

JAMAL A. SWEILEH

Department of Chemistry, The Hashemite University

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SUMMARY OF QUALIFICATIONS:

- 11 years of professional teaching experience in chemistry at the university level
- A persistent professional with demonstrated leadership skills
- Holder of Ph.D. in Analytical Chemistry from the University of Alberta
- Five years experience in chemical research, management and quality control in the mining and environmental fields
- Development of patented automated instruments and related analytical methods with increased productivity and ease of operation
- A detail-oriented problem-solver who thrives in an independent or team environment
- Excellent track record of research publications

EDUCATION:

Ph.D. Analytical Chemistry, University of Alberta, Edmonton, CANADA, 1986.

M.Sc. Chemistry, University of Bristol, Bristol, ENGLAND, 1980

B.Sc. Chemistry, University of Jordan, Amman, JORDAN, 1974

ACHIEVEMENTS AND SKILLS:

TEACHING

- Taught **general, analytical and instrumental** chemistry at the undergraduate and post-graduate levels
- Re-structured the chemistry study plan and revised course contents
- Prepared the laboratory manuals for analytical and instrumental analysis courses
- Supervised Master of Science projects and theses
- Conducted vigorous chemical research in environmental method development
- Participated in other scholarly activities such as holding conferences, workshops and community services

RESEARCH AND DEVELOPMENT

- Co-developed a novel approach to automation of chemical analysis, and invented the Automated Micro Batch Analyzer (**Patent No. 4,920,056 dated April 1990**).
- Developed an instrument for the automated determination of free and total cyanide in gold-mill effluent and environmental water, which resulted in a ten-fold increase in analytical productivity.
- Developed several fast digestion methods for difficult solid samples with tremendous improvement in productivity after analysis by ICP, GFAA, AAS, IC, XRF, and others
- Developed several automated flow injection methods for metallurgical and environmental applications

ADMINISTRATION

- Performed administration duties including budgeting, workload distribution, procurement of new instruments, equipment and chemicals
- Chaired a chemistry department of 7 faculty members and 12 staff
- Managed the Municipal and Industrial Strategy for Abatement (MISA), program which was initiated by the Ontario Ministry of the Environment
- Initiated, implemented and managed the QC/QA program in the Analytical Chemistry Laboratories
- Headed the chemical analysis section in a phosphate mining company that included a staff of 3 chemists and 9 technicians

EMPLOYMENT HISTORY

FACULTY MEMBER,

Feb. 06 – present

Department of Chemistry, The Hashemite University

FACULTY MEMBER,

Sep. 99 – Sep. 04

Department of Chemistry, University of Qatar

FACULTY MEMBER, ACTING CHAIRMAN

Sep. 95 – Sep. 99

Al Al-Bayt University, Almafraaq, Jordan

FACULTY MEMBER

Sep. 93 – Sep. 95

Department of Chemistry, Applied Science University, Amman, Jordan

SENIOR CHEMIST/ Q.A. MANAGER

Aug. 89 – Sep. 93

Metallurgical Technology Centre, Falconbridge Limited, Sudbury, Ontario, Canada

VISITING RESEARCH SCIENTIST (NSERC) Dec. 87 – Sep. 89

Energy, Mines and Resources Canada, (CANMET), Ottawa, Ontario, Canada

DOW CHEMICAL RESEARCH ASSOCIATE Oct. 86 – Nov. 87

Department of Chemistry, Texas Tech University, Lubbock, Texas, USA

HEAD, CHEMICAL ANALYSIS Jan. 75 – May 81

R & D DEPARTMENT, JORDAN PHOSPHATE MINES CO. LTD., Ruseifa, Jordan

PUBLICATIONS:

1. **J. A. Sweileh**, K.Y. Misef, A. H. El-Sheikh and M. S. Sunjuk “Development of a new method for determination of aluminum (Al) in Jordanian foods and drinks: Solid phase extraction and adsorption of Al³⁺-D-mannitol on carbon nanotubes” *J. Food Comp. Anal.*, **33**, 6–13 (2014)
2. A.H. El-Sheikh, Y. S. Al-Degs, **J. A. Sweileh**, A. J. Said “Separation and flame atomic absorption spectrometric determination of total chromium and chromium (III) in phosphate rock used for production of fertilizer” *Talanta* , **116**, 482-487 (2013).
3. Y. S. Al-Degs and **J. A. Sweileh** “Simultaneous determination of five commercial cationic dyes in stream waters using diatomite solid-phase extractant and multivariate calibration, *Arabian J. Chem.* **5**(2) 219-224 (2012).
4. H. El-Sheikh, M. K. Al-Jafari, **J.A. Sweileh** “Solid phase extraction and uptake properties of multi-walled carbon nanotubes of different dimensions towards some nitro-phenols and chloro-phenols from water” *Intern. J. Environ. Anal. Chem.* **92**(2), 190-209 (2012).
5. A. H. El-Sheikh and **J. A. Sweileh**, “Recent Applications of Carbon Nanotubes in Solid Phase Extraction and Preconcentration: A Review” *Jordan J. Chem.* **6** (1), 1-16 (2011).
6. A. H. El-Sheikh, A. M. Alzawahreh and **J.A. Sweileh** “Preparation of an efficient sorbent by washing then pyrolysis of olive wood for simultaneous solid phase extraction of chloro-phenols and nitro-phenols from water *Talanta*, **85**(2), 1034-1042 (2011).
7. A. H. El-Sheikh , M. M. Abu Hilal, and **J. A. Sweileh** “ “Bio-separation, speciation and determination of chromium in water using partially pyrolyzed olive pomace sorbent” *Bioresource Technology* **102**, 5749–5756 (2011)

8. A. H. El-Sheikh, Yahya S. Al-Degs, Randa M. Al-As'ad, **Jamal A. Sweileh**, Effect of dimensions and oxidation of multi-walled carbon nanotubes on its preconcentration performance and equilibrium uptake of mercury from water, *Desalination*, **270**, 214-220 (2011).
9. A. H. El-Sheikh, **J. A. Sweileh**, Y. S. Al-Degs, Maysoon Saleh, Partially- pyrolyzed olive pomace sorbent of high permeability for preconcentration of metals from environmental waters, *J. Hazardous Materials*, **169**, 58 – 64, (2009).
10. A. H. El-Sheikh, **J. A. Sweileh**, Sorption of Trace Metals on Fish Scales and Application for Lead and Cadmium Pre-concentration with Flame Atomic Absorption Determination, *Jordan J. Chem.* 3(1) 87 -97, 2008.
11. A. H. El-Sheikh, **J. A. Sweileh**, Y. S. Al-Degs, A. A. Insisi, N. Al-Rabady, Critical evaluation and comparison of enrichment efficiency of multi-walled carbon nanotubes, C18 silica and activated carbon towards some pesticides from environmental waters, *Talanta*, **74**, 1675 – 1680 (2008)
12. **J.A. Sweileh**, On-line flow injection solid sample introduction, leaching and potentiometric determination of fluoride in phosphate rock, *Anal Chim. Acta*, **581**, 168 – 173 (2007)
13. A. H. El-Sheikh, **J. A. Sweileh**, Yahya S. Al-Degs, Effect of dimensions of multi-walled carbon nanotubes on its enrichment efficiency of metal ions from environmental waters, *Anal. Chim. Acta*, **604**, 119 – 126 (2007)
14. A H. El-Sheikh, A A. Insisi and **J. A. Sweileh**, Effect of oxidation and dimensions of multi-walled carbon nanotubes on solid phase extraction and enrichment of some pesticides from environmental waters prior to their simultaneous determination by high performance liquid chromatography, *J. Chromatogr. A*, **1164**, 25 – 32 (2007)
15. A.H. El-Sheikh and **J.A. Sweileh**, A Rapid and Simple Microwave-Assisted Digestion Procedure for Spectrophotometric Determination of Titanium Oxide Photocatalyst on Activated Charcoal, *Talanta*, **71**, 1867 - 1872 (2007).

16. **J.A. Sweileh** and E. M. Elnemma, On-line Elimination of Spectral Interference of Iron Matrix in the Flame Atomic Absorption Determination of Zinc by Anion-Exchange Separation, *Anal. Chim. Acta*, **523**, 287 – 292 (2004).
17. **J.A. Sweileh**, Sorption of trace metals on human hair and application for cadmium and lead pre-concentration with flame atomic absorption determination, *Anal. Bioanal. Chem.*, **375**, 450 - 455(2003).
18. **J.A. Sweileh**, I. S. Al-Naimi, H.A. Abulfatih, R.F. Al-thani, M.M. Kardousha, E.A. Elhaj, Trace metals in wastewater ponds in Qatar. *Qatar Univ. Sci. J.*, **22**, 97 - 106 (2002).
19. M.M. Kardousha, H.N. Abulfatih, R.F. Al-Thani, I.S Al-Naimi, **J.A. Sweileh**, E.A. Elhaj "Wastewater ponds as an attractive Habitat for Different Vertebrate Animals in Qatar (Preliminary study)" *Egypt J. Biol. & Fish.* **6**, 1 – 12 (2002).
20. E.A. Elhag, H.A. Abulfatih, R.F. Al-thani, M.M. Kardousha, **J.A. Sweileh**, I.S. Al-Naimi, Meiofaunal life of man-made wastewater ponds in Qatar. *Qatar Univ. Sci. J.*, **22**, 153 – 169 (2002).
21. **J.A. Sweileh**, On-line Dissolution of Borate Melt for Simultaneous Matrix Isolation, Concentration and Flame Atomic Absorption Determination of Lead in Phosphate Rock. *Anal. Chim. Acta*, **448**, 151 - 156 (2001).
22. **J.A. Sweileh**, On-line Flow Injection Solid Sample Introduction Digestion and Analysis: Spectrophotometric and Atomic Absorption Determination of Iron, Copper, Zinc in Multi-vitamin Tablets. *Microchemical J.*, **65**, 87 (2000).
23. A.O. Al-Othman, **J.A. Sweileh**, Phosphate Rock Treatment with Citric Acid for the Rapid Potentiometric Determination of Fluoride with Ion-selective Electrodes, *Talanta*, **51**, 993 (2000).
24. **J.A. Sweileh**, Flow Injection Atomic Absorption Determination of Metals in Phosphate Rock After a Fusion Preparation, *Al-Manarah* **4**(2), 173 (1999).
25. **J.A. Sweileh**, Determination of Total Cyanide in Gold-Mill Effluents by an Automated Flow Injection Spectrophotometric Method, *Al-Manarah* **2** (1), 31 (1997).

26. **J.A. Sweileh**, Study of Equilibria in Cyanide Systems by Gas-Diffusion Measurement of Hydrogen Cyanide, *Anal. Chim. Acta* **336**, 131 (1996).
27. **J.A. Sweileh** and J.K. Van Peteghem, The Analysis of Furnace Slag and Roaster Feed by X-Ray Fluorescence Spectroscopy Using a fusion Preparation *Can. J. Appl. Spectr.* **40**, 8 (1995).
28. **J.A. Sweileh**, Determination of Cyanide and Thiocyanate by a Flow Injection Spectrophotometric Method, *Anal. Chim. Acta*, **220**, 65 (1989)
29. **J.A. Sweileh** and P.K. Dasgupta Applications of In Situ Detection with an Automated Micro Batch Analyzer, *Anal. Chim. Acta*, **214**, 107 (1988)
30. **J.A. Sweileh**, J.L. Lopez and P.K. Dasgupta A Novel Automated Micro Batch Analyzer, *Rev. Sci. Instrum.* **59**, 2609 (1988)
31. **J.A. Sweileh**, P.K. Dasgupta and J.L. Lopez, Determination of Total Alkali and Total Phenol in Industrial Process Liquor by Flow Injection Analysis, *Mikrochim. Acta [Wien]* (1987) **III**, 175.
32. **J.A. Sweileh**, D. Lucyk, B. Kratochvil and F.F. Cantwell, Specificity of the Ion Exchange/Atomic Absorption Method for Copper (II) Species Determination in Natural Waters, *Anal. Chem.* **59**, 856 (1987)
33. **J.A. Sweileh**, and F.F. Cantwell, Use of Peak Height in Quantification in Solvent Extraction/Flow Injection Analysis, *Can. J. Chem.* **63**, 2559 (1985).
34. **J.A. Sweileh** and F.F. Cantwell Sample Introduction by Solvent Extraction Flow Injection Analysis to Eliminate Interferences in Atomic Absorption Spectroscopy, *Anal. Chem.*, **57**, 420 (1985).

35. F.F. Cantwell and **J.A. Sweileh**, Hydrodynamic and Interfacial Origin of Phase Segmentation in Solvent Extraction/Flow Injection Analysis , *Anal. Chem.* **57**, 329 (1985)

CONFERENCES:

J.A. Sweileh and Eman M. Elnemma, "On-line Elimination of Spectral Interference of Iron Matrix in the Flame Atomic Absorption Determination of Zinc by Anion-Exchange Separation". *Proceedings 2nd International Conference on Chemistry and its Applications*", Doha, Qatar, December, 2003.

H.A. Abulfatih, R.F. Al-thani, M.M. Kardousha, **J.A. Sweileh**, I. S. Al-Naimi, E.A. Elhaj, "Plant Ecology of Wastewater Ponds in Qatar *Quest 2002 Middle East*, Jan 27, 2002.

J.A. Sweileh and Robert Muraska, Application of Ion Chromatography in the determination of different parameters in the MISA program, *9th Canadian Association of Environmental Analytical Chemists Conference*, Timmins, Ontario, Canada, May, 1992

J.A. Sweileh, Speciation of Cyanide in Gold Mill Effluent Samples, *71st Canadian Society for Chemistry Conference and Exhibition*, Halifax, Nova Scotia, Canada, August, 1988

F.F. Cantwell, B. Kratochvil, **J.A. Sweileh**, J. Treit, J.S. Nielsen and S. Hrudy, Measurement of Free Metal Ion Concentration in Aquatic Systems by an Ion Exchange Column-Equilibration Technique. Invited paper presented at a symposium on Chemical Speciation Pertaining to Environmental and Biological Systems, *31st Canadian Spectroscopy Conference*, St. Jovite, Quebec, Canada, October 1984.

J.A. Sweileh and G. Nickless, Determination of Trace Elements in Phosphate Rock by Graphite Furnace Atomic Absorption Spectroscopy and X-Ray Fluorescence", *Proceedings, 10th Iraqi Chemical Society Conference*, Baghdad, June 1980.