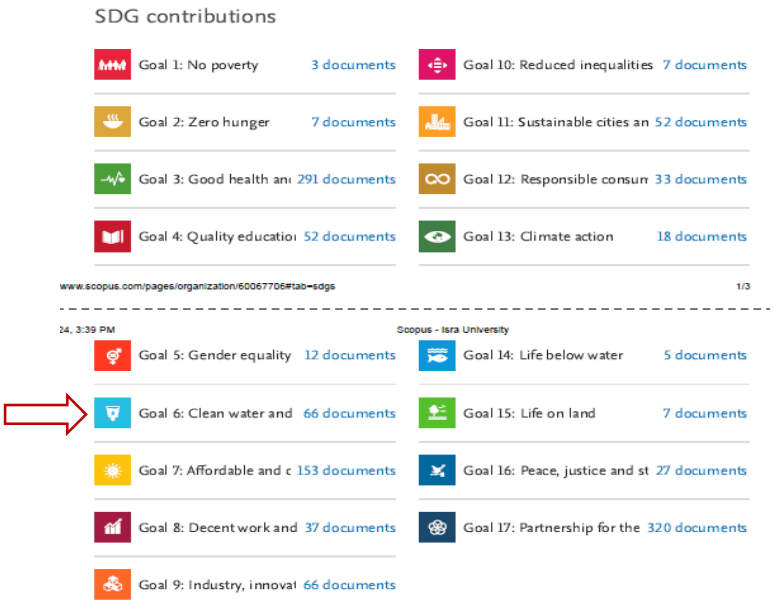
## 6.1.2 Clean Water and Sanitation: FWCI

Considering the importance of clean water and sanitation for human life, research on water and sustainability at Isra University is growing significantly. According to a Scopus report, the total number of published research papers has reached 66.

The total number of citations received is 1,415, as shown in the attached table. For papers published between 2022 and 2023, there have been 190 citations. The table below lists the




publications along with their respective citation counts. Publications from 2022 to 2023 are highlighted for clarity.

List of publications with citation counts.

| No. | Article | Number of citations |
|---|---|---|
| 1 | An Integrated Goal Programming Model Applied for Planning a National Policy of Sustainable Development: A Case of Jordan<br>Alnsour, M.A.<br>***Process Integration and Optimisation for Sustainability,*** 2024<br>Review •*Open access* | 1 |
| 2 | Carbon as a multifunctional material in supporting adsorption performance for water treatment: Science mapping and review<br>Heryanto, H., Tahir, D., Abdullah, B., ...Prasad, V.S.R., Sayyed, M.I.<br>***Desalination and Water Treatment,*** 2024 | 0 |
| 3 | Techno-Economic and Environmental Sustainability Assessment of a Sewage Sludge Composting Plant: A Case Study | 3 |

| No. | Article | Number of citations |
|---|---|---|
| | Albtoosh, A.F., Alnsour, M.A., Hajar, H.A., Adam Lagum, A.A.<br>***Waste and Biomass Valorisation,*** 2024<br>Article | |
| **4** | Effects of current density on fouling-related properties of sludge in an electro-bioreactor at low-temperature conditions<br>Adam Lagum, A.A.<br>***Biomass Conversion and Biorefinery,*** 2024<br>Article | 0 |
| **5** | Low-temperature treatment of domestic sewage by electrokinetic-based reactor<br>Adam Lagum, A.A.<br>***Biomass Conversion and Biorefinery,*** 2024<br>Article • *Open access* | 2 |
| **6** | Adsorption of Pb, Cu, and Ni Ions on Activated Carbon Prepared from Oak Cupules: Kinetics and Thermodynamics Studies<br>Khater, D.F., Alkhabbas, M., Al-Ma'Abreh, A.M.<br>***Molecules,*** 2024<br>Book Chapter | 3 |
| **7** | Rainfall prediction using machine learning<br>Kumar, A.V., Roshan, S.A., Dutta, A., ...Musirin, I.B., Kaur, G.<br>***Advancements in Climate and Smart Environment Technology,*** 2024<br>Article | 1 |
| **8** | Prediction and modeling of water quality using deep neural networks<br>El-Shebli, M., Sharrab, Y.O., Al-Fraihat, D.G.<br>***Environment, Development and Sustainability,*** 2024<br>Article | 10 |
| **9** | Effective and sustainable removal of Pb2+ ions from wastewater by a new synthetic bis-thiosemicarbazone derivative immobilized in amberlite XAD-2: Kinetic, isotherm and thermodynamic aspects<br>Alghamdi, A.A., Hanfi, M.Y., Sakr, A.K., Sayyed, M.I., Almuqrin, A.H.<br>***Separation Science and Technology (Philadelphia),*** 2024<br>Article | 0 |
| **10** | Conceptualising nature-based solutions: addressing environmental challenges in the city of Amman, Jordan<br>Lemes de Oliveira, F.L., Mare'e, S., Khattab, R., ...Kaddour, I.Z., Sharmin, T.<br>***Urban Research and Practice,*** 2024<br>Article | 0 |
| **11** | Integrated electro-anammox process for nitrogen removal from wastewater<br>Adam Lagum, A.A.<br>***International Journal of Environmental Science and Technology,*** 2023<br>Article | 10 |

| No. | Article | Number of citations |
|---|---|---|
| 12 | Physicochemical investigation of mercury sorption on mesoporous thioacetamide/chitosan from wastewater<br>Eissa, M.E., Sakr, A.K., Hanfi, M.Y., ...Cheira, M.F., Abdelmonem, H.A.<br>***Chemosphere,*** 2023<br>Article • *Open access* | 18 |
| 13 | Coupling membrane electro-bioreactor with anammox process to treat wastewater at low temperatures<br>Adam Lagum, A.A., Al-Ghriybah, M., Al-Ma'Abreh, A.M.<br>***Arabian Journal of Chemistry,*** 2023<br>Article | 4 |
| 14 | UV and solar-based photocatalytic degradation of organic pollutants from ceramics industral wastewater by Fe-doped ZnS nanoparticles<br>Li, B., Amin, A.H., Ali, A.M., ...Salman, H.M., Nassar, M.F.<br>***Chemosphere,*** 2023<br>Article | 17 |
| 15 | Solar light driven enhanced photocatalytic treatment of azo dye contaminated water based on Co-doped ZnO/ g-C3N4 nanocomposite<br>Alawamleh, H.S.K., Amin, A.H., Ali, A.M., ...Salman, H.M., Nassar, M.F.<br>***Chemosphere,*** 2023<br>Article • *Open access* | 23 |
| 16 | Assessing of drinking water quality in Al-karak province in central Jordan; based on water saturation indices<br>Al-Harahsheh, A.M., Al-Tarawneh, A.A., Al-Ma'Abreh, A.M., ...El-Hasan, T.M., Al-Alawi, M.M.<br>***Heliyon,*** 2023<br>Article • *Open access* | 3 |
| 17 | Adsorption of Anionic and Cationic Dyes on Activated Carbon Prepared from Oak Cupules: Kinetics and Thermodynamics Studies<br>Alkhabbas, M., Al-Ma'Abreh, A.M., Edris, G., Saleh, T., Alhmood, H.<br>***International Journal of Environmental Research and Public Health,*** 2023<br>Article • *Open access* | 6 |
| 18 | Specifying a cascade water demand forecasting model using time-series analysis: a case of Jordan<br>Alnsour, M.A., Ijam, A.Z.<br>***Sustainable Water Resources Management,*** 2023<br>Article • *Open access* | 5 |
| 19 | Levofloxacin Adsorption onto MWCNTs/CoFe2O4 Nanocomposites: Mechanism, and Modeling Using Non-Linear Kinetics and Isotherm Equations | 17 |

| No. | Article | Number of citations |
|---|---|---|
| | Al-Musawi, T.J., Qasim Almajidi, Y.Q., Al-Essa, E.M., ...Ganji, F., Balarak, D.<br>***Magnetochemistry,*** 2023<br>Article • *Open access* | |
| **20** | Application of magnetic activated carbon coated with CuS nanoparticles as a new adsorbent for the removal of tetracycline antibiotic from aqueous solutions (isotherm, kinetic and thermodynamic study)<br>Mazari Moghaddam, N.S., Barikbin, B., Al-Essa, E.M., ...Al-Musawi, T.J., Nasseh, N.<br>***Desalination and Water Treatment,*** 2022<br>Article • *Open access* | 9 |
| **21** | Application of PV-Thermal Array for Pumping Irrigation Water as an Alternative to PV in Ghor Al-Safi, Jordan: A case study<br>AlShaar, M.W., Al-Omari, Z.A.M., Emar, W.M., Alnsour, M.A., Abu-Rumman, G.A.<br>***Evergreen,*** 2022<br>Article • *Open access* | 12 |
| **22** | Rietveld Refinement, Structural Characterization, and Methylene Blue Adsorption of the New Compound Ba0.54Na0.46Nb1.29W0.37O5<br>Es-Soufi, H., Bih, H., Bih, L., ...Sayyed, M.I., Mezher, R.<br>***Crystals,*** 2022<br>Article • *Open access* | 3 |
| **23** | Green Synthesis of NiO-SnO2 Nanocomposite and Effect of Calcination Temperature on Its Physicochemical Properties: Impact on the Photocatalytic Degradation of Methyl Orange<br>Haq, S.U., Sarfraz, A., Menaa, F., ...Al-Essa, E.M., Shahzad, M.I.<br>***Molecules,*** 2022<br>Article | 9 |
| **24** | Effects of Various Irrigation Levels and Biochar-Based Fertilizers on Peanut Production<br>Abo Horish, M.M., Abooud, K.W., Mohammed, A.Q., ...Ahjel Salam, W.W., Batayneh, K.A.<br>***Journal of Nuts,*** 2022<br>Article | 7 |
| **25** | Simultaneous nitrification and denitrification by controlling current density and dissolved oxygen supply in a novel electrically-induced membrane bioreactor<br>Adam Lagum, A.A.<br>***Journal of Environmental Management,*** 2022<br>Article • *Open access* | 17 |
| **26** | UV and Visible Light Induced Photodegradation of Reactive Red 198 Dye and Textile Factory Wastewater on Fe2O3/Bentonite/TiO2 Nanocomposite<br>Mohammad hosseini, S., Al-Musawi, T.J., Romero-Parra, R.M., ...Ganji, F., Balarak, D. | 11 |

| No. | Article | Number of citations |
|---|---|---|
| | ***Minerals,*** 2022<br>Article • *Open access* | |
| **27** | A study on the ability of processed squeezed bitter almond for the removal of cadmium ions from contaminated water<br>Amro, A.A.N., Al-Essa, K., Al-Essa, E.M., ...Habib, M.A., Odeh, T.<br>***Desalination and Water Treatment,*** 2022<br>Article • *Open access* | 0 |
| **28** | Dual pretreatment-concentration hybrid process of salty water feed and reject of desalination plants<br>Al-Rawajfeh, A.E., Zaitoun, M.A., Al-Maáberah, A., Al-Ma'Abreh, A.M.<br>***Desalination and Water Treatment,*** 2022<br>Article • *Open access* | 0 |
| **29** | Removal of paracetamol from water and wastewater by Jordanian olivine: influence of ultrasonication<br>Al-Rawajfeh, A.E., Al-E'Bayat, M.S., Al-Itawi, H.I., ...Abu-Afifeh, Q., AlShamaileh, E.M.<br>***Desalination and Water Treatment,*** 2022<br>Article • *Open access* | 0 |
| **30** | Effective photocatalytic degradation of dye pollution in synthetic wastewater using nanocomposites of chromium and potassium oxides<br>Hamad, D.A., Ahmed, S.S., Sayyed, M.I., Rashad, M.<br>***Desalination and Water Treatment,*** 2022<br>Article | 0 |
| **31** | Modification of nitrifying microbial community via DC electrical field application<br>Adam Lagum, A.A., Elektorowicz, M.<br>***Journal of Environmental Chemical Engineering,*** 2022<br>Article • *Open access* | 19 |
| **32** | Water treatment from MB using Zn-Ag MWCNT synthesized by double arc discharge<br>Aljohani, F.S., Elsafi, M., Ghoneim, N.I., ...Khandaker, M.U., El-Khatib, M.<br>***Materials,*** 2021<br>Article | 17 |
| **33** | Integrating electrochemical and biological phosphorus removal processes via electrokinetic-based technology<br>Adam Lagum, A.A.<br>***Journal of Environmental Chemical Engineering,*** 2021 | 16 |
| **34** | Adsorption performance of an amine-functionalized MCM–41 mesoporous silica nanoparticle system for ciprofloxacin removal<br>Abu-Rumman, G.A., Al-Musawi, T.J., Sillanpää, M.A., Balarak, D.<br>***Environmental Nanotechnology, Monitoring and Management,*** 2021<br>Article • *Open access* | 55 |

| No. | Article | Number of citations |
|---|---|---|
| 35 | Degradation of humic acid using a solar light-photocatalytic process with a FeNi3 /SiO2 /TiO2 magnetic nanocomposite as the catalyst<br>Akbari, F., Khodadadi, M., Al-Musawi, T.J., Varouqa, I.F., Naghizadeh, A.<br>***Desalination and Water Treatment,*** 2021<br>Article | 5 |
| 36 | Development of sonophotocatalytic process for degradation of acid orange 7 dye by using titanium dioxide nanoparticles/graphene oxide nanocomposite as a catalyst<br>Al-<br>Musawi, T.J., Periakaruppan, R., Mengelizadeh, N., Mohammed, I.A., Balarak, D.<br>***Journal of Environmental Management,*** 2021<br>Article • *Open access* | 81 |
| 37 | Quality assessment of bottled and unbottled drinking water in Bangladesh<br>Uddin, M.R., Khandaker, M.U., Abedin, M.J., ...Sayyed, M.I., Sulieman, A.A.M.<br>***Water (Switzerland),*** 2021<br>Article | 9 |
| 38 | Photocatalytic performance of a nickel ferrite/chitosan/bismuth(III) oxyiodide nanocomposite for metronidazole degradation under simulated sunlight illumination<br>Arghavan, F.S., Al-Musawi, T.J., Abu-Rumman, G.A., ...Khataee, A., Nasseh, N.<br>***Journal of Environmental Chemical Engineering,*** 2021<br>Article | 32 |
| 39 | Complete degradation of tamoxifen using FeNi3@SiO2@ZnO as a photocatalyst with UV light irradiation: A study on the degradation process and sensitivity analysis using ANN tool<br>Arghavan, F.S., Al-Musawi, T.J., Allahyari, E., ...Nasseh, N., Hossein Panahi, A.<br>***Materials Science in Semiconductor Processing,*** 2021<br>Article | 43 |
| 40 | Effective adsorption of ciprofloxacin antibiotic using powdered activated carbon magnetized by iron(III) oxide magnetic nanoparticles<br>Al-Musawi, T.J., Mahvi, A.H., Khatibi, A.D., Balarak, D.<br>***Journal of Porous Materials,*** 2021<br>Article | 103 |
| 41 | Quick adsorption followed by lengthy photodegradation using FeNi3@SiO2@ZnO: A promising method for complete removal of penicillin G from wastewater<br>Kamranifar, M., Al-Musawi, T.J., Amarzadeh, M., ...Qutob, M., Arghavan, F.S.<br>***Journal of Water Process Engineering,*** 2021<br>Article | 37 |
| 42 | Adsorption of Cr(VI) ions onto powdered activated carbon synthesized from Peganum harmala seeds by ultrasonic waves activation | 37 |

| No. | Article | Number of citations |
|---|---|---|
| | Nasseh, N., Khosravi, R., Abu-Rumman, G.A., ...Al-Musawi, T.J., Khosravi, A.<br>***Environmental Technology and Innovation,*** 2021<br>Article | |
| **43** | Smcsis: An IoT based secure multi-crop irrigation system for smart farming<br>Samawi, V.W.<br>***International Journal of Innovative Computing, Information and Control,*** 2021<br>Conference Paper | 11 |
| **44** | Detecting the concentration of aldehydes disinfection by-products formed due to the application of the ozonation process in water treatment plants<br>Varouqa, I.F.<br>***Materials Today: Proceedings,*** 2021<br>Article • *Open access* | 6 |
| **45** | Feni3 @sio2 @cus magnetic nanocomposite: Synthesizing, characterization, and application for methylene blue adsorption<br>Nasseh, N., Al-Musawi, T.J., Khosravi, R., ...Arghavan, F.S., Barikbin, B.<br>***Desalination and Water Treatment,*** 2021<br>Article | 6 |
| **46** | The biosorption of reactive red dye onto orange peel waste: a study on the isotherm and kinetic processes and sensitivity analysis using the artificial neural network approach<br>Alwared, A.I., Al-Musawi, T.J., Lahieb Faisal, M.A., Mohammed, A.A.<br>***Environmental Science and Pollution Research,*** 2021<br>Article | 28 |
| **47** | Study of municipal landfill site for dioxin/furan and chlorinated pesticides for al-husainiyat landfill in Al-Mafraq Jordan<br>Al-Harahsheh, S.T.Q., Masad, M.H., Ibrahim, M., Al-Awaideh, S., Al-Nawaiseh, A.<br>***Fresenius Environmental Bulletin,*** 2020<br>Article • *Open access* | 2 |
| **48** | The eradication of reactive black 5 dye liquid wastes using Azolla filiculoides aquatic fern as a good and an economical biosorption agent<br>Balarak, D., Al-Musawi, T.J., Mohammed, I.A., Abasizadeh, H.<br>***SN Applied Sciences,*** 2020<br>Review • *Open access* | 54 |
| **49** | Sustainable environmental management and valorization options for olive mill byproducts in the Middle East and North Africa (MENA) region<br>Khdair, A.I., Abu-Rumman, G.A. | 110 |

| No. | Article | Number of citations |
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| | ***Processes,*** 2020 | |
| | Article | |
| **50** | A comprehensive study on the application of FeNi3@SiO2@ZnO magnetic nanocomposites as a novel photo-catalyst for degradation of tamoxifen in the presence of simulated sunlight | 66 |
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| | ***Environmental Pollution,*** 2020 | |
| | Article | |
| **51** | Preparation of activated carbon@ZnO composite and its application as a novel catalyst in catalytic ozonation process for metronidazole degradation | 88 |
| | Nasseh, N., Arghavan, F.S., Rodríguez-Couto, S., ...Esmati, M., Al-Musawi, T.J. | |
| | ***Advanced Powder Technology,*** 2020 | |
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| **52** | The practical utility of the synthesis FeNi3@SiO2@TiO2 magnetic nanoparticles as an efficient photocatalyst for the humic acid degradation | 64 |
| | Khodadadi, M., Al-Musawi, T.J., Kamani, H., Silva, M.F., Hossein Panahi, A. | |
| | ***Chemosphere,*** 2020 | |
| | Article • *Open access* | |
| **53** | Pollution estimation from olive mills wastewater in Jordan | 68 |
| | Khdair, A.I., Abu-Rumman, G.A., Khdair, S.I. | |
| | ***Heliyon,*** 2019 | |
| | Article | |
| **54** | A Comparative Study for the Identification of Superior Biomass Facilitating Biosorption of Copper and Lead Ions: A Single Alga or a Mixture of Algae | 12 |
| | Abdelkareem, H.N., Alwared, A.I., Al-Musawi, T.J., Brouers, F. | |
| | ***International Journal of Environmental Research,*** 2019 | |
| | Article | |
| **55** | Optimization the Effects of Physicochemical Parameters on the Degradation of Cephalexin in Sono-Fenton Reactor by Using Box-Behnken Response Surface Methodology | 65 |
| | Al-Musawi, T.J., Kamani, H., Bazrafshan, E., ...Silva, M.F., Abi, G. | |
| | ***Catalysis Letters,*** 2019 | |
| | Article | |
| **56** | Effective reduction of metronidazole over the cryptomelane-type manganese oxide octahedral molecular sieve (K-OMS-2) catalyst: facile synthesis, experimental design and modeling, statistical analysis, and identification of by-products | 21 |
| | Kalhori, E.M., Ghahramani, E., Al-Musawi, T.J., ...Noori Sepehr, M.N., Zarrabi, M. | |
| | ***Environmental Science and Pollution Research,*** 2018 | |

| No. | Article | Number of citations |
|---|---|---|
| | Article | |
| 57 | Role of Fe3O4 magnetite nanoparticles used to coat bentonite in zinc(II) ions sequestration<br>Mohammed, A.A., Brouers, F., Samaka, I.S., Al-Musawi, T.J.<br>***Environmental Nanotechnology, Monitoring and Management,*** 2018<br>Article • *Open access* | 31 |
| 58 | Efficiency and mechanism of water defluoridation by mixtures of jordanian zeolite, pozzolana, feldspar, and tripoli<br>Al-Itawi, H.I., Al-Rawajfeh, A.E., Al-Ma'Abreh, A.M., ...Al Dwairi, R.A., Ababneh, S.A.A.<br>***Desalination and Water Treatment,*** 2018<br>Article • *Open access* | 3 |
| 59 | Optimum efficiency of treatment plants discharging wastewater into river, case study: Tigris river within the Baghdad city in Iraq<br>Al-Musawi, T.J., Mohammed, I.A., Atiea, H.M.J.<br>***MethodsX,*** 2017<br>Article • *Open access* | 4 |
| 60 | Effect of pressing techniques on olive oil quality<br>Khdair, A.I., Ayoub, S.J., Abu-Rumman, G.A.<br>***American Journal of Food Technology,*** 2015<br>Article • *Open access* | 20 |
| 61 | Effect of olive mills wastewater (OMWW) on soil thermal conductivity<br>Khdair, A.I., Abu-Rumman, G.A.<br>***International Journal of Soil Science,*** 2015<br>Article • *Open access* | 4 |
| 62 | Monitoring of Dead Sea water surface variation using multi-temporal satellite data and GIS<br>Al Rawashdeh, S.B., Al-Ruzouq, R.I., Al-Fugara, A.M.S., ...Ziad, S.H.A.H., Ghayda, A.R.<br>***Arabian Journal of Geosciences,*** 2013<br>Article | 17 |
| 63 | Reduction of COD and TSS from paper industries wastewater using electro-coagulation and chemical coagulation<br>Al-Shannag, M., Lafi, W.K., Bani-Melhem, K., Gharagheer, F.S., Dhaimat, O.<br>***Separation Science and Technology,*** 2012<br>C | 61 |
| 64 | Fuzzy sets implementation for the evaluation of factors affecting solar still production<br>Mamlook, R., Badran, O.O.<br>***Desalination,*** 2007 | 22 |

| No. | Article | Number of citations |
|---|---|---|
| | Article • *Open access* | |
| **65** | Study of sharp-cut decrease of Dead Sea<br>Dhaimat, O., Dhaisat, S.<br>***Journal of Applied Sciences,*** 2006<br>Review | 1 |
| **66** | Evaluation of presence of THM in chlorinated wastewater and selected removal techniques<br>Qaisi, K.M., Qasem, A.M.<br>***Journal of Environmental Science and Health - Part A Toxic/Hazardous Substances and Environmental Engineering,*** 1996<br>Article | 6 |
| **Total number of citations** | | **1415** |