khair Hourani and Amal Maareef, *Electrochemical Extraction of Copper, Silver, and Gold from Environmental water*

- and Soil samples, *Fresenius Environmental Analysis*, 22(5a), 2013.
37. Mohammed Khair Hourani and Hibah Al-Amairah, Voltammetric Stripping analysis of Ag(I) and Cu(II) at low-molecular Weight Chitosan-modified Platinum Electrode", *Fresenius Environmental Bulletin*, 22(12), 2013.
 38. Mohammed Khair Hourani and Anas Wahbeh, Electrochemical Characterization of Jordanian Coins, *Bulgarian Chemical Communications*, *Bulgarian Chemical Communications*, 45, 2013, 347-352.
 39. Ayoub Al-Haj, Mahmoud Alawi, Tawfiq Arafat and Mohammed Khair Hourani , Method Development, Validation and Bioequivalence of Varenicline in Human Plasma by liquid Chromatography Tandem Mass Spectrometry, *Journal of Chromatography B*, 931 (2013) 134-139.
 40. Mohammed Khair Hourani and Bushra Hijaz, Simultaneous Determination of Hydroquinone and Catechol by Cyclic Voltammetry at Iodine-Coated Polycrystalline Platinum Electrode, *International Journal of Natural and Engineering Sciences*, 8(2) (2014), 25-29.
 41. Mohammed Khair Hourani and Wael Mahmood, Preparation of Nanostructured Gold, Silver and Copper Surfaces by Application of a Square wave, *AFINIDAD*, 568 (2014) 299-304.
 42. Esaifan, M; ; Barhoom, A.; Khoury H; Hourani, M.; Wastiels, J.; Rahier, R., Development of Inorganic Polymer by Alkali-activation of Untreated Kaolinitic Clay: Reaction Stoichiometry, Strength and Dimensional Stability. *Construction & Building Materials*, 91(2015) 251-259.
 43. Hourani, M., Khawaldeh, A. , Synergistic Effects of Bismuth Adatoms on Electrocatalytic Properties of Electrodeposited Nanostructured Platinum Electrodes, *International Journal of electrochemical Science*, , 11 (2016) 3555 - 3566. DOI is 10.20964/e110434.
 44. Esaifan, M.; Khoury, H.; Aldabsheh, I.; Rahier, H.; Hourani, M.; Wastiels, J., Hydrated Lime/potassium carbonate as activating mixture to produce kaolinitic clay based inorganic polymer, *Applied clay Science*, 126, 278-286, 2016.

45. Mohammed Khair Hourani, Instrumental Analysis: volume 1 Spectroscopic and Chromatographic methods (A book in Arabic) , The University of Jordan Press. 2016.
46. Mohammed Khair Hourani and Hamzah Abo Hassan, Promotion of Copper Corrosion Resistance by Application of a Square wave Potential Regime to copper substrates in polyvinylpyrrolidone solutions, Portugalia Chemica Acta, 34(4) (2016), **267–275**.
47. Muayad Esaifan, Mohammed Hourani, Hani Khoury, Hubert Rahier, Jan Wastiels, Synthesis of Hydroxysodalite Zeolite by alkali- activation of basalt powder rich in calc-plgioclase, Advanced Powder technology, **28(2) (2016) 473– 480** · DOI: 10.1016/j.appt.2016.11.002
48. M. Amayreh and M. Hourani, Determination of iron in dietary supplements by voltammetric analysis at an iodine-coated polycrystalline platinum electrode, International Journal of Electrochemical Science, 12 (2017) .
- 49 A. Khawaldeh and M. Hourani, Electrochemical Reduction of Carbon Dioxide by Application of A Square Wave Potential Regime at a Polycrystalline Palladium Electrode, International Jordan Journal of Chemistry, (2020) Accepted.
- 50-Mohammad Amayreh ,Mohammed Hourani, *Direct Electrochemical Determination of Hemoglobin in Blood Using Iodine-Coated Platinum Polycrystalline Electrode*, Analytical and Bioanalytical Chemical research. Anal. Bioanal. 6, 1,2019, 59–68.
- 51-Mohammad Amayreh, Mohammed Hourani,*Determination of Iron in Spinach Using Linear Sweep Voltammetry at Iodine-Coated Platinum Rotating Disk Electrode*, Journal of AOAC International. 102,2019,
- 52-Mohammed Khair Hourani, Mohammad Amayreh and Wafa Hourani , *A voltammetric Sensor Based on Iodine-Coated Platinum Electrode for Determination of Iron in Blood Serum*, Journal of analytical and bioanalytical electrochemistry10, 12, 2018, 1620–1628.
53. Rima Alomari, Muayed Esaifan, Mohammed Khair Hourani, Hiba Amayreh, Mohammad Amayreh, Hani Khourai, Synthesis of Electroconducting Hydroxy-Sodalite/Graphite Composite.

- Preparation and Characterization, *Advances in Materials Physics and Chemistry*, (2019), 9(3), 25–36.
54. Mohammed Amayreh, Wafa Hourani, Mohammed Khair Hourani, Voltammetric Determination of Ascorbic acid in pharmaceutical formulations using modified iodine-coated platinum electrode, *Vitae*, DOI: 10.17533/udea.vitae.v28n2a346228.
 55. Mohammad Amayreh, Wafa Hourani, Mohammed Khair Hourani, Anodic stripping voltammetric determination of copper in multivitamin-mineral formulations using iodine-coated platinum electrode, *Methods and Objects of Chemical Analysis* (2019) 16(1) 48–56.
 56. Mohammed Amayreh, Wafa Hourani, Mohammed Khair Hourani, Voltammetric determination of paracetamol in pharmaceutical formulations at iodine-coated polycrystalline platinum electrode, *Methods and Objects of Chemical Analysis* (2021) 16(2), 103–111.
 57. Mohammed Amayreh, Mohammed Khair Hourani, Rima AlOmari, Wafa Hourani, Iron Determination in deep groundwater wells by anodic stripping voltammetry at an iodine-coated platinum electrode, *Portugalia Electrochemica Acta* (2021) 39, 421–430.
 58. Ahmad Khawaldeh, Mariam Odettalah, Mohammed Khair Hourani, Electrochemical reduction of carbon dioxide to oxalic acid application of a squarewave potential regime at polycrystalline palladium electrode, *Jordanian Journal of Chemistry*, (2019) 14(3), 105–112.
 59. Wafa Hourani, Mohammed Amayreh, Mohammed Khair Hourani, Determination of dopamine in blood serum and urine samples by differential pulse voltammetry at an iodine-coated platinum electrode, *Pharmacia* (2023) 70(4): 993–998
DOI 10.3897/pharmacia.70.e110336.
 60. Mohammad Amayreh, Wafa Hourani, Safwan Fraihat, and Mohammed Khair Hourani, Electrochemical Determination of Vanillin in Commercial Food Products Using Cyclic and Differential Pulse Voltammetry at an Iodine-Coated Platinum Electrode, *Russian Journal of Electrochemistry* ((2023) 59(9) 690–696.
DOI: 10.1134/S1023193523090033
 61. Hiba H. Al Amayreh, Aya Khalaf, Majdi Hawwari, Mohammed K. Hourani, Abeer AlBawab, The Recovery of Vanadium Pentoxide (V_2O_5) from Spent Catalyst Utilized in a Sulfuric Acid Production Plant in Jordan, *Materials* (2023) 16 (19) 6503.

b. BOOKS:

1. Mohammed Khair Hourani, Analytical Chemistry: Principles and Fundamentals, Dar Al-Dia'a , 1999.
2. Mohammed Khair Hourani And Yusif Al_Ashaiker, General Chemistry Dictionary, Dar Al-Shurook, Amman, 2000.
3. Mohammed Khair Hourani, Electroanalytical Chemistry, Dar Al-Dia'a, 2010.
4. 3. Mohammed KHair Hourani, Instrumental Analysis, Part 1(Spectrometry and Chromatography), The University of Jordan , Amman , 2016.
5. Mahmood Alawi, Mohammed Khair Hourani and Manar Fayyad, A laboratory Manual for Practical Analytical Chemistry . The University of Jordan , Amman, 2014.