PERSONAL INFORMATION:

Full Name: Hajar Abyar

Nationality: IRAN

Academic Level: Assistant professor, Gorgan University of Agricultural Sciences and Natural Resources

Cell: +981732427040

E-mail: Hajar.abyar@gau.ac.ir, hajar.abyar@yahoo.com

EDUCATION:

- Ph.D. in Environment- Environmental pollution, Tarbiat Modares University, Tehran (2013-2018)
- M.Sc. in Marine Biology- Marine Pollution, Khorramshahr University of Marine Science and Technology (2007-2010)
- B.Sc. in Natural Recourse Engineering- Environment, Khorramshahr University of Marine Science and Technology (2003-2007)

RESEARCH INTEREST:

- Wastewater Treatment Systems
- COD and Nutrient Removal
- LCA and LCC Analysis
- Wastewater Treatment and Modeling
- Biological removal of Environmental pollution

PUBLICATION:

Hajar Abyar, Somayeh Namroodi, Zahra Gharekhani, Ferdos Hajimoradloo. (2024). Life cycle and efficiency assessment of fixed-bed bioreactor using recycled shredded plastics compared with conventional activated sludge bioreactor for dairy wastewater treatment. Journal of Water Process Engineering, 64, 105676.-

Saeedeh Rastgar, Hassan Rezaei, Habibollah Younesi, **Hajar Abyar**. (2024). Preparation of superparamagnetic $AC/Fe_3O_4/TiO_2$ nanoparticles from magnetic waste oily petroleum sludge (MWOPS): comprehensive characterization, H_2 production, design batch photoreactor, and treatment of oily petroleum wastewater (OPW) under UVA light. Carbon Letters, 34 (6): 1673-1691.

Zohreh Jahannia, Hassan Rezaei, **Hajar Abyar**, Somayeh Namroodi. (2024). Synthesis and optimization of biochar prepared from cow dung for methylene blue removal. Journal of Applied Research in Water and Wastewater. https://doi.org/10.22126/arww.2024.10163.1320.

Sahel Pakzad Toochaei, **Hajar Abyar**, Fatemeh Einollahipeer. (2024). Comprehensive life cycle assessment of NH_2-functionalized magnetic graphene oxide for mercury removal: Carbon emissions and economic evaluation. Environmental Pollution, 347, 123737. https://doi.org/10.1016/j.envpol.2024.123737

Rastgar, S., Rezaei, H., Younesi, H. **Abyar, H.** (2024). Preparation of superparamagnetic $AC/Fe_3O_4/TiO_2$ nanoparticles from magnetic waste oily petroleum sludge (MWOPS): comprehensive characterization, H_2 production, design batch photoreactor, and treatment of oily petroleum wastewater (OPW) under UVA light. Carbon Letters. https://doi.org/10.1007/s42823-024-00711-7.

Ramezani M, Rezaei H, Jahanshahi M, **Abyar H.** (2024). Assessing the Treatment of Mixed Landfill Leachate and Urban Wastewater using Various Electrode Arrangements in the Electrochemical Coagulation Process. J Health Res Commun, 10 (1) :16-29.

Rezaei, H., Rostami, N.M. & **Abyar, H.** (2024). Magnetic nanocomposite synthesized from cocopeat for highly efficient mercury removal from aqueous solutions. Biomass Conv. Bioref. https://doi.org/10.1007/s13399-024-05425-4.

Samaneh Salmani, Hassan Rezaei, **Hajar Abyar**. (2023). Adsorption potential of biochar derived from cotton waste for efficient removal of methylene blue from aqueous solutions. Journal of Applied Research in Water and Wastewater, 10 (2), 188-196. https://doi.org/10.22126/arww.2024.10144.1319

Mohadeseh Elhami, Nader Bahramifar, Hamid Reza Bijanzadeh, **Hajar Abyar**. (2023). Process efficiency and life cycle assessment of novel waste-derived Chl/TiO_2 photocatalyst for rhodamine B removal. Journal of Water Process Engineering, 56, 104425. https://doi.org/10.1016/j.jwpe.2023.104425.

Hajar Abyar, Mohsen Nowrouzi. (2023). A Comprehensive Framework For Eco-environmental Impact Evaluation Of Wastewater Treatment Plants: Integrating Carbon Footprint, Energy Footprint, Toxicity, and Economic Assessments. Journal of Environmental Management, 348, 119255. https://doi.org/10.1016/j.jenvman.2023.119255.

Hamed Shahraki, Fatemeh Einollahipeer, **Hajar Abyar**, Malihe Erfani. (2023). Assessing the environmental impacts of copper cathode production based on life cycle assessment. Integrated Environmental Assessment and Management. https://doi.org/10.1002/ieam.4857.

Eshagh Khaki, Hamid Boleydei, **Hajar Abyar**, Mohsen Nowrouzi. (2023). Integrating eco-environmental assessment with energy recovery for petrochemical wastewater treatment technologies: A transition towards green and sustainable management. Journal of Water Process Engineering, 55, 104103. https://doi.org/10.1016/j.jwpe.2023.104103.

Saeedeh Rastgar, Hassan Rezaei, Habibollah Younesi, **Hajar Abyar,** Ali Kordrostami, (2023). Photocatalytic degradation of methylene blue (MB) dye under UV light irradiation by magnetic diesel tank sludge (MDTS). Biomass Conversion and Biorefinery, https://doi.org/10.1007/s13399-023-04062-7.

Mohsen Nowrouzi, **Hajar Abyar**, Sohrab Rohani, (2023). A comparison of nitrogen removal systems through cost-coupled life cycle assessment and energy efficiency analysis. Science of the Total Environment, 858: 159787. https://doi.org/10.1016/j.scitotenv.2022.159787.

Hajar Abyar, Mohsen Nowrouzi, Amir Rostami, (2022). A comprehensive study of biological phosphorus removal systems from economic and environmental perspectives based on the optimization approach. Environmental Technology & Innovation, 28: 102811, https://doi.org/10.1016/j.eti.2022.102811.

Saeedeh Rastgar, Hassan Rezaei, Habibollah Younesi, **Hajar Abyar,** (2022). Low-cost magnetic char derived from oily sludge for Methylene Blue dye removal: optimization, isotherm, and kinetic approach. Advances in Environmental Technology, 4: 329-343. https://doi.org/10.22104/AET.2022.5795.1595.

Hajar Abyar, (2022). Life cycle assessment of wastewater treatment systems: Challenges and approaches, Environmental Resource Research, 10: 41-50. https://doi.org/10.22069/IJERR.2022.6030.

Mohammad Mardani, Mohsen Nowrouzi, **Hajar Abyar**, (2022). Evaluation and modeling of radiation and noise pollution in the north of the Persian Gulf (Case study: South Pars gas platforms). Advances in Environmental Technology, 3: 229-238. https://doi.org/10.22104/AET.2022.5712.1559.

Narges Mehboudi, Mohsen Nowrouzi, **Hajar Abyar**, (2022). Life cycle assessment of graphite carbon nitride synthesis with application approach in industries located in the Persian Gulf basin. Journal of Natural Environment, 74: 855-868. https://doi.org/10.22059/JNE.2022.326730.2245.

Fatemeh Najartabar Bisheh, Malihe Amini, **Hajar Abyar**, Nicole K. Attenboroughd, Irene Ling, Babak Salamatinia, Habibollah Younesi, Ali Akbar Zinatizadeh, (2021). Response surface methodology approach for simultaneous carbon, nitrogen, and phosphorus removal from

industrial wastewater in a sequencing batch reactor. Advances in Environmental Technology 2: 119-136.

Eshagh Khaki, **Hajar Abyar**, Mohsen Nowrouzi, Habibollah Younesi, Mahdi Abdollahi, Mahsa Gholami Enderati, (2021). Comparative life cycle assessment of polymeric membranes: Polyacrylonitrile, polyvinylimidazole and poly (acrylonitrile-co-vinylimidazole) applied for CO_2 sequestration, Environmental Technology & Innovation, 22: 101507.

Mohsen Nowrouzi, **Hajar Abyar,** (2021). A framework for the design and optimization of integrated fixed-film activated sludge-membrane bioreactor configuration by focusing on cost-coupled life cycle assessment, Journal of Cleaner Production, 296: 126557.

Mohsen Nowrouzi, **Hajar Abyar,** Habibollah Younesi, Eshagh Khaki, (2021). Life cycle environmental and economic assessment of highly efficient carbon-based CO_2 adsorbents: A comparative study. Journal of CO_2 Utilization, 47: 101491.

Mohsen Nowrouzi, **Hajar Abyar,** Amir Rostami, (2021). Cost coupled removal efficiency analyses of activated sludge technologies to achieve the cost-effective wastewater treatment system in the meat processing units. Journal of Environmental Management, 283: 111991.

Hajar Abyar, Mohsen Nowrouzi, (2020). Highly Efficient Reclamation of Meat-Processing Wastewater by Aerobic Hybrid Membrane Bioreactor-Reverse Osmosis Simulated System: A Comprehensive Economic and Environmental Study. ACS Sustainable Chemistry and Engineering, 8(37): 14207-14216.

Hajar Abyar, Habibollah Younesi, Mohsen Nowrouzi, (2020). Life cycle assessment of A_2O bioreactor for meat processing wastewater treatment: An endeavor toward the achievement of environmental sustainable development. Journal of Cleaner Production, 257: 120575.

Malihe Amini, Samira Sobhani, Habibollah Younesi, **Hajar Abyar**, Babak Salamatinia, Maedeh Mohammadi, (2020). Evaluating the Feasibility of Poly (3-hydroxybutyrate-co-3-hydroxyvalerate) Co-Biopolymer Production from Rice Wastewater by *Azohydromonas lata*. Applied Food Biotechnology, 7 (2): 73-83.

Malihe Amini, Hassan Yousefi-Massumabad, Habibollah Younesi, **Hajar Abyar**, Nader Bahramifar, (2019). Production of the polyhydroxyalkanoate biopolymer by *Cupriavidus necator* using beer brewery wastewater containing maltose as a primary carbon source. Journal of Environmental Chemical Engineering, 8: 103588.

Hajar Abyar, Habibollah Younesi, Nader Bahramifar, Ali Akbar Zinatizadeh, (2018). Biological CNP removal from meat-processing wastewater in an innovative high rate up-flow A_2O bioreactor. Chemosphere, 213: 197-204.

Hajar Abyar, Habibollah Younesi, Nader Bahramifar, Ali Akbar Zinatizadeh, (2018). Modeling the kinetics and cost performance index of high rate up-flow anaerobic,

anoxic, oxic bioreactor for meat wastewater treatment. Water and Environment Journal, 32(4): 637-649.

Mendez-Vilas A: Alonso J.L, **Abyar H**, Luján M.J, Bes A, Mendoza J.A, Doñate S, Younesi H, Bahramifar N, Zinatizadeh A.A. (2018). Exploring Microorganisms: Recent Advances in Applied Microbiology: Evaluating the effect of ammonium sulphate as draw solution on ammonia-oxidizing bacterial communities in a forward osmosis bioreactor. BrownWalker Press, p 310.

Hajar Abyar, Habibollah Younesi, Nader Bahramifar, Ali Akbar Zinatizadeh, Malihe Amini (2017). Kinetic evaluation and process analysis of COD and nitrogen removal in UAASB bioreactor. Journal of the Taiwan Institute of Chemical Engineers, 78: 272-281.

Fatemeh Shahaliyan, Alireza Safahieh, **Hajar Abyar** (2015). Evaluation of emulsification index in marine bacteria *Pseudomonas* sp. and *Bacillus* sp. Arabian Journal for Science and Engineering, 40 (7): 1849-1854.

Abyar H, Safahieh A, Zolgarnein H, Zamani I. (2012). Isolation and identification of Achromobacter denitrificans and evaluation of its capacity in cadmium removal. Polish Journal of Environmental Studies, 21(6), 1523-1527.

Safahieh A, **Abyar H**, Roostan Z, Zolgharnein H, Mojoodi F. (2012). Isolation and characterization of Pseudomonas resistant to heavy metals and poly aromatics hydrocarbons (PAHs) from Persian Gulf sediments. African journal of biotechnology, 11(19), 4418-4423.

Roostan Z, Safahieh A, Mojodi F, Zolgharnein H, Ghanemi K, **Abyar H**. (2012). Phenanthrene biodegradation by *Pseudomonas aeruginosa* and *Bacillus subtilis* isolated from Persian Gulf sediments. African journal of microbiology research, 6(21), 4585-4591.

Abyar H, Mojodi F, Safahieh A, Zolgharnein H, Zamani I. (2011). The role of *Pseudomonas putida* in bioremediation of naphthalene and copper. World journal of fish and marine science, 3(5), 444-449.

Publications in Persian Language

Mehboudi N, Nowrouzi M, **Abyar H**, (2022). Life cycle assessment of graphite carbon nitride synthesis with application approach in industries located in the Persian Gulf basin, Journal of Natural Environment, 74(4): 855-868.

Abyar H, Roostan Z. (2021). Biosorption of copper by Ochrobactrum sp. isolated from Khor Mousa sediments in Persian Gulf. Animal environmental Journal, In press.

Shahaliyan F, **Abyar H**, Lamoochi R, Safahieh A, Salamat N, Mojodi F, Zaredoost M. (2020). Assessment of Isolated Bacteria from Persian Gulf Sediments for Biological Removal of Lead and Anthracene. Journal of biosafety, 13(2): 31-50.

Esmaili Sari A. co-authors: **Abyar H**, Ghaffari S, Shabani M. (2018). Water quality standard in aquatic ecosystem. Academic Jihad, Publishing Organization, Tehran, Iran, p 330.

Shahaliyan F, Lamoochi R, Safahieh A, Salamat N, Mojodi F, **Abyar H**, Zaredoost M. (2016). Study the ability of bacteria isolated from Persian Gulf sediments to biologically remove lead and anthracene. Journal of Natural Environment, 69(3), 743-756.

Lamoochi R, Safahieh A, Salamat N, **Abyar H**. (2016). Study the function of halotolerant *Micrococcus luteus* in biological removal of zinc. Journal of Natural Environment, 69(2), 487-504.

Lamoochi R, Safahieh A, Salamat N, **Abyar H**. (2015). Study of temperature and salinity effects on growth of *Pseudomonas* sp. zinc resistant bacterium isolated from Persian Gulf sediments. Journal of Marine Biology, 6(4), 15-26.

Safahieh A, Lamoochi R, Salamat N, **Abyar H**. (2014). Isolation and identification of *Bacillus firmus* from marine sediments of Imam Khomeini port and study of its ability in biosorption of lead. Journal of Oceanography, 5(17), 11-19.

Lamoochi R, Safahieh A, Salamat N, **Abyar H**. (2014). Study of *P. aeruginosa* capability in zinc removal from aqueous solutions. Journal of Environmental Sciences, 12(1), 59-66.

Shahaliyan F, Safahieh A, **Abyar H**. (2013). Isolation and identification of bacterial species resistant to nickel from polluted sediments of Khor Musa and study the function of bacterium in biosorption of Nickle. Journal of Environmental Studies, 39(2), 93-100.

Abyar H, Safahieh A, Zolgharnein H, Zamani I. (2012). Study the biosorption of cadmium ion by *Achromobacter piechaudii* isolated from Persian Gulf sediments. Journal of Oceanography, 3(10), 19-25.

Abyar H. (2021). Life cycle assessment of wastewater treatment systems: challenges and approaches. 1th National Conference of Environment. Gorgan University of Agricultural Sciences and Natural Resources. Gorgan, Iran.

Alonso J.L, **Abyar H**, Luján M.J, Bes A, Mendoza J.A, Doñate S, Younesi H, Bahramifar N, Zinatizadeh A.A. Evaluating the effect of ammonium sulphate as draw solution on ammonia-oxidizing bacterial communities in a forward osmosis bioreactor. BioMicroWorld2017 Conference. Madrid. Spain.

Abyar H, Safahieh A, Zolgharnein H. (2010). Identification and study the growth of *Pseudomonas* sp. *in presence of copper*. 1th National Conference of Energy and Environment. University of Kerman, Kerman, Iran.

Abyar H, Safahieh A. (2008). The use of microorganisms in treatment of marine ecosystem from heavy metals. 2th Conference of Marine Environment, Industry and Sustainable Development. Iran.

ACADEMIC TEACHING EXPERIENCE:

M.Sc. course
Water and Soil Pollution, Waste Recycling, Marine Pollution, Industrial Pollution, Wastewater Treatment, Environmental Biogeochemical, *Gorgan University of Agricultural Sciences and Natural Resources*

B.Sc. course
Water and Soil Pollution, Waste Management, Health, Safety and Environment, *Gorgan University of Agricultural Sciences and Natural Resources*

Water and Soil Pollution, Ecology, General zoology, Biochemistry laboratory, *Payam Noor University of Khorramshahr*

SERVICE AND PROFESSIONAL MEMBERSHIP:

- Member of the scientific committee of the 1th National Conference of Environment. Gorgan University of Agricultural Sciences and Natural Resources. Gorgan, Iran.

LANGUAGES: Persian, English