Personal Data

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Gender: Male	**Date of Birth:** June 24th, 1973
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Degree: Associate Professor in Chemical Engineering

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Educational Qualifications

Ph.D.

Chemical Engineering, School of Chemical and Petroleum Engineering, Shiraz University, Shiraz, Iran, (GPA: 17.43/20), September 2006 – February 2010.

M.Sc.

Chemical Engineering, Chemical Engineering Department, School of Engineering, Shiraz University, Shiraz, Iran, (GPA: 17.07/20), September 1997 – June 2000.

B.Sc.

Chemical Engineering (Petrochemical Industries), Chemical Engineering Department, School of Engineering, Shiraz University, Shiraz, Iran, (GPA: 16.64/20), September 1992 – September 1997.

Thesis Title

Ph.D.

"Experimental and theoretical investigation of biodegradation of a heavy crude oil from south of Iran"

M.Sc.

"Determination of optimum conditions for roasting of molybdenite concentrates from Sarcheshmeh copper complex in a fluidized bed reactor"

B.Sc.

"Mathematical modeling of aluminum trihydroxide crystal size distribution in a batch crystallizer"

Experience

2010-present: Associate Professor, Department of Chemical Engineering, Yasouj University, Yasouj, Iran.

2007-2010: Industrial Engineering Consultant and Technical Trainer, Fars Province, Iran.

2001-2007: Supervisor of Ammonia Plant, Shiraz Petrochemical Complex, Shiraz, Iran.

2000-2001: Industrial Engineering Consultant, Sarcheshmeh Copper Complex, Sarcheshmeh, Iran.

1997-2000: Graduate Research Assistant, Shiraz University, Shiraz, Iran.

Professional Membership

- Enhanced Oil Recovery Research Center, Shiraz University, Shiraz, Iran.

- Environmental Research Center in Oil, Gas and Petrochemical Industries, Shiraz University, Shiraz, Iran.

Sponsored and Industrial Projects

- Design of a pilot plant for improving the size distribution of aluminum trihydroxide crystals, sponsored by Ministry of Industries and Mines, Government of Islamic Republic of Iran, 1997-2000.

- Determination of optimum conditions for roasting of molybdenite concentrates in a fluidized bed reactor, sponsored by Sarcheshmeh Copper Complex, 1999-2001.

- Adjusting the distillation columns of argon plant for increasing the argon production, sponsored by Shiraz Petrochemical Complex, 2004-2005.

- Adjusting the distillation column of methanol and ethanol plants for increasing the methanol and ethanol products, Isfahan, 2010-2011.

- Installation of the second ammonia storage tank, sponsored by Shiraz Petrochemical Complex, 2005-2006.

- Application of a membrane bioreactor for treatment of high salinity formation water from oil and gas reservoirs, sponsored by Research Center of National Iranian Oil Company, 2006-2008.

- Experimental investigation of the effect of wettability alteration on oil recovery efficiency of sand reservoirs during microbial injection process, sponsored by Research Center of National Iranian Oil Company, 2008-2010.

- Bioremediation of crude oil-contaminated soil in Gachsaran Oil Field, sponsored by Gachsaran Branch of Islamic Azad University, 2011-2016.

List of Publications

A) Research Publications

1. **P. Darvishi**, S. Ayatollahi, D. Mowla, A.Niazi, Biosurfactant production under extreme environmental conditions by an efficient microbial consortium, ERCPPI-2, Colloids and Surfaces B: Biointerfaces 84 (2011) 292–300.

2. **P. Darvishi**, D. Mowla, S. Ayatollahi, A.Niazi, Biodegradation of heavy crude oil in wastewater by an efficient strain ERCPPI-1, Desalination and water treatment 28 (2011) 46-54.

3. S.Sh. Amirabadi, A. Jahanmiri, M.R. Rahimpour, B. Rafie nia, **P. Darvishi**, A. Niazi, Investigation of *Paenibacillus alvei* ARN63 ability for biodemulsifier production: Medium optimization to break heavy crude oil emulsion, Colloids and Surfaces B: Biointerfaces, 109 (2013) 244–252.

4. B. Vaferi, Y. Rahnama, **P. Darvishi**, A. Toorani, M. Lashkarbolooki, Phase equilibria modeling of binary systems containing ethanol using optimal feedforward neural network, Journal of Supercritical Fluids 84 (2013) 80– 88.

5. B. Vaferi, V. Gitifar, **P. Darvishi**, D. Mowla, Modeling and analysis of effective thermal conductivity of sandstone at high pressure and temperature using optimal artificial neural networks, Journal of Petroleum Science and Engineering, 119 (2014) 69-78.

6. A. Behzadniya, **P. Darvishi**, S.A. Manafi, Evaluation and performance of magnesium oxide nanoparticles in chromium removal from aqueous solution, Nanomaterials 16(5) (2014) 265-272.

7. **P. Darvishi**, S.M. Salehi, A three-dimensional mathematical model for drug delivery from drug-eluting stents, Iranian Journal of Chemical Engineering, 12(4) (2015) 15-27.

8. F. Zareie-kordshouli, **P. Darvishi**, A. Lashanizadehgan, M. Ejlali, Process and metallurgical evaluation of outlet pigtails damage in the primary steam reformer of an industrial ammonia plant, Engineering Failure Analysis, 59 (2016) 279-291.

9. F. Zareie-kordshouli, **P. Darvishi**, A. Lashanizadehgan, Comparative evaluation of CO_2 capture from flue gas by Emim Ac ionic liquid aqueous potassium carbonate (without activator) and MEA solutions in a packed column, International Journal of Greenhouse Gas Control, 52 (2016) 305-318.

10. F. Zareie-kordshouli, **P. Darvishi**, A. Lashanizadehgan, Thermophysical properties and CO_2 absorption studies of the amine functionalized Amim Tf2N and the non-functionalized counterpart bmim Tf2N ionic liquids, International Journal of Greenhouse Gas Control, 53 (2016) 328-337.

11. S. Azizi, H. Karimi, **P. Darvishi**, Flow pattern and oil holdup prediction in vertical oil–water two–phase flow using pressure fluctuation signal, Iranian Journal of Chemistry & Chemical Engineering, 36(2) (2017) 15-27.

12. L. Mahmoodi, **P. Darvishi**, Mathematical modeling and optimization of carbon dioxide stripping tower in an industrial ammonia plan, International Journal of Greenhouse Gas Control, 58 (2017) 42-51.

13. F. Zareie-kordshouli, **P. Darvishi**, A. Lashanizadehgan, Post-combustion CO_2 capture using Emim Ac ionic liquid piperazine activated N-methyldiethanolamine and promoted K_2CO_3 in a bench scale, International Journal of Greenhouse Gas Control, 62 (2017) 42-60.

14. F. Zareie-kordshouli, **P. Darvishi**, A. Lashanizadehgan, Experimental and theoretical study of CO2 solubility under high pressure conditions in the ionic liquid 1-ethyl-3-methylimidazolium acetate, The Journal of Supercritical Fluids, 133 (2017) 195-210.

15. M.K. Salooki, S.J. Poormohammadian, **P. Darvishi**, A. Lashanizadegan Thermodynamic modeling of carbon dioxide solubility in aqueous solutions of monoethanolamine using two parameter equations of state based on non-random mixing rules, Petroleum & Coal, 59(4) (2017) 472-488.

16. **P. Darvishi**, F. Zareie-kordshouli, A. Lashanizadehgan, Failure analysis of syngas bypass line rupture in an industrial ammonia plant, Engineering Failure Analysis, 84 (2017) 59-69.

17. A.G. Kharaji, V. Madadi Avergani, **P. Darvishi**, A New Method to Enhance Separation of Acid Gas from Natural Gas by Mixed Amine Solutions, Journal of Gas Technology, 2 (2017) 67-84.

18. M. Rahbari-Sisakht, A.R. Pouranfard, **P. Darvishi**, A.F. Ismail, Biosurfactant production for enhancing the treatment of produced water and bioremediation of oily sludge under the conditions of Gachsaran oil field, Journal of Chemical Technology and Biotechnology, 92(5) (2017) 1053-1064.

19. **P. Darvishi**, F. Zareie-kordshouli, A rigorous mathematical model for online prediction of tube skin temperature in an industrial top-fired steam methane reformer, Chemical Engineering Research & Design, 126 (2017) 32-44.

20. F. Zareie-kordshouli, **P. Darvishi**, A. Lashanizadehgan, Study on the use of an imidazolium-based acetate ionic liquid for CO_2 capture from flue gas in absorber/stripper packed columns Experimental and modeling, International Journal of Greenhouse Gas Control, 70 (2018) 178-192.

21. N. Setoodeh, **P. Darvishi**, A. Lashanizadegan, Enhancing of asphaltene adsorption onto Fe_3O_4 nanoparticles coated with metal-organic framework Mil-101 (Cr) for the inhibition of asphaltene precipitation, Journal of Dispersion Science and Technology, 39(3) (2018) 452-459.

22. N. Setoodeh, **P. Darvishi**, F. Esmaeilzadeh, Adsorption of asphaltene from crude oil by applying polythiophene coating on Fe_3O_4 nanoparticles, Journal of Dispersion Science and Technology, 39(4) (2018) 578-588.

23. N. Setoodeh, **P. Darvishi**, A. Lashanizadegan, A comparative study to evaluate the performance of coated Fe_3O_4 nanoparticles for adsorption of asphaltene from crude oil in bench scale, Journal of Dispersion Science and Technology, 39(5) (2018) 711-720.

24. S.J. Poormohammadian, M.K. Salooki, **P. Darvishi**, A. Ghalambor Dezfuli Mathematical modeling of diluted species extraction from drinking water through a membrane bioreactor using stiff-spring method, Petroleum & Coal, 59(6) (2018) 1012-1024.

25. S.J. Poormohammadian, **P. Darvishi**, A. Ghalambor Dezfuli, Investigating the structural effect of electrospun nano-fibrous polymeric films on water

vapor transmission, Chinese Journal of Chemical Engineering, 27(1) (2019) 100-109.

26. F. Mahmoodi, **P. Darvishi**, B. Vaferi, Prediction of coefficients of the Langmuir adsorption isotherm using various artificial intelligence (AI) techniques, Journal of the Iranian Chemical Society, 15(12) (2018) 2747-2757.

27. R. Fazli-Abukheyli, **P. Darvishi**, Combination of axial dispersion and velocity profile in parallel tanks-in-series compartment model for prediction of residence time distribution in a wide range of non-ideal laminar flow regimes, Chemical Engineering Science, 195 (2019) 531-540.

28. S.J. Poormohammadian, P. Darvishi, A. Ghalambor Dezfuli, Enhancing natural gas dehydration performance using electrospun nanofibrous sol-gel coated mixed matrix membranes, Korean Journal of Chemical Engineering, 36(6) (2019) 914-928.

29. N. Setoodeh, **P. Darvishi**, A. Ameri, A comparative study to evaluate the performance of coated Fe_3O_4 nanoparticles for adsorption of asphaltene from crude oil in bench scale, Journal of the Serbian Chemical Society, (2019), DOI: 10.2298/JSC181105043S.

30. B. Akbari, A. Lashanizadegan, **P. Darvishi**, A.R. Pouranfard, Preparation of hydrophobic flat sheet membranes from PVDF-HFP copolymer for enhancing the oxygen permeance in nitrogen/oxygen gas mixture, Chinese Journal of Chemical Engineering, Volume 28(6) (2020) 1566-1581.

31. A.H. Zare, A. Lashanizadegan, **P. Darvishi**, M.M. Zerafat, Synthesis and characterization of NaP zeolite nanocrystals using [C12mim][Cl] ionic liquid, Chemical Papers, 74(7) (2020) 2163-2174.

B) Books

1. **P. Darvishi**, D. Mowla, S. Ayatollahi, Experimental and Theoretical Investigation of Biodegradation of a Heavy Crude Oil from South of Iran, LAMBERT Academic Publishing, 2011, Germany.

2. F. Zareie-kordshouli, **P. Darvishi**, A. Lashanizadehgan, Amine functionalized [Amim][Tf2N] ion liquid and CO_2 absorption, LAMBERT Academic Publishing, 2017, Germany.

C) Papers Presented in Conferences

1. **P. Darvishi**, D. Mowla, Molybdenite roasting in a fluidized bed reactor, Toguri symposium on the Fundamentals of metallurgical processing, Canada, 2000.

2. **P. Darvishi**, A. Alamdari, Simulation of aluminum trihydroxide crystallizer, 14 International Conference on oil, gas and petrochemical industries, 2001, Isfahan, Iran.

3. **P. Darvishi**, S. Ayatollahi, D. Mowla, Mathematical Investigation of Bio-Desulfurization of Orgao-sulfur Compounds and Hydro-treated Diesel, International Conference on environmental engineering, October 2008, Shiraz, Iran.

4. **P. Darvishi**, D. Mowla, S. Ayatollahi, A. Niazi, Biodegradation of heavy crude oil by an efficient strain ERCPPI-2, 14 International Conference on oil, gas and petrochemical industries, 2010, Tehran, Iran.

5. **P. Darvishi**, D. Mowla, S. Ayatollahi, A. Niazi, Biodegradation of heavy crude oil in wastewater by an efficient strain, ERCPPI-1, International conference on water and wastewater treatment, April 2010, Isfahan, Iran.

6. **P. Darvishi**, D. Mowla, S. Ayatollahi, Biodegradation of Gachsaran crude oil under extreme environmental conditions by an efficient bacterial consortium, ERCPPI-2, International conference on environment (ICENV 2010), December 2010, Penang, Malaysia.

7. M. Chamanchi, **P. Darvishi**, I. Jalili, B. Vaferi, A comparative experimental study of the removal of heavy metals using low cost natural adsorbents and commercial activated carbon, The 2nd International

Chemical and Environmental Engineering, November 2011, Kuala Lumpur, Malaysia.

8. **P. Darvishi**, D. Mowla, S. Ayatollahi, A. Niazi, Experimental and theoretical investigation of biodegradation of heavy crude oil in contaminated water, 20th world petroleum congress, December 2011, Doha, Qatar.

9. **P. Darvishi**, D. Mowla, Application of a membrane bioreactor for treatment of crude oil contaminated wastewater with high salinity, 2th National Congress on Wastewater Treatment and Management, January 2012, Tehran, Iran.

10. **P. Darvishi**, B. Vaferi, V. Gitifar, D. Mowla, Modeling and analysis of thermal conductivity of sandstone at high pressure and temperature using optimal artificial neural networks, the first international Conference of oil, gas, petrochemical and gas plant, June 2012, Tehran, Iran.

Computer Software

A) Chemical Engineering Software

- Aspen Plus, Aspen Dynamics, Aspen Split, Aspen Bjac, Aspen Icarus, etc.
- HYSYS
- CHEMCAD
- PIPESYS
- Pipe Flow Expert
- PDMS

B) General Software

- MATLAB Programming, Application and toolboxes
- Fortran, Visual Basic, C++ Programming
- Mathcad
- Microsoft Office (Word, Excel, Power point, …)

Certificates

- Shell Global Solutions International Gas Processing Seminar, 2006, Tehran, Iran.

- Plant Maintenance Planning and Scheduling, EFI International Pty Ltd Company, 2006, Mashahr, Iran.

- Safety, Piping, Equipments (Compressors, Pumps, Boilers …), Processes control, Industrial wastewater treatment, etc., 2001-2003, Shiraz Petrochemical Complex, Shiraz, Iran.

Lectures

A) Workshop

- Applications of Aspen Plus and Hysys in oil, gas and petrochemical industries, 2009, Shiraz, Iran.
- Environmental Issues, Shiraz University, Shiraz, Iran, 2009.
- Applications of biotechnology in oil, gas and petrochemical industries, 2011, Yasouj University, Yasouj, Iran.

B) Lesson

- Computer Programming, Shiraz University, 2006.
- Environmental Engineering, Shiraz University, 2008-2009.
- Mass Transfer, Shiraz University, 2009.
- Applied Mathematics for chemical engineering, Yasouj University, 2006 - present.
- Petroleum Refining, Yasouj University, 2006 - present.
- Gas Processes, Yasouj University, 2006 - present.
- Unit Operations, Yasouj University, 2006 - present.
- Multi-component Distillation, Yasouj University, 2014 - present.
- Mathematical Engineering, Yasouj University, 2006 - present.
- Basic Principles and Calculations in Chemical Engineering, Yasouj University, 2006 - present.

- Chemical Engineering Reactions, Yasouj University, 2011 - present.
- Advanced Chemical Engineering Reactions, Yasouj University, 2012.
- Basic Principles of Petroleum Engineering, Yasouj University, 2006 - present.
- Plant Design and Economics, Yasouj University, 2006 - present.
- Process System Analysis and Control, Islamic Azad University, Gachsaran Branch, 2004-2006.
- Mathematical Engineering, Islamic Azad University, Gachsaran Branch, 2004-2006.
- Heat Transfer, Islamic Azad University, Gachsaran Branch, 2004-2006.
- Unit Operations, Islamic Azad University, Gachsaran Branch, 2004-2006.
- Introduction to Chemical Engineering, Islamic Azad University, Gachsaran Branch, 2004-2006.
- Fluid Mechanics, Islamic Azad University, Gachsaran Branch, 2004-2006.
- Applied Mathematics for chemical engineering, University of Applied Science, Pasargad Branch, 2006-2010.
- Process System Analysis and Control, University of Applied Science, Pasargad Branch, 2006-2010.
- Heat Transfer, University of Applied Science, Pasargad Branch, 2006-2010.
- Unit Operations, University of Applied Science, Pasargad Branch, 2006-2010.
- Fluid Mechanics, University of Applied Science, Pasargad Branch, 2006-2010.
- Applied Mathematics, University of Applied Science, Pasargad Branch, 2006-2010.
- Basic Principles and Calculations in Chemical Engineering, University of Applied Science, Pasargad Branch, 2006-2010.
- Chemical Engineering Reactions, University of Applied Science, Pasargad Branch, 2006-2010.
- Mass Transfer, University of Applied Science, Pasargad Branch, 2006-2010.
- Industrial Wastewater Treatment, University of Applied Science, Pasargad Branch, 2006-2010.
- Training of HYSYS software (Steady State Mode), University of Applied Science, Pasargad Branch, 2006-2010.
- Training of HYSYS software (Dynamics Mode), University of Applied Science, Pasargad Branch, 2006-2010.
- Training of ASPEN PLUS software (Steady State Mode), University of Applied Science, Pasargad Branch, 2006-2010.
- Training of ASPEN PLUS software (Dynamics Mode), University of Applied Science, Pasargad Branch, 2006-2010.
- Training of HYSYS software (Steady State Mode), Dibagaran Educational Institute, 2006-Present.

- Training of HYSYS software (Dynamics Mode), Dibagaran Educational Institute, 2006-Present.
- Training of ASPEN PLUS software (Steady State Mode), Dibagaran Educational Institute, 2006-Present.
- Training of ASPEN PLUS software (Dynamics Mode), Dibagaran Educational Institute, 2006-Present.

References:

Dr. D. Mowla, Professor, School of Chemical and Petroleum Engineering, Shiraz University, Shiraz, Iran
Email: dmowla@shirazu.ac.ir

Dr. Sh. Ayatollahi, Professor, School of Chemical and Petroleum Engineering, Shiraz University, Shiraz, Iran
Email: dmowla@shirazu.ac.ir

Dr. A. Niazi, Associated Professor, Institute of Biotechnology, Shiraz University, Shiraz, Iran
Email: niazi@shirzau.ac.ir