**Education**

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| 2011-2013  2006-2010 | **M.Sc. in Applied Chemistry**  Faculty of Sciences – Department of Chemistry, University of Sistan and Baluchestan, Zahedan, Iran  **GPA:** 18.29/20 (4/4)  **Thesis:**  Application of Strontium orthoferrite nanoparticles for methanol electrooxidation in fuel cells.  **Supervisor:** Prof. Mozhgan Khorasani Motlagh  **Advisor:** Prof. Meissam Noroozifar  **B. Sc. in Applied Chemistry**  Faculty of Sciences – Department of Chemistry, Semnan University, Semnan, Iran  **GPA:** 16.48/20 (4/4) |
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**Research Interests**

* Applied Chemistry
* Environmental biotechnology
* Environmental Engineering and Bioprocess Engineering
* Biochemistry and appied microbiology
* Biological wastewater treatment
* Biofilm-based technologies in wastewater treatment
* Nutrient conversion processes
* Application of high-throughput molecular techniques for microbial analysis
* Environmental microbiology
* Resource Recovery

**Research Experiences**

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| 2014-2018  2019-2020 | Research Assistant, Department of Applied Chemistry, Environmental Research Center (ECR), Faculty of Chemistry, Razi University, Kermanshah, Iran.  Advisor: Associate Professor Ali Akbar Zinatizadeh  Contributed to and led multiple research programs on biological treatment of industrial wastewaters (anaerobic and aerobic processes), Up-flow anaerobic sludge blanket (UASB) reactor, Up-flow anaerobic sludge fixed film (UASFF) reactor, Membrane bioreactors, Activated sludge systems, Aerobic-anoxic treatment systems (CFID airlift bioreactor), |

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| 2018 | Research Assistant, Environmental Biotechnology group, Department of Biotechnology, Delft University of Technology, Delft, The Netherlands.  Advisor: Professor Mark van Loosdrecht  Contributed to research programs on aerobic granular sludge (AGS) technology. |

**Teaching Experiences**

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| 2017-2018  2017-2020 | Instructor, water and wastewater laboratories (second and third year undergraduate students), Department of Applied Chemistry, Razi University.  Teacher Assistant, Kinetics and Reactor design Course (First year M.Sc. students, Department of Applied Chemistry, Razi University. |

**Laboratory and instrumental skills**

* Analytical and Applied Chemistry
* UV/VIS Spectrophotometry
* Cyclic Voltammetry (CV)
* Total Organic Carbon analysis
* Gas Chromatography Mass Spectrometry(GC/MS)
* Polymeric Membrane and inorganic synthesis
* Gallery™ Plus Automated Photometric Analyzer instrument for water quality
* Molecular Biology and Biotechnology related techniques
* Quantitative real time PCR
* Microscopy and image analysis
* Fluorescence In Situ Hybridization (FISH) analysis
* Cell culture

**Computer Skills**

* Microsoft office (Word, PowerPoint, Excel)
* MATLAB (Intermediate)
* Design Expert software

**Publications**

* [Simultaneous biodegradability enhancement and high-efficient nitrogen removal in an innovative single stage anaerobic/anoxic/aerobic hybrid airlift bioreactor (HALBR) for composting leachate treatment: process modeling and optimization](https://scholar.google.com/scholar?oi=bibs&cluster=4873836554528790905&btnI=1&hl=en)

M. Mirghorayshi, A.A. Zinatizadeh, MCM. Van Loosdrecht, Chemical Engineering Journal. <https://doi.org/10.1016/j.cej.2020.127019>

* [Impact of aerobic availability of readily biodegradable Cod on morphological stability of aerobic granular sludge](https://scholar.google.com/scholar?oi=bibs&cluster=4684910942073798346&btnI=1&hl=en)

V. Haaksman, M. Mirghorayshi, MCM. Van Loosdrecht, M. Pronk, Water Research. <https://doi.org/10.1016/j.watres.2020.116402>

* Waste or gold? Bioelectrochemical resource recovery in source-separated urine

S. Nazari, A.A. Zinatizadeh, M. Mirghorayshi, MCM. Van Loosdrecht, Trends Biotechnol. <https://doi.org/10.1016/j.tibtech.2020.03.007>

* A novel single continuous electrocoagulation process for treatment of licorice processing wastewater: optimization of operating factors using RSM

S. Abbasi, M. Mirghorayshi, S. Zinadini, A.A. Zinatizadeh, Process Saf Environ Prot. 2020, 134, 323-332. <https://doi.org/10.1016/j.psep.2019.12.005>

* Evaluating the process performance and potential of a high-rate single airlift bioreactor for simultaneous carbon and nitrogen removal through coupling different pathways from a nitrogen-rich wastewater

**M. Mirghorayshi**, A.A. Zinatizadeh, MCM. Van Loosdrecht, Bioresour Technol. 2018, 260, 44-52. <https://doi.org/10.1016/j.biortech.2018.03.048>

* Effect of Temperature on the Performance of an Up-flow Anaerobic Sludge Fixed Film (UASFF) Bioreactor Treating Palm Oil Mill Effluent (POME)

A.A. Zinatiadeh, **M. Mirghorayshi**, WASTE BIOMASS VALORI. **2017**, 1-7. https://link.springer.com/article/10.1007/s12649-017-0057-0

* An anaerobic hybrid bioreactor of granular and immobilized biomass for anaerobic digestion (AD) and dark fermentation (DF) of palm oil mill effluent: Mass transfer evaluation in granular sludge and role of internal packing

A.A. Zinatizadeh, P. Mohammadi, **M. Mirghorayshi**, S. Ibrahim, H. Younesi, A.R. Mohamed, Biomass Bioenergy. 2017, 103, 1-10. <https://doi.org/10.1016/j.biombioe.2017.05.006>

* Influence of thermal and chemical pretreatment on structural stability of granular sludge for high-rate hydrogen production in an UASB bioreactor

A.A. Zinatizadeh, **M. Mirghorayshi**, P.M. Birgani, P. Mohammadi, S. Ibrahm, Int. J. Hydrogen Energy. 2017, 42 (32), 20512-20519. <https://doi.org/10.1016/j.ijhydene.2017.07.029>

**Conferences**

**2013** Investigation of the catalytic activity of MWCNTs-SrFeO3 nanoparticles for methanol and ethanol

electrooxidation, 19th Iranian seminar of analytical chemistry, Ferdowsi University of Mashhad,

Mashhad, Iran. 27 Feb - 1 March.

**2013** Oxidation of methanol and ethanol on peroveskite-type SrFeO3 nanoparticles in alkaline medium,

19th Iranian seminar of analytical chemistry, Ferdowsi University of Mashhad, Mashhad, Iran.

27 Feb - 1 March.

**2010** Regioselective ring opening of epoxides in 5-isopropyl-2,3-cis-epoxy cyclohexanole by azide, 17th

Iranian seminar on organic chemistry, University of Mazandaran, Babolsar, Iran, 13-15 October.

**Honors/awards**

2018 Achieved the top researcher title in Chemistry, Razi University, Iran.

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| 2013 | Ranked 1st within the M.Sc. Students in the Applied Chemistry class of 2013 |

**Languages**

* Persian: Native
* English: Proficient User (C1 level).

**Hobbies**

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| * Music * Movies * Photography | * Sports: basketball, climbing * Traveling |

**References**

* **Assoc. Prof. Ali Akbar Zinatizadeh**
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