

ZAINAB HAIDER MUSSA

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College of Biotechnology,
Al-Qasim Green University, Iraq

FULL NAME

ZAINAB HAIDER MUSSA

ACADEMIC POSITION

LECTURER AT COLLEGE OF BIOTECHNOLOGY, AL-QASIM
GREEN UNIVERSITY, IRAQ

MARITAL STATUS

Married to Fouad Fadhil Al-Qaim (Associate professor/PhD/ analytical chemistry from Universiti Kebangsaan Malaysia). I have 2 children, Hussain and Fatima.

EDUCATION

February 2018-November 2020 Doctor of Philosophy/Analytical Chemistry
Malaysia-Japan International Institute of Technology,
Universiti
Teknologi Malaysia, Malaysia
2013-2015 MSc. (Analytical Chemistry)
Universiti Kebangsaan Malaysia (UKM), Selangor, Malaysia
Malaysia
1996-2001 BSc (Chemistry)
University of Babylon, Hilla, Iraq

WORKING EXPERIENCE

2023-currently Lecturer at College of Biotechnology, Al-Qasim Green University, Iraq
2020-2023 Lecturer at Faculty of Pharmacy, University of Al-Ameed,
Kerbala, Iraq
2015-2017 Lecturer, Faculty of Pharmacy, University of Babylon, Hilla,
Iraq

RESEARCH FIELD

Analytical and Environmental Chemistry dealing with analysis of pharmaceuticals in surface water and wastewater using liquid chromatography-time of flight/ mass spectrometry (LC-TOF/MS). As a result of detection of these pharmaceutical compounds in water samples, treatment of these pollutants is necessary. However, electrochemical treatment process as clean technology was applied for this purpose.

No. Publications: 37 papers, h-Index (Scopus) 11.

PUBLICATIONS

Application of the response surface approach to the adsorption of methylene blue from water using acid-modified grape leaves

FF Al-Qaim, HFS Al-Saedi, ZH Mussa, NJ Kadhim, ZH Al-Qaim

Reaction Kinetics, Mechanisms and Catalysis, 2024•Springer

Halder, B., Ahmadianfar, I., Heddami, S., Mussa Z.H., Jawad, A.H., Yaseen, Z.M. 2023.

Machine learning-based country-level annual air pollutants exploration using Sentinel-5P and Google Earth Engine. *Scientific Reports*, 2023, 13(1), 7968. (ISI, Q1).

Manojkumar, U., Kaliannan, D., Srinivasan, V., Mussa Z.H., Chelliapan, S., Palaninaicker, S. 2023.

Green synthesis of zinc oxide nanoparticles using *Brassica oleracea* var. botrytis leaf extract: Photocatalytic, antimicrobial and larvicidal activity. *Chemosphere*, 323, 138263. (ISI, Q1).

Mussa Z.H., Al-Ameer, L.R., Al-Qaim, F.F., Kamyab, H., Chelliapan, S. 2023.

A comprehensive review on adsorption of methylene blue dye using leaf waste as a bio-sorbent: isotherm adsorption, kinetics, and thermodynamics studies. *Environmental Monitoring and Assessment*, 195(8), 940. (ISI, Q2).

- Mussa Z.H., Al-Qaim F.F., 2023.**
A non-steroidal drug “diclofenac” is a substrate for electrochemical degradation process using graphite anode. *Environmental Monitoring and Assessment*, 195(4), 461. (ISI, Q2).
- Mussa Z.H., Al-Qaim F.F., 2023.**
Electrochemical degradation of 10,11-dihydro-10-hydroxy carbamazepine as the main metabolite of carbamazepine. *Environmental Science and Pollution Research*, 30(17) 50457-50470. (ISI, Q2).
- Tao, H., Al-Hilali, A.A., Ahmed, A.M., Mussa, Z.H. Latif, M.T., Yaseen, Z.M. 2023.**
Statistical and spatial analysis for soil heavy metals over the Murray-Darling river basin in Australia. *Chemosphere*, 317, 137914. (ISI, Q1).
- Al-Seade, I.A., Al-Qaim, F.F., Mussa, Z.H., Al-Ameer, L.R., Tahrim, N.A., 2023.**
APPLICATION OF RESPONSE SURFACE METHODOLOGY ON THE EXTRACTION OF CAFFEINE IN TEA AND COFFEE USING HIGH PERFORMANCE LIQUID CHROMATOGRAPHY TECHNIQUE .
Malaysian Journal of Analytical Sciences, 27(2) 329-341. (scopus, Q3).
- Soni, A., Das, P.K., Yusuf, M., ...Kirpichnikova, I., Mussa, Z.H., 2023.**
Valorization of Post-Consumers Plastics and Agro-Waste in Sustainable Polymeric Composites for Tribological Applications. *Waste and Biomass Valorization*, 29(4) 62447-62457. (ISI, Q2).
- Mussa Z.H., , Al-Qaim, F.F., Jawad, A.H., Scholz, M., Yaseen, Z.M. 2022.**
A Comprehensive Review for Removal of Non-Steroidal Anti-Inflammatory Drugs Attained from Wastewater Observations Using Carbon-Based Anodic Oxidation Process. *Toxics*, 29(4) 62447-62457. (ISI, Q2).
- Mussa Z.H., Al-Qaim F.F., 2022.**
Quantification of 10,11-dihydro-10-hydroxy carbamazepine and 10,11-epoxycarbamazepine as the main by-products in the electrochemical degradation of carbamazepine. *Environmental Science and Pollution Research*, 29(4) 62447-62457. (ISI, Q2).
- Afan, H.A., Aldlemy, M.S., Ahmed, A.M., Mussa Z.H., Scholz, M., Yaseen, Z.M. , 2022.**
Fate and emission of methyl mercaptan in a full-scale MBBR process by TOXCHEM simulation. *Journal of Water and Climate Change*, 13(6), 2386-2398. (ISI, Q3).

- Mussa Z.H., Al-Qaim F.F., 2022.**
Impact of Anode Materials on Electrochemical Degradation of Carbamazepine: A Case Study of Producing the Main By-Product 10,11-Epoxycarbamazepine after Electrochemical Degradation of Carbamazepine. *Indonesian Journal of Chemistry*, 22(4) 929-943. (ISI, Q3).
- Mussa Z.H., Al-Qaim F.F., Yuzir A. Shameli K.. 2021.**
Photocatalytic removal of malachite green and brilliant blue dyes from its aqueous solution: A case study of factorial experimental design. *Journal of the Mexican Chemical Society* 65(2) 247-255. (ISI, Q3).
- Mussa, Z.H., Al-Qaim, F.F., Alqaim, Z.H., Latip, J. 2021.**
Electrochemical Oxidation of Different Therapeutic Classes of Pharmaceuticals Using Graphite-PVC Composite Electrode, *Acta Chimica Slovenica*, 68(4), 811-820. (ISI, Q3).
- Mussa Z.H., Al-Qaim F.F., Yuzir A. Shameli K.. 2020.**
Electrochemical degradation of metoprolol using graphite-PVC composite as anode: Elucidation and characterization of new by-products using LC-TOF/MS. *Journal of the Mexican Chemical Society* 64(3) 1-16. (ISI, Q3).
- Mussa Z.H., Al-Qaim F.F., Yuzir A. Shameli K.. 2020.**
Electrochemical removal of metoprolol using graphite-PVC composite as anode. *IOP conference Series: Earth and Environmental Science* (conference paper, scopus).
- Mussa Z.H., Al-Qaim F.F., Yuzir A. Jalifah L. 2019.**
Electro-transformation of mefenamic acid drug: A case study of kinetics, transformation products and toxicity. *Environmental Science and Pollution Research*. 26(10) 10044-10056. (ISI, Q1).
- Al-Qaim F.F., Mussa Z.H., Yuzir A., Abu Tahrir N., Hashim N.Azman S. 2018.**
Transformation of different therapeutic classes of pharmaceuticals to the surface water, sewage treatment plant and hospital samples, Malaysia. *Water*, 10, 916-932. (ISI, Q2).
- Mussa Z.H., Al-Qaim F.F., Yuzir A., Hara H., Azman S., Chelliapan S. 2018.**
Transformation of different therapeutic classes of pharmaceuticals to the surface water, sewage treatment plant and hospital samples, Malaysia. *Catalysts*, 8, 540-553. (ISI, Q2).
- Al-Qaim F.F., Mussa Z.H., Yuzir A. 2018.**
The fate of prazosin and levonorgestrel after electrochemical degradation process: Monitoring by-products using LC-TOF/MS. *Journal of Environmental Sciences*, 74, 134-146. (ISI, Q1).

- Al-Qaim F.F., Mussa Z.H., Yuzir A., Latip J., Othman M.R. 2018.**
Development and validation of a comprehensive solid phase extraction method followed by LC-TOF/MS for analysis of eighteen pharmaceuticals in influent and effluent of sewage treatment plants. *Analytical and Bioanalytical Chemistry*, 410(20), 4829-4846. (ISI, Q1)
- Al-Qaim F.F., Mussa Z.H., Yuzir A., Abdullah Md.P., Othman M.R. 2018.**
Full factorial experimental design for carbamazepine removal using electrochemical process: A case study of scheming the pathway degradation. *Journal of the Brazilian Chemical Society*, 29(8), 1721-1731. (ISI, Q3).
- Al-Qaim F.F., Yuzir A., Mussa Z.H. 2018.**
Determination of theobromine and caffeine in some Malaysian beverages by liquid chromatography-time-of-flight mass spectrometry. *Tropical Journal of Pharmaceutical Research* 17 (3), 529-535. (ISI, Q4).
- Al-Qaim F.F., Jusof S.H., Abdullah Md.P., Othman M.R. Mussa Z.H. 2017.**
Solid phase extraction method for analysis of caffeine residue in surface waters using HPLC. *Malaysian Journal of Analytical Sciences* 21 (1). (Scopus).
- Mussa Z.H., Al-Qaim F.F., Othman M.R., Abdullah Md.P., Latip J., Zakaria Z. 2017.**
Pseudo first order kinetics and proposed transformation products pathway for the degradation of diclofenac using graphite-PVC composite as anode. *Journal of the Taiwan Institute of chemical engineers*. 72, 37-44. (ISI, Q1).
- Mussa Z.H., Al-Qaim F.F., Abdullah Md.P., Othman M.R. 2016.**
Determination of prazosin and simvastatin in landfill leachate using liquid chromatography-time of flight –mass spectrometry. *Malaysian Journal of Analytical Sciences* 20 (4). (Scopus).
- Mussa Z.H., Al-Qaim F.F., Abdullah Md.P., Othman M.R. 2016.**
Removal of simvastatin from aqueous solution by electrochemical process using graphite-PVC as anode: A case study of evaluation the toxicity, kinetics and chlorinated by-products. *Journal of Environmental Chemical Engineering* (4)3338-3347. (Scopus).
- Al-Qaim F.F., Abdullah Md.P., Othman M.R. Mussa Z.H., Zakeria Z., Latip J. & Afiq W.M. 2015.**
Investigation the environmental transport of human pharmaceuticals to surface water: A case study of persistence of pharmaceuticals in effluent of sewage treatment plants and hospitals, Malaysia. *Journal of the Brazilian Chemical Society* 26: 1124-1135. (ISI, Q3).
- Al-Qaim F.F., Mussa Z.H. Othman M.R. & Abdullah Md.P. 2015.**
Removal of caffeine from aqueous solution by electrochemical oxidation using a

graphite-PVC composite electrode. *Journal of Hazardous Materials* 300: 387-397. (ISI, Q1).

. Mussa Z.H., Othman M.R. Abdullah Md. 2013. Electrocoagulation and decolorization of landfill leachate. AIP conference 1571: 829-834. (scopus).

Mussa Z.H., Othman M.R. Abdullah Md. Nordin N. 2013. Decolorization of landfill leachate using electrochemical technique. *International Journal of Chemical Sciences* 11: 1636-1646 (scopus).

THESES

Zainab Haider Mussa. 2020. Electrochemical Treatment of Hydrochlorothiazide, Mefenamic Acid, and Metoprolol Using Graphite-PVC as Anode. Doctor of Philosophy Thesis. Universiti Teknologi Malaysia.

Zainab Haider Mussa. 2015. Electrochemical treatment of leachate using graphite-polyvinyl chloride composite electrode. Master Thesis. Universiti Kebangsaan Malaysia.

ORAL PRESENTATIONS

Mussa Z.H. Electrochemical removal of metoprolol using graphite-PVC as anode. Regional Conference on Natural Disaster-MJIIT(RCND2019) Zenith Hotel, Putra Jaya, Malaysia 2019.

Mussa Z.H. Electrochemical remediation of prazosin using graphite-PVC composite as anode. International Congress on pure and applied chemistry (ICPAC. 7-10th March 2018, Sokhalay Angkor Resort and Spa, Siem Reap, Cambodia.

Mussa Z.H. Electrocoagulation and decolorization of landfill leachate, 13th postgraduate colloquium, FST, Universiti kebangsaan Malaysia, Malaysia 2013.

POSTER PRESENTATION

Mussa Z.H. Physico-Chemical Characterization of landfill leachate, Jeram, Malaysia. International Conference on water and wastewater management (ICWWM), Kuala Lumpur, Malaysia 2013.

Mussa Z.H. Optimisation of several carbon electrodes to remove the color of landfill leachate. The 26th regional symposium of Malaysia Analytical Science (SKAM 26), Kuching, Sarawak, Malaysia 2013.

