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- Educational background:

I) **Ph.D.** in Chemical Engineering, Tokyo Institute of Technology, Tokyo, Japan, 2002

II) **M.Sc.** in Chemical Engineering, Isfahan University of Technology, Iran, 1994

III) **B.Sc.** in Chemical Engineering, Isfahan University of Technology, Iran, 1989

- **Journal papers:**

1. A.A. Nozaeim, **H.R. Mortaheb**, A. Tavasoli, M. Mafi, "CO₂ absorption/desorption rates in aqueous DEEA/MDEA and sulfolane-contained hybrid solutions: Effects of physical properties and reaction rate", *Environ. Sci. Pollut. Res.*, 1-12 (2022).
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4. M.S. Samie, **H.R. Mortaheb**, "Novel correlations for prediction of SARA contents of vacuum residues", *Fuel* 305, 121609 (2021).
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7. M.A. Mousavi, **H.R. Mortaheb**, M. Baghban Salehi, "Hydrophobizing polyether sulfone membrane by sol-gel for water desalination using air gap membrane distillation", *Polym-Plastics Tech. Mater.* 60 (2021).
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14. P. H. Niknam, D. Fiaschi, **H.R. Mortaheb**, B. Mokhtarani, "Numerical investigation of multiphase flow in supersonic separator considering inner body effect", *Asia Pac. J. Chem. Eng.* **14**, 1-11 (2019).
15. A. Khodadadi-Dizaji, B. Mokhtarani, **H.R. Mortaheb**, "Deep and fast oxidative desulfurization of fuels using graphene oxide-based phosphotungstic acid catalysts", *Fuel*, **236**, 717-729 (2019).
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22. A. Khodadadi-Dizaji, **H.R. Mortaheb**, B. Mokhtarani, "Preparation of supported catalyst by adsorption of polyoxometalate on graphene oxide/reduced graphene oxide", *Mat. Chem. Physics*, 199, 424-434 (2017).
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 25. P. Niknam, **H.R. Mortaheb**, B. Mokhtarani, "Optimization of dehydration process to improve stability and efficiency of supersonic separation", *J. Nat. Gas Sci. Eng.*, 43, 90-95 (2017).
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- **Conference papers:**

1. S. Abdollahi, **H.R. Mortaheb**, M. Esmaili, A. Ghadimi, "CO₂/CH₄ separation performance of polyimide blend membranes containing [Emim][Tf₂N] ionic liquid", 10th Int. Chem. Eng. Congress Exhibition (IChEC 2018) Isfahan (2018).

2. E. Jafari Gol, M. Baghban Salehi, **H.R. Mortaheb**, "Investigating on effect of nanoparticles in lignin-based hydrogels for removal of heavy metals", National conference on treatment of water, air, and soil, TWAS2018, Tehran (2018).
3. E. Jafari Gol, M. Baghban Salehi, **H.R. Mortaheb**, "Influence of acrylic acid on rheological behavior of (carboxymethyl cellulose/acryl amid) based hydrogels", 3rd National Rheology Meeting, AUT, Tehran (2018).
4. E. JafariGol, M. Baghban Salehi, **H.R. Mortaheb**, "Effect of network modulus parameter on prediction of poly(AM-co-AA)/CMC hydrogel swelling behaviour", 1st Int. Conf. Rheology, IPPI, Tehran (2019).
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9. Khodadadi, **H.R. Mortaheb**, B. Mokhtarani, "One-step electrochemical synthesis of graphene/metal particle nanocomposite", 6th Int. Conf. on Nanostructures (ICNS6), Kish, Iran (2016).
10. E. Tajmiri, **H.R. Mortaheb**, M.H. Amini, "The effect of naparticle size on the amount of chromium metal removal in foam fractionation process", 4th Seminar on Chemistry, Chemical Engineering, and Nano, Tehran University (2016).
11. Pouriya H. Niknam, **H.R. Mortaheb**, B. Mokhtarani, "Investigation and numerical simulation of low pressure steam condensation of convergence-divergence nozzle using pressurebased method", 7th national conference on CFD Application in Chemistry and oil industries, Bahonar Univ., Kerman, Iran, May 2016.

12. Pouriya H. Niknam, **H.R. Mortaheb**, B. Mokhtarani, "Vortex tube CFD simulation using a three-parameter turbulent model and performance investigation by nonlinear regression", 7th national conference on CFD Application in Chemistry and oil industries, Bahonar Univ., Kerman, Iran, May 2016.
13. **H.R. Mortaheb**, A. Bolhasani, F. Meshkini, F. Ghaemmaghamsi, K. Tabar Heidar, "A method for recovery of n-methyl 2-pyrrolidone from wastes of solvent regeneration unit in 1,3-butadiene extraction plant", 1st J. Conf. on Chem. Eng. and Applications, Tokyo, Japan, 2016.
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15. K. Gerani, **H.R. Mortaheb**, B. Mokhtarani, "Preparation and characterization of sulfonated polyethersulfone composite ion-exchange membranes filled by graphene oxide nanosheets", MST2015, Tehran Univ., 2015.
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• Some recent projects:

1. Extraction and purification of lithium from soil and water resources
2. Separation of olefin-paraffin compounds in gaseous phase by liquid membrane
3. Construction of membrane distillation pilot equipped with heat recovery systems for water desalination
4. Construction of wet air oxidation reactor setup for removal of organic pollutants and spent caustic from industrial wastewaters
5. Construction of supersonic nozzle setup for dewpoint conditioning of gaseous mixtures
6. Plasma polymerization for production of appropriate PES membrane for membrane distillation
7. Optimization of membrane distillation for desalination
8. Synthesis of hybrid ionic membranes for membrane separation applications
9. Synthesis of polymeric membranes for pervaporation, membrane distillation, and supported liquid membranes
10. Studies of vapor-liquid equilibria of ionic liquids/chemical solvent mixtures
11. Desulfurization of petroleum solvents by pervaporation
12. Dehydration of alcohols by pervaporation
13. Dehydration of organic solvents by PSA setup
14. Removal of organic and heavy metal pollutant from industrial wastewater by liquid membrane systems
15. Separation of metallic ion impurities from acidic mixtures by ion exchange, diffusion dialysis, electrolysis, electro-adsorption, and distillation
16. Design of absorbing towers for recovery of heavy aprotic solvents from gaseous mixtures
17. Recovery of NMP from wastes of petrochemical plants and enhancing purity of commercial NMP for specific applications
18. Research on removal of NMP by UV-assisted photocatalytic degradation
19. Research on chemical absorption of gases in emulsions

Published Books:

1. "Scale-up in chemical engineering", Hamid Reza Mortaheb, Iranian Association of Polymer and Chemical Engineers, Iran, 2013.
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Patents:

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Teaching experiences:

1. Mass transfer
2. Heat transfer
3. Unit operations
4. Separation processes
5. Kinetics and reactor design
6. Scale-up in chemical engineering
7. Fluid mechanics
8. Transport phenomena

Research interests:

Innovation of separation processes, research on membrane separation processes, mass transfer, and environmental engineering.

Language skills:

English, Japanese