

## CURRICULUM VITAE

**Surname:** OMIDKHAH NASRIN

**First Name:** MOHAMMADREZA

**Present Employment:** Professor,  
Chemical Engineering Department  
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**Date of Birth:** 10/01/58

**Place of Birth:** Tehran, Iran

**Marital Status:** Married with two children

### **Education:**

1986 - 1990, Ph.D. in Chemical Engineering, UMIST, Manchester, UK

1983 - 1985, M.Sc. in Chemical Engineering, Wayne State Univ. Michigan, USA

1975 - 1982, B.Sc. in Chemical Engineering, Amir Kabir Univ. Tehran

**Title of Ph.D. Thesis:** " Optimising Reaction - Separation Systems Through  
Improved Understanding of Their Interactions"

### **Employments:**

2010 - Present, Professor, Tarbiat Modarres University, Tehran

2013 - Present, President of Chemistry and Chemical Engineering Research Center of Iran

2003 - 2010, Associate Professor, Tarbiat Modarres University, Tehran

1990 - 2003, Assistant Professor, Tarbiat Modarres University, Tehran

2007 - 2010, Director of Research & Technology Department, National Iranian Oil  
Refining and Distribution Company

1999 - 2007, General Manager of Technology Development Plan, Ministry of  
Industries and Mines, Tehran

1998 - 1999, Sabbatical leave, UMIST, Manchester, UK

1997 -1998, Director of international affairs of Institute for International Energy  
Studies (IIES), Tehran

1994 -1995, Director General of UNIDO office in Iran

1993 -1994, Deputy minister of industry in research and training, Tehran

1992 -1993, Vice Chancellor in academic affairs, K.N. Toosi Univ. of Technology

1991 - 1992, Head of Technical Section of National Iranian Oil Company (NIOC)  
Management Information & Computer Center, Tehran

### **Honoree Engagements:**

President of IChE (Iranian Association of Chemical Engineering), 2010 – Present  
Member of editorial board of Petroleum Research Journal, 2009 – Present  
Member of editorial board of Farayandno Journal, 2009 - 2011  
Member of editorial board of Iranian Journal of Chemical Engineering, 2008 - Present  
Member of editorial board of Iranian Energy Economics Journal, 1995 - Present  
Member of editorial board of Iranian journal of Industry & Development, 1995 – 1999  
Advisor to the minister of Industry, 1994 – 1996  
Consultant to National Iranian Petrochemical Company (NIPC), 1991 -1996  
Consultant to National Iranian Oil Company (NIOC), 1990 – 1995

### **Professional Memberships:**

Member of IChE (Iranian Association of Chemical Engineering)  
Member of IPI (Iranian Petroleum Institute)  
Member of Gas Engineering Association  
Member of Energy Association  
Member of IAEE (Iran Association for Energy Economics)  
Member of the board of IAEE, 1995 - 1997, 1999 - 2001  
Member of the World Energy Council (WEC), National Energy Committee of Iran  
Chairman of the board of TPI, (Technology Park of Iran), 1997 - 1999  
Member of the board of TPI, (Technology Park of Iran), 1994 - 1997

### **Research Area:**

Process synthesis and optimization, Process integration-Pinch Technology,  
Modeling and simulation, Process heat recovery systems, Energy management,  
Membrane synthesis and characterization, Plasma technology,

### **Courses Taught:**

Conceptual Design of Chemical Processes,  
Process Integration,  
Heat Transfer,  
Advanced Optimization,  
Plant Design & Economics,  
Computer Aided Design,  
Experimental Design & Statistical Analysis,  
Advanced Distillation,  
Unit Operations

### Peer Reviewed Published papers:

1. Mohammadi A, **Omidkhah MR**, Karimzadeh R, Haghtalab A, “Experimental Investigation and Thermodynamic Modeling of Equilibria in the Quinary System Naphtha Cut, Sulfolane, and Water”, *Journal of Separation Science and Engineering* 15 (2), 2024, 1-16.
2. Gharibshahi R, **Omidkhah MR**, Jafari A, “Sandpack flooding of microwave absorbent nanofluids under electromagnetic radiation: an experimental study”, *Journal of Petroleum Exploration and Production Technology*, 2024, In press.
3. Shirinia M, Abdollahi M, **Omidkhah MR**, “Effect of vinyl acetate/dibutyl maleate copolymers on gas transport properties of poly (ethylene oxide-b-amide 6) membranes: a comprehensive study on permeability, diffusivity solubility, and permselectivity of carbon dioxide”, *Iranian Polymer Journal*, 2024, In press.
4. Tohidi Z, Jafari A, **Omidkhah MR**, “Janus Silica Nanoparticles at Three-Phase Interface of Oil–Calcite–Electrolyte Water: Molecular Dynamics Simulation”, *Korean Journal of Chemical Engineering* 41 (4), 2024, 1077-1092.
5. Mousavi YS, Akbari A, **Omidkhah MR**, Safari P, “Formulated Mn-promoted SAPO-34/kaolin/alumina sol micro-size catalyst with a superior performance for methanol to light olefins conversion in a fluidized bed reactor”, *Journal of Industrial and Engineering Chemistry*, 129, 2024, 403-412.
6. Seifi MH, Sharifzadeh M, Ghorbani M, **Omidkhah MR**, “Study on synthesis of doped polyaniline with alumina and its anticorrosion properties as an additive in paint coating”, *Iranian Journal of Chemistry and Chemical Engineering*, Vol 42 (10), 2023, 3257-3266.
7. Naseri M, **Omidkhah MR**, “Optimizing the fabrication conditions of monolithic mullite whisker membrane from kaolin and bauxite using the Taguchi method”, *Ceramics International* 49 (14), 2023, 23612-23626.
8. Mohammadi A, **Omidkhah MR**, Karimzadeh R, Haghtalab A, “Optimization of Extractive Pretreatment of Naphtha Cracker Feedstock Using Response Surface Methodology”, *Journal of Separation Science and Engineering* 15 (1), 2023, 55-69.
9. Mohammadi A, **Omidkhah MR**, Karimzadeh R, Haghtalab A, “Extractive Dearomatization of Naphtha Cut using 3-Methyl-N-Butylpyridinium Dicyanimide+ Sulfolane Mixed Solvent” *Journal of Separation Science and Engineering* 15 (1), 2023, 70-89.
10. Mohammadi A, **Omidkhah MR**, Karimzadeh R, Haghtalab A, “Experimental Investigation and Thermodynamic Modeling of Equilibria in the Quinary System Naphtha Cut, Sulfolane, and Water”, *Journal of Separation Science and Engineering* In Press.
11. Rashidian SH, **Omidkhah MR**, Zamani Pedram M, Hoseinzadeh S, “Study of the physicochemical and transport performance of neat Matrimid 5218 membrane with nanoparticles: A molecular dynamics simulation”, *Engineering Analysis with Boundary Elements* 150, 2023, 642-661.
12. Hosseini SR, **Omidkhah MR**, Lighvan ZM, Norouzbahari S, Ghadimi A, “Synthesis, characterization, and gas adsorption performance of an efficient hierarchical ZIF-11@ ZIF-8 core–shell metal–organic framework (MOF)”, *Separation and Purification Technology* 307, 2023, 122679.

13. Varae M, Honarvar M, Eikani MH, **Omidkhah MR**, Mooraki N, “Optimized Purification of Free Amino Acids from Molasses by Nanofiltration Membrane”, *Journal of Food Biosciences and Technology* 13 (1), 2023, 1-22.
14. Hamedi M, Omidkhah MR, Sadrameli SM, Khoshgoftar Manesh MH, “Exploring the improvement potentials in an existing industrial olefin plant through advanced exergy-based analyses”, *Journal of Cleaner Production* 380, 2022, 134927.
15. Nikookar M, Omidkhah MR, Pazuki GR, Mohammadi AH, “An insight into molecular weight distributions of asphaltene and asphalt using Gel Permeation Chromatography”, *Journal of Molecular Liquids*, 362, 2022, 119736.
16. Gharibshahi R, **Omidkhah MR**, Jafari A, Mehrooz N, “Parametric optimization of in-situ heavy oil upgrading using simultaneous microwave radiation and magnetic nanohybrids via Taguchi approach”, *Fuel*, 325, 2022, 124717.
17. Gharibshahi R, **Omidkhah MR**, Jafari A, Fakhroueian Z, “Experimental investigation of nanofluid injection assisted microwave radiation for enhanced heavy oil recovery in a micromodel system”, *Korean Journal of Chemical Engineering*, 39 (3), 2022, 562-575.
18. Sabet SA, **Omidkhah MR**, Jafari A, “Viscosity reduction of extra-heavy crude oil using nanocatalysts”, *Korean Journal of Chemical Engineering*, 39 (5), 2022, 1207–1214.
19. Tohidi Z, Teimouri A, Jafari A, Gharibshahi R, **Omidkhah MR**, “Application of Janus nanoparticles in enhanced oil recovery processes: Current status and future opportunities”, *Journal of Petroleum Science and Engineering*, 208, 2022, 109602.
20. Hamedi M, **Omidkhah MR**, Sadrameli SM, K Manesh M H, “Exergetic, exergoeconomic, and exergoenvironmental analyses of an existing industrial olefin plant”, *Sustainable Energy Technologies and Assessments*, 52, 2022, 102175.
21. Asleshirin S, Mazaheri H, **Omidkhah MR**, Hassani Joshaghani A, “Investigation of Thermophysical Properties of Io Nanofluids Containing Multi-Walled Carbon Nanotubes and Graphene”, *Iran. J. Chem. Chem. Eng.*, 2022, Vol 40 (2).
22. Bashiri N, **Omidkhah MR**, Godini H, “Direct conversion of CO<sub>2</sub> to light olefins over FeCo/XK-YAL<sub>2</sub>O<sub>3</sub> (X = La, Mn, Zn) catalyst via hydrogenation reaction”, *Research on Chemical Intermediates*, 47, 2021, 5267–5289.
23. Ghasemi goudarzi P, Hojjati MR, **Omidkhah MR**, Tavallali MS, “Estimation of Kinetic Parameters and Simulation of Methylacetylene and Propadiene Liquid-Phase Selective Hydrogenation Reactor Considering the Catalyst Deactivation”, *Industrial & Engineering Chemistry Research*, 2021, DOI 10.1021/acs.iecr.1c01593.
24. Sabet SA., **Omidkhah MR**, Jafari A, “Methods for Viscosity Reduction of Heavy Crude Oil with Focus on Nano Catalysts: A Review Study”, *Iranian Chemical Engineering Journal*, 19(112), 2021, 74-85.
25. Davari S., **Omidkhah MR**, Salari S, “Role of polydopamine in the enhancement of binding stability of TiO<sub>2</sub> nanoparticles on polyethersulfone ultrafiltration membrane”, *Colloids and Surfaces A: Physicochemical and Engineering Aspects*, 622, 2021, 126694.
26. Abdollahi M, **Omidkhah MR**, Ahmadi J, Keshtkar A, Akbari A, “Fabrication of an Efficient Structured Packing for Hard Vacuum Distillation Processes and Calibration by Carbon Tetrachloride-Benzene Mixture”, *Chemical Engineering and Processing-Process Intensification*, 160, 2021, 108288.

27. Tohidi Z, Jafari A, **Omidkhah MR**, “Electrolyte Nanofluid Performance on Oil Detachment from an Oil-Wetted Carbonate Surface: Water Channel Formation Using Molecular Dynamics Simulation”, *Journal of Petroleum Science and Engineering*, 196, 2021, 108006.
28. Asadpoor M, Arjmand M, Farhadian M, **Omidkhah MR**, Zinatizadeh AA, “Optimization and modeling of the photocatalytic activities of a novel visible driven  $\text{CNT}/\text{TiO}_2/\text{BiOBr}/\text{Bi}_2\text{S}_3$  nanocomposite”, *Desalination and Water Treatment*, 209, 2021, 219–229.
29. Gharedaghi M, **Omidkhah MR**, Abdollahi S, Ghadimi A, “An Investigation on Gas Transport Properties of Elvaloy4170/[Emim][Tf2N] Hybrid Membranes for Efficient  $\text{CO}_2/\text{CH}_4$  Separation” *Journal of Membrane Science and Research*, 7, 2021, 185-195.
30. Asadpoor M, Arjmand M, Farhadian M, **Omidkhah MR**, Zinatizadeh AA, “Synthesis of a new visible driven photocatalyst  $\text{TiO}_2/\text{a-CNT}/\text{b-BiOBr}/\text{c-Bi}_2\text{S}_3$  and its application for RB19 removal: modeling and process optimization”, *Chemical Papers*, 75(3), 2021, 1267–1278.
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32. Miri S, **Omidkhah MR**, Ebadi Amooghin A, Matsuura T, “Membrane-based gas separation accelerated by quaternary mixed matrix membranes”, *Journal of Natural Gas Science and Engineering*, 84, 2020, 103655.
33. Jafarinasab M, Akbari A, **Omidkhah MR**, Shakeri M, “An Efficient Co-Based Metal-Organic Framework Nanocrystal (Co-ZIF-67) for Adsorptive Desulfurization of Dibenzothiophene: Impact of the Preparation Approach on Structure Tuning”, *Energy and Fuels*, 34, 2020, 12779-12791.
34. Nadeali A, Kalantari S, Yarmohammadi M, **Omidkhah MR**, Ebadi Amooghin A, Zamani Pedram M, “ $\text{CO}_2$  Separation Properties of a Ternary Mixed-Matrix Membrane Using Ultraselective Synthesized Macrocyclic Organic Compounds”, *ACS Sustainable Chemistry and Engineering*, 8, 34, 2020, 12775-12787.
35. Izadmehr N, Mansourpanah Y, Ulbricht M, Rahimpour A, **Omidkhah MR**, “TETA-anchored graphene oxide enhanced polyamide thin film nanofiltration membrane for water purification; performance and antifouling properties”, *Journal of Environmental Management*, 276, 2020, 111299.
36. Gharibshahi R, **Omidkhah MR**, Jafari A, Fakhroueian Z, “Hybridization of superparamagnetic  $\text{Fe}_3\text{O}_4$  nanoparticles with MWCNTs and effect of surface modification on electromagnetic heating process efficiency: A microfluidics enhanced oil recovery study”, *Fuel*, 282, 2020, 118603.
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38. Pourziad S, **Omidkhah MR**, “Improved antifouling and self-cleaning ability of PVDF ultrafiltration membrane grafted with polymer brushes for oily water treatment”, *Journal of Industrial and Engineering Chemistry*, 83, 2020, 401-408.

39. Akbari A, Chamack M, **Omidkhah MR**, “Reverse microemulsion synthesis of polyoxometalatebased heterogeneous hybrid catalysts for oxidative desulfurization” *Journal of Materials Science*, 55 (15), 2020, 6513–6524.
40. Kalantari S, **Omidkhah MR**, Ebadi Amooghin A, “Preparation of Mixed-Matrix membranes containing Iron Nickel Zinc Oxide Nanoparticles for Separation of Carbon Dioxide, Nitrogen, and Methane”, *Applied Research in Chemical – Polymer Engineering*, 4 (1), 2020, 67-90.
41. Haji Andevary H , Akbari A, Rajabi Z , **Omidkhah MR**, “Towards a room temperature oxidative desulfurization of refractory 2 compounds over 1-octyl-3-methylimidazolium tetrachloroferrates/silica gel: the beneficial effects of immobilization”, *Process Safety and Environmental Protection*, 136, 2020, 343-352.
42. Kalantari S, **Omidkhah MR**, Ebadi Amooghin A, Matsuura T, “ Superior interfacial design in ternary mixed matrix membranes to enhance the CO<sub>2</sub> separation performance”, *Applied Materials Today*, 18, 2020, 100491, 1-17.
43. Raouf M, Abedini R, **Omidkhah MR**, Nezhadmoghadam E, “A favored CO<sub>2</sub> separation over light gasses using mixed matrix membrane comprising Polysulfone/Polyethylene Glycol and Graphene Hydroxyl nanoparticles”, *Process Safety and Environmental Protection*, 133, 2020, 394-407.
44. Mokhtari B, Akbari A, **Omidkhah MR**, “Superior Deep Desulfurization of Real Diesel over MoO<sub>3</sub>/Silica Gel as an Efficient Catalyst for Oxidation of Refractory Compounds”, *Energy & Fuels* 33, 2019, 7276-7286.
45. Nadeali A, Zamani Pedram M, **Omidkhah MR**, Yarmohammadi M, “A Promising Performance for Efficient CO<sub>2</sub> Separation with the p-tert-Butylcalix[4]arene/Pebax-1657 Mixed Matrix Membrane”, *ACS Sustainable Chemistry and Engineering*, 7, 23, 2019, 19015-19026.
46. Sanaeepur H, Ebadi Amooghin A, Kargari A, **Omidkhah MR**, Fauzi Ismail A, Ramakrishna S, “Interior Modification of Nano-Porous Fillers to Fabricate High Performance Mixed Matrix Membranes”, *Iranian Journal of Chemical Engineering*, 16 (2), 2019, 70-94.
47. Rahmani S, Mortaheb HR, **Omidkhah MR**, Khodadadi Dizaji A, “Investigation on Performance of PDMS-Graphene/PES Hybrid Membrane for Pervaporative Separation of Phenol from Aqueous Streams”, *Polymer – Plastics Technology and Engineering*, 58 (3), 2019, 305-315.
48. Haji Andevary H, Akbari A, **Omidkhah MR**, “High efficient and selective oxidative desulfurization of diesel fuel using dual-function [Omim]FeCl<sub>4</sub> as catalyst/extractant”, *Fuel Processing Technology* 185, 2019, 8–17.
49. Heidari M, Hosseini SS, **Omidkhah MR**, Ghadimi A, “Synthesis and fabrication of adsorptive carbon nanoparticles (ACNs)/PDMS mixed matrix membranes for efficient CO<sub>2</sub>/CH<sub>4</sub> and C<sub>3</sub>H<sub>8</sub>/CH<sub>4</sub> separation”, *Separation and Purification Technology* 209, 2019, 503–515.
50. Akbari A, **Omidkhah MR**, “Silica-zirconia membrane supported on modified alumina for hydrogen production in steam methane reforming unit”, *International Journal of Hydrogen Energy*, 44 (31), 2019, 16698-16706.

51. Azami H, **Omidkhah MR**, “Modeling and optimization of characterization of nanostructure anodized aluminium oxide membranes”, *Journal of the Iranian Chemical Society*, 16 (5), 2019, 985–997.
52. Pourziad S, **Omidkhah MR**, Abdollahi M, “Preparation of Fouling-Resistant and Self-Cleaning PVDF Membrane via Surface-Initiated Atom Transfer Radical Polymerization for Emulsified Oil/Water Separation”, *The Canadian Journal of Chemical Engineering*, 97, S1, 2019, 1581-1588.
53. Varaeaa M, Honarvar M, Eikani MH, **Omidkhah MR**, Moraki N, “Supercritical fluid extraction of free amino acids from sugar beet and sugar cane molasses”, *The Journal of Supercritical Fluids* 144, 2019, 48–55.
54. Varaeaa M, Honarvar M, Eikani MH, **Omidkhah MR**, Moraki N, “Effect of Storage Temperature and Light on the Freeze-Dried Amino Acids from Sugar Beet and Sugar Cane Molasses”, *Journal of Food Biosciences and Technology*, 9(2), 2019, 51-62.
55. **Omidkhah MR**, Azami H, Ghaheri L, “Biofouling Behavior on Forward Osmosis Using Vertically Aligned CNT Membrane on Alumina”, *Iranian Journal of Chemical Engineering*, 16 (2), 2019, 1-13.
56. Ghasemi Estahbanati E, **Omidkhah MR**, Ebadi Amooghin A, “Preparation of Mixed Matrix Membranes Containing Polyether Block Amide and Silver Nanoparticles to Evaluate the Permeability of CO<sub>2</sub>, N<sub>2</sub> and CH<sub>4</sub> Gases, *Petroleum Research*, 29 (104), 2019, 21-24.
57. Mokhtari B, Akbari A, **Omidkhah MR**, “Investigation of catalytic oxidative desulfurization of diesel fuel using Mo catalyst supported on  $\gamma$ -Al<sub>2</sub>O<sub>3</sub>”, *Petroleum Research*, 29 (107), 2019, 22-36.
58. Ferdowsi M, Yazdani F, **Omidkhah MR**, Keshavarz MH, “A General Relationship between Electric Spark and Impact Sensitivities of Nitroaromatics and Nitramines”, *Journal of Inorganic and General Chemistry, ZAAC*, 644(23), 2018, 1623-1628.
59. Vaez M, Alijani S, **Omidkhah MR**, Zarringhaham Moghaddam A, “Synthesis, characterization and optimization of N-TiO<sub>2</sub>/PANI nanocomposite for photodegradation of acid dye under visible light”, *Polymer Composites* 39(12), 2018, 4605-4616.
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63. Ferdowsi M, Yazdani F, **Omidkhah MR**, Keshavarz MH, “Reliable Prediction of Shock Sensitivity of Energetic Compounds based on Small-scale Gap Test through Their Electric Spark Sensitivity”, *Journal of Inorganic and General Chemistry, ZAAC*, 644 (16), 2018, 888-892.

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69. Azami H, **Omidkhah MR**, “Preparation, Characterization, and Application of Vertically Aligned CNT Sheets through Template Assisted Pyrolysis of PBI-Kapton” *The Canadian Journal of Chemical Engineering*, 95, 2017, 307-318.
70. Chehrizi E, Sharif A, **Omidkhah MR**, Karimi M, “Correction to Modeling the Effects of Interfacial Characteristics on Gas Permeation Behavior of Nanotube-Mixed Matrix Membranes”, *ACS Applied Materials and Interfaces*, 9 (42), 2017, 37321-37331.
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#### **Reviewed Papers presented in conferences:**

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