

Dr. Diab Ghassab Faza EL-Shrafat



EXPERIENCE

- Teacher • Chemistry Teacher • The Jordanian Ministry of Education
- An Assistant School Principal • Chemistry Teacher • The Jordanian Ministry of Education
- A School Principal • an educational leader • The Jordanian Ministry of Education
- A Research Assistant - Department of Chemistry - Jordan University of Science and Technology.
- A Researcher - Department of Chemistry-The University of Jordan.

KEY RESPONSIBILITIES

- Staff and Curriculum: Managing teachers and support staff, evaluating performance, and organizing professional development.
- Student Success: Implementing curriculum standards, disciplining students, and assessing student achievement.
- Operations: Overseeing the school budget, managing supplies, scheduling maintenance, and coordinating security procedures.
- Community Engagement: Meeting with parents, teachers, and community members to discuss student progress and school issues.
- Literature Review (reading, Understanding, ...
- Planning Experiments
- Conducting Laboratory Experiments
- Data Collection and Analysis

PERSONAL DATA:

Date of Birth: April. 01, 1972

Place of Birth: Al-Mafraq-Jordan

Nationality: Jordanian=

Marital Status: Married

Family: 2 sons and 4 daughters



00962772468074



Diab72diab@gmail.com



[موقعك على الويب]



- Writing Research Papers & Reports
- Synthesizing new compounds.

EDUCATION

- **PhD** in Chemistry, University of JORDAN, (2024), very good.
- **MSc.** in Applied Chemistry, Jordan University of Science and Technology, (2017), very good.
- **BSc.** in Chemistry, Al Albayt University, (2013). Excellent (86.02).
- **A Higher diploma**, Yarmouk University, Jordan very good.(83.7)

AREA OF RESEARCH:

My Research Focuses on:

- Preparation Of Nanocomposites, and Characterization Techniques: FTIR, TGA, SEM, TEM, XRD, and Thermal, Mechanical Properties.
- The Adsorption Of Toxic Metals Such As TH(IV) AND U(VI), Pb(II), Cu(II), and Cd(II) Ions from aqueous solutions.
- The Study of Trace and Minor Elements in Different Areas.

TRAINING SESSION:

- Workshop On Chemical Safety and Security, and On Scientific Writing and Publishing. **AMERICAN CHEMICAL SOCIETY (ACS)** AND CHEMISTRY DEPARTMENT AT THE UNIVERSITY OF JORDAN)
- International Computer Driving License (ICDL) Issued by **CAIRO OFFICE**, Designated Licensee for The International Computer Driving License
- Intel Teach Program (Intel). The JORDANIAN MINISTRY OF EDUCATION.
- School Leadership Program. The JORDANIAN MINISTRY OF EDUCATION.

Publications

- Levels of Trace Elements in Human Breast Milk in Jordan: a Comparison with Infant Formula Milk Powder. Yahya R Tahboub 1, Adnan M Massadeh 2, Nihaya A Al-Sheyab 3, **Diab El Shrafat** 4, Israa A Nsserat. Received: 2 October 2020 /Accepted: 15 December 2020. **Biological Trace Element Research**. PMID: 33409922 DOI: [10.1007/s12011-020-02547-4](https://doi.org/10.1007/s12011-020-02547-4)
- The Role Of Self-Management For Government School Leaders With The Participation Of Teachers In Decision-Making In Light Of The Corona Pandemic Form Their Viewpoint In Mafrq Governorate. **Diab Ghassab Elshrafat**. Ministry of Education || Jordan. Journal of Educational and Psychological Sciences Volume (6), Issue (34): 30 Jul 2022 P: 1 – 17
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- Preparation and characterization of Poly(BPA-PHTH) and its Metal Removal Behavior toward Pb(II), Cu(II), and Cd(II) Ions. Mohammad noralden O. Al-Dweri, Fawwaz I. Khalili, **Diab El shrafat's** and Bassam A. Sweileh. Received 03 Aug 2023, Accepted 04 Dec 2023, Published online: 30 Dec 2023 **Sustainable Environment**, 2024, 10 (1), 2292309. <https://doi.org/10.1080/27658511.2023.2292309>

Title of PhD Dissertation and Abstract

REMOVAL OF HUMIC ACID BY NANO KAOLINITE AND NANO MANGANESE FERRITE AND THEN THE ADSORPTION OF TH(IV) AND U(VI) BY THE MODIFIED COMPOSITE.

ABSTRACT

The removal of Uranium(VI) and Thorium (IV) from their aqueous solutions using nanokaolinite extracted from Azraq and deposits and manganese ferrite (MnFe_2O_4) nanoparticles modified by Humic Acid (HA) was studied separately by batch technique as a function of pH, adsorbent mass, time of shaking, initial concentration of metal ion, and temperature. Nanokaolinite and manganese ferrite nanoparticles, modified and non-modified, were characterized by Fourier Transform Infrared Spectroscopy (FTIR), X-ray Powder Diffraction (XRD), and Scanning Electron Microscopy (SEM). Kinetic models (a pseudo-first-order and a pseudo-second-order) and equilibrium isotherms (Langmuir, Freundlich, Temkin, and Dubinin–Radushkevich (D-R)) were applied to analyze the data. The thermodynamic parameters (ΔG° , ΔH° , and ΔS°) were determined, and desorption studies were performed.

The maximum adsorption capacity (Langmuir model) of HA onto MnFe_2O_4 interaction at 25.0°C and pH 4.0 was 104.2 mg/g, and onto nanokaolinite was 58.8 mg/g at 45.0°C and pH 4.0. The calculated kinetic parameters show that the adsorption of U(VI) and Th(IV) by nanokaolinite-HA and MnFe_2O_4 -HA follows a pseudo-second-order kinetic model. The adsorption isotherm of U(VI) and Th(IV) onto both adsorbents correlated better with the Langmuir model, and adsorption capacities at 45.0°C were 6.38 and 11.50 mg/g for U(VI) and Th(IV) onto nanokaolinite-HA, respectively, and 97.0 mg/g for U(VI) onto MnFe_2O_4 -HA. The adsorption capacities of Th(IV) was 163.93 at 25.0°C onto MnFe_2O_4 -HA.

Thermodynamic parameters showed that the adsorption of uranium U(VI) and thorium Th(IV) onto MnFe_2O_4 -HA or nanokaolinite-HA is endothermic, random, and spontaneous. The efficient recovery of the metal ions after adsorption can be carried out by treatment of the loaded nanokaolinite-HA and MnFe_2O_4 -HA composite with 0.1 M HNO_3 , 1.0 M HNO_3 , and 0.1 M EDTA, with the best percent recovery achieved by using 0.1 M HNO_3 .

Title of MA(SC) Thesis and Abstract

TRACE AND MINOR ELEMENTS IN HUMAN MILK FROM JORDAN BY INDUCTIVELY COUPLED PLASMA-MASS SPECTROMETRY.

ABSTRACT

A reliable analytical method was developed and validated for monitoring of 27 elements (Al, Ba, Cr, Fe, Mn, Mg, Ni, Rb, Se, Sr, Zn, Cu, Li, Be, V, Co, Ga, Bi, Cs, U, Ag, Mo, As, Cd, Pb, In, Tl) in human milk. The method was applied for monitoring these elements in 76 human milk samples collected from healthy women in northern Jordan. The method was based on microwave digestion of followed by measurement of elements by inductively coupled plasma mass spectrometry (ICP-MS). Validation parameters including sensitivity, selectivity, linearity, and recovery and matrix effect for each element were within the accepted values in standard methods.

This study has the merits of being the first of its kind in monitoring elemental levels in human milk in Jordan. Additionally, it covered large number of elements (27 element) including minor and trace elements. Some of them are related to nutrition and others are considered toxic if exceeded certain levels.

The mean ($\pm$ S.D) values for elements in human milk samples were: Al (3.24 ± 1.43) mg/L, Ba (145 ± 97) μ g/L, Cr (131 ± 92) μ g/L, Fe (3.24 ± 2.49) mg/L, Mn (81 ± 104) μ g/L, Mg (28.1 ± 8.0) mg/L, Ni (302 ± 153) μ g/L, Rb (312 ± 97) μ g/L, Se (23.3 ± 35.7) μ g/L, Sr (119 ± 103) μ g/L, Zn (3.73 ± 3.69) mg/L, Cu (0.94 ± 1.19) mg/L, Li (3.3 ± 1.6) μ g/L, Be (0.19 ± 0.23) μ g/L, V (8.3 ± 5.5) μ g/L, Co (14.3 ± 17.8) μ g/L, Ga (2.23 ± 1.19) μ g/L, Bi (1.61 ± 1.23) μ g/L, Cs (1.01 ± 0.55) μ g/L, Mo (32.6 ± 28.8) μ g/L, Ag (35.9 ± 22.8) μ g/L, U (1.77 ± 1.07) μ g/L, As (31.4 ± 24.0) μ g/L, Cd (63.1 ± 70.0) μ g/L, Pb (96 ± 88) μ g/L, In (15.3 ± 5.4) μ g/L and Tl (0.24 ± 0.27) μ g/L.

Inter elemental correlations were observed between total toxic/Cu, total toxic/Al and Fe/Al. Minor elements are usually related to nutritional value and their levels vary from few mg/L (Al, Fe, Zn and Cu) to tenth of μ g/L. For trace elements, seven out of the ten elements (Li, Be, V, Ga, Bi, Cs and U) have means less than 10 μ g/L indicating lack of

nutritional values of these elements. Additionally, these elements are not toxic at these levels. For potentially toxic trace elements (As, Cd, Pb, In, Tl), Tl and In were detected at 0.24 and 15 μ g/L respectively in Jordanian human samples. As has a confidence interval (CI) 29-39 μ g/L. About 20 % of the samples had values lower than 10 μ g/L (recommended by WHO in drinking water) and same percent exceeded the higher value of CI. For Pb the mean was 96 μ g/L and a CI 79-113 μ g/L. About 10 % of the samples had values lower than 10 μ g/L and 25 % larger than the upper CI. For Cd mean was 47 μ g/L, a median of 38 μ g/L and a CI 40-56 μ g/L. These values are much larger than the recommended value for Cd in drinking water (3 μ g/L), however, 25 % of the sample's present values lower than the MLOQ and 30 % larger than the upper the higher value of CI.

Additionally, large variations of the same element between samples were observed ($CV > 0.5$). Distribution of elements in single sample also varies. Comparisons with similar studies in other countries, indicated larger levels of most elements.

PERSONAL SKILLS

- Bilingual, intelligent and dynamic person.
- Excellent communication skills at all levels and ability to communicate well with others.
- Self-motivated hard working, team worker and open minded.
- Expert knowledge in the use of modern analytical instruments and techniques.
- Experience in ability to work with guidance from supervisors and collaborators.
- Good computer skills.
- Exemplary ethical conduct of integrity, honesty, and mutual respect, both intellectually and in interpersonal workplace interactions.
- Work cross-functionally and collaboratively, and exhibit willingness to learn new techniques associated with other functions.
- Analyze data and report findings in written and oral presentations for staff and facility collaborators.

LANGAUGES:

- Arabic: Excellent in reading, spoken and writing.
- English: Very good in reading, spoken and writing

INTEREST:

Scientific Research, Reading, Writing, Travelling, and sports.

References

Prof. Dr. Fawwaz.I. Khalili

E-aíl : fkhalili@ju.edu.jo

Professor of Inorganic and Nuclear Chemistry, Department of Chemistry,
The University of Jordan. Phone: +962-6-5355000----Ext.22142
Fax Number: +962 6 5348932

Prof. Dr: Imad Hamadneh

E-Mail: i.hamadneh@ju.edu.jo

Phone: +962-6-5355000----Ext.22164
Fax Number: +962 6 5348932

Prof. Dr. Yahya R. Tahboub.

[Jordan University Of Science And Technology](#)

E-Mail: tahboub@just.edu.jo

Tel. +962-2-7201000 Ext. 23588 Home +962-2-7104862 Cellular: +962-79-5561392.

Prof. Dr. Adnan Mohammed Massadeh

Department of Medicinal Chemistry and Pharmacognosy.

E-mail: massadeh@just.edu.jo

Faculty of Pharmacy. [Jordan University of Science and Technology](#)
Irbid 22110-Jordan. Phone: 00962-2-7201000 (ext. 23545)