

Shabnam Mirizadeh

Professional Summary

Researcher in the Field of Biological Wastewater Treatment, Microalgae Cultivation, Biofuel Production, and Adsorption Process

Education

Ph.D. in Marine Sciences and Technologies; Curriculum: Engineering for Marine and Coastal Environments, XXXVII cycle, at University of Genoa, Genoa, Italy (2021-to date)

- Thesis title: “Biosorption of Emerging Contaminants and Heavy Metals by Magnetic Chitosan/Microalgae Biocomposite”

Ph.D. in Chemical Engineering-Biotechnology at Tarbiat Modares University, Tehran, Iran (2016-2021)

- Thesis title: “Integration of Lipid Production from Microalgae with Emphasis on Non-destructive Extraction System”

M.Sc. in Chemical Engineering-Biotechnology at Sharif University of Technology, Tehran (2010-2012)

- Thesis title: “Experimental Study of Biological Removal of Cyanides in the Effluent of Coke Oven of Esfhan Steel Company”

B.Sc. in Chemical Engineering-Food Industry at Sahand University of Technology, Tabriz (2005-2009)

- Thesis Title: “Plant Designing of Cold Section in Olefin Plant Using Hysys and Aspen Plus”

Research Experience

- Collaboration for the research activity on an innovative system for the decontamination of plastic materials, PIOVAN S.r.l., March 2024
- Collaboration for the research activity on microalgae cultivation through the pilot plant located in the laboratories of the company STAM S.r.l , Genoa, Italy (January – April 2023)
- Collaboration for the research activity on using recycled water from a manatee tank for microalgae cultivation through the pilot plant (bubble column photobioreactors) located in the aquarium of Genoa, Italy (October- December 2022)
- Treatment of digestate from anaerobic digestion and biogas upgrade using microalgae, A team project, Genoa University, Genoa, Italy (February-September 2022)
- Scientific Reviewer of Reviewer credits, Archives of Microbiology, Biotechnology for the Environment, Bioprocess and Biosystems Engineering, Chemical Engineering Transactions, Biological Research - Bollettino della Società Italiana di Biologia Sperimentale, (June 2022- to date)
- Winery wastewater treatment by microalgae, A team project, Genoa University, Genoa, Italy (2019-2020).
- Visiting researcher at Genoa University, Genoa, Italy (October- July 2020)
- Experimental determination of pre-treatment on hydrolysis of algal biomass to the extraction of carbohydrates and proteins, A team project, Tarbiat Modares University, Tehran, Iran (2018).
- Investigating the potential of microalgae as a sustainable alternative for concentrated municipal wastewater treatment and alcohol distillery wastewater, A team project, Tarbiat Modares University, Tehran, Iran (2018).
- Isolation and purification Indigenous Microorganisms, Biochemical and Bioenvironmental Eng. Research Center (BBRC), Sharif University of Technology, Tehran, Iran (2013)

Teaching Experience

- Teaching Fluid Mechanics, Heat Transfer, MATLAB Software in Payame Noor University, Ardebil (January 2012- July 2014)
- Teacher Assistant in Biochemistry and Environmental Biotechnology course in DICCA/Genoa University (March-April 2024)

Work Experience

- Working as a consulting engineer in the field of water technologies at Watech Accelerator Company (part-time) (2021).
- Working as a consulting engineer in the field of air conditioners at Paydar Tahvie Persian Company (2013-2015).
- Apprentice in the dairy factory (Moghan Agro-Industrial and Animal Husbandry) (Summer 2009)

Thesis Supervision as Co-Advisor

- **Lucrezia Costa**, “Use of wastewater from the water recovery plant of the manatee tank at the aquarium of Genoa for the cultivation of *Chlorella Vulgaris* and biogas production”, 2022, **Bachelor’s Degree** in Chemical and Processes Engineering, Department of Civil, Chemical and Environmental, University of Genoa.
- **Riccardo Venturino**, “Use of microalgal co-culture for the continuous treatment of winery wastewater”, 2022, **Bachelor’s Degree** in Chemical and Processes Engineering, Department of Civil, Chemical and Environmental, University of Genoa.
- **Carola Vallino**, “Removal of endocrine disruptors, using microalgae and physiological validation using in vitro models”, 2024 (on-going), **Bachelor’s Degree** in Earth, Environmental and Life Sciences, University of Genoa
- **Jeutang Voufo Marc Danny**, “Industrial wastewater purification in the northern region of Cameroon with microalgae (*Chlorella vulgaris*), 2024 (on-going), **Bachelor’s Degree** in Biotechnology, Department of Experimental Medicine, University of Genoa.
- **Lucca Callero**, “Bioremediation of Antibiotic Solutions Using Microalgae”, 2023, **Master Degree** in Medical Pharmaceutical Biotechnology, Department of Experimental Medicine, University of Genoa.
- **Riccardo Audissino**, “Start-up of a pilot scale multi-tubular photobioreactor designed for wastewater treatment using *Chlorella vulgaris*”, 2024, **Master Degree** in Chemical and Processes Engineering, Department of Civil, Chemical and Environmental, University of Genoa
- **Lucrezia Costa**, “ Adsorption of tetracycline and lead in aqueous solution by magnetic chitosan/ *Arthrospira platensis* biocomposite: A fixed-bed column study”, 2024 (on-going), **Master Degree** in Chemical and Processes Engineering, Department of Civil, Chemical and Environmental, University of Genoa.
- **Behnaz Shojaeianbabaei**, “Batch and continuous study of tetracycline removal by mixed culture of microalgae” 2024 (on-going), **Master Degree** in Chemical and Processes Engineering, Department of Civil, Chemical and Environmental, University of Genoa

Journal Papers

- Y. A. S. Moura, M. da Silva, S. Mirizadeh, A. L. F. Porto, A. A. Casazza, R. P. Bezerra, A. Converti, “Fibrinolytic enzyme from *Arthrospira platensis*: Kinetic and thermodynamic investigation”, *Process Biochemistry*, 2024. <https://doi.org/10.1016/j.procbio.2024.04.036>
- S. Mirizadeh, C. Solisio, A. Converti, A. A. Casazza, “Efficient removal of tetracycline, ciprofloxacin, and amoxicillin by novel magnetic chitosan/microalgae biocomposites”, *Separation and Purification Technology*, 2024. <https://doi.org/10.1016/j.seppur.2023.125115>
- S. Mirizadeh, S. A. Arni, M. Elwaheidi, A. A. M. Salih, A. Converti, A. A. Casazza" Adsorption of tetracycline and ciprofloxacin from aqueous solution on raw date palm waste", *Chemical Engineering & Technology*, 2023. <https://doi.org/10.1002/ceat.202300193>

- E. Spennati, S. Mirizadeh, A. A. Casazza, C. Solisio, A. Converti, " *Chlorella vulgaris* and *Arthrospira platensis* growth in a continuous membrane photobioreactor using industrial winery wastewater ", Algal Research, 2021. <https://doi.org/10.1016/j.algal.2021.102519>
- S. Mirizadeh, A. A. Casazza, A. Converti, M. Nosrati, S. A. Shojaosadati, "Repetitive non-destructive extraction of lipids from *Chlorella vulgaris* grown under stress conditions", Bioresource Technology 326, 2021. <https://doi.org/10.1016/j.biortech.2021.124798>
- S. Mirizadeh, M. Nosrati, S. A. Shojaosadati, " Synergistic effect of nutrient and salt stress on lipid productivity of *Chlorella vulgaris* through two-stage cultivation", BioEnergy Research 13, 507-517, 2020. <https://doi.org/10.1007/s12155-019-10077-8>
- S. Mirizadeh, S. Yaghmaei, Z. G. Nezhad, "Biodegradation of cyanide by a new isolated strain under alkaline conditions and optimization by response surface methodology (RSM)", Journal of Environmental Health Science and Engineering 12, 85, 2014. <https://doi.org/10.1186/2052-336X-12-85>

Conference Proceedings

- S. Mirizadeh, S. Yaghmaei, Z. G. Nezhad, "Isolation and purification of cyanide biodegradation microorganisms from coke oven effluent of Esfahan steel company", accepted for oral presentation in the 14th Iranian National Congress of Chemical Engineering, October 2012, Sharif University of Technology, Iran. <https://en.civilica.com/doc/172123/>
- S. Mirizadeh, A. Chakoshian, M. Nosrati, S. A. Shojaosadati, "Semi-continuous cultivation of *Chlorella vulgaris* for treating artificial wastewater" accepted for presentation in the 16th Iranian National Congress of Chemical Engineering, January 2019, Amirkabir University of Technology, Iran. <https://en.civilica.com/doc/859725/>
- S. Mirizadeh, A. Chakoshian, M. Nosrati, S. A. Shojaosadati, "Two-stage cultivation of *Chlorella vulgaris* for high lipid production", accepted for oral presentation in the 16th Iranian National Congress of Chemical Engineering, January 2019, Amirkabir University of Technology, Iran. <https://en.civilica.com/doc/859726/>
- S. Mirizadeh, A. Chakoshian, M. Nosrati, S. A. Shojaosadati, "Optimization of stress conditions to increase lipid production in *Chlorella vulgaris*", accepted for oral presentation in the 2nd Iranian National Conference on Phycology, January 2019, Tarbiat Modares University, Tehran, Iran. <https://profdoc.um.ac.ir/paper-abstract-1081966.html>
- AA. Casazza, E. Spennati, S. Mirizadeh, A. Converti, "Continuous treatment of wastewater from the wine industry using microalgae", Co-author of accepted for oral presentation at the 2nd National Congress of the Italian Association of Atmospheric Sciences and Meteorology, September 2020, Padova, Italy
- S. Mirizadeh, AA. Casazza, A. Converti, "Comparison of kinetic models for *Chlorella vulgaris* growth in mixotrophic culture", Presented as poster in the Conference GRICU 2022 - "Centralità dell'Ingegneria Chimica in un mondo che cambia", 3-6 July 2022, Ischia, Italy

- S. Mirizadeh, AA. Casazza, A. Converti, “Simultaneous removal of tetracycline and ciprofloxacin using magnetic chitosan/*Arthrospira platensis* biocomposite: Isotherms, kinetics, and thermodynamics Study”, Presented as poster in the 14th ECCE and 7th ECAB, 17-20 September 2023, Berlin, Germany
- S. Mirizadeh, M. Pettinato, B. Fabiano, A. Converti, A.A. Casazza, “Innovative treatment of digestate and biogas upgrade using *Chlorella vulgaris*, Co-author of accepted for oral presentation, E2DT, 22-25 October 2023, Palermo, Italy
- S. Mirizadeh, L. Callero, AA. Casazza, A. Converti, . Effect of tetracycline and ciprofloxacin on growth and biochemical composition of *Chlorella vulgaris*”, accepted paper for oral presentation at the 9th International Conference on Industrial Biotechnology, June 30- July 3 2024, Bologna, Italy,
- S. Mirizadeh, AA. Casazza, A. Converti, Removal of tetracycline and crystal violet by magnetic chitosan-lipid free *Chlorella vulgaris* biocomposite”, accepted for oral presentation at the 27th International Congress of Chemical and Process Engineering, 25-29 August 2024, Prague, Czech Republic

Extracurricula Activities

- Member of the Executive Group in the first Environmental Remediation Technologies Conference, by Sharif University of Technology (2011)
- Vice-Chair in student scientific committee at the 20th National Food Science and Industries Congress on Food Technology, by Sharif University of Technology (2011)
- Member of the Executive Group in the 3rd Iranian Conference on Systems Biology, by Tarbiat Modares University (2018)
- Member of the Executive Group in Biotechnology Research and Development Center, Tarbiat Modares University (2017-2018)

Award

- Supporting grant by Esfahan steel company for M.Sc. thesis
- Supporting grant by Iran National Science Foundation for visiting research

Languages

- Persian and Azari (Native)
- English (B2)
- Italian (A2)
- Turkish (B1)

Lab and Softwar Skills

- UV-Vis spectrophotometer, Ultrasonication, Fungi cell culture, Bacterial cell culture, Microalgae cell culture, Gas chromatography
- Computer skilled including MATLAB, HYSYS, Microsoft Office, Design expert

In compliance with the law D.LGS. no. 196 dated 30/06/2003, , I hereby authorize you to use and process my personal details contained in this document.

Genoa, 16/07/2024