

CURRICULUM VITAE

Surname: OMIDKHAH NASRIN

First Name: MOHAMMADREZA

Present Employment: Professor,

Chemical Engineering Department

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Date of Birth: 10th Jan. 1958

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: "Optimizing Reaction - Separation Systems Through
Improved Understanding of Their Interactions"

• Employments:

2010 - Present, Professor, Tarbiat Modarres University, Tehran

2013 - 2022, 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 IACHe (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 Iranian Academy of Science (Energy and Environment Branch)

Member of IACChE (Iranian Association of Chemical Engineers)

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. Beygi Harchegani A, Akbari A, **Omidkhah MR**, Asadi Kafshgari L, "Spherical and Hierarchically Porous Mo@ZSM-5/Kaolin composite catalyst Fabricated via solid grinding and Spray-Drying for efficient oxidative desulfurization", *Journal of Industrial and Engineering Chemistry*, 153, 2026, 488–499.
2. Moharrami M, Salehi Maleh M, **Omidkhah MR**, "A review on catalytic ceramic membranes for pharmaceutical wastewater treatment: Integration with advanced oxidation processes", *Journal of Water Process Engineering*, 78, 2025, 108726.
3. Morsali S, **Omidkhah MR**, Moharrami M, "Synthesis and characterization of modified alumina membrane with carbon nano-tubes for separation of ethanol from water using sweeping gas membrane distillation", *RSC Advances*, 15, 2025, 24102.
4. Shokri Z, Mousavi SM, **Omidkhah MR**, "Advancing sustainable lithium recovery from spent laptop lithium-ion battery cathodes through high pulp density bioleaching followed by Li_2CO_3 precipitation: process intensification and environmental insights", *Journal of Environmental Chemical Engineering*, 13, 2025, 117014.
5. Moharrami M, **Omidkhah MR**, Salehi Maleh M, "Optimization of extrusion parameters for low-cost alumina–kaolin ceramic membranes via CCD", *Journal of Materials Research and Technology*, 36, 2025, 6661–6678.
6. Beiranvand A, **Omidkhah MR**, Moharrami M, Davari S, Mahdavi HR, "Characterization and optimization of electrodialysis with bipolar membranes with improved alkaline stability for phenol recovery from petroleum wastewater", *Chemical Engineering Journal Advances*, 22, 2025, 100756.
7. Salehi AA, **Omidkhah MR**, Ebadi Amooghin A, Moftakhari Sharifzadeh MM, "Improved gas separation performance of PMMA/Matrimid@5218/graphene oxide (GO) mixed matrix membranes", *Journal of CO2 Utilization*, 91, 2025, 103012.
8. Asadpoor M, Fakharzadeh M, Fazljoo SE, Ardjmand M, Farhadian M, **Omidkhah MR**, Zinatizadeh AA, "Photo-electrocatalytic degradation of azo dye and evaluation of the electricity generation by using a visible light active CNT-TiO₂-BiOBr-Bi₂S₃ electrode", *Chemical Papers*, 79, 2025, 3739–3752.
9. Haji Andevary H, Akbari A, Safari P, **Omidkhah MR**, Sharifi A, Mirzaei M, "Fabricated [Omim]FeCl₄@Al₂O₃ as an Efficient Fenton-like Catalyst for Solvent-Free and High Selective Oxidative Desulfurization", *Energy Fuels*, 39, 2025, 1042–1051.
10. Hosseinkhani A, Safari P, **Omidkhah MR**, Ebadi Amooghin A, Norouzi A M, "A high-efficiency Pebax® 1657-based mixed matrix membrane containing molybdenum oxide particles for enhanced CO₂/N₂ separation", *International Journal of Environmental Science and Technology*, 22, 2025, 6847–6862.
11. Kamali J, Mahmoudi Heris S, **Omidkhah MR**, Hejazi T H, "Determining the Priority of Tank Overhaul by Combining Quantitative Risk Assessment Method and Multi-Criteria Decision- Making Techniques", *Nashrieh Shimi va Mohandesi Shimi Iran*, 43(4), 2025, 229-240. (In Farsi).

12. Hosseinkhani A, **Omidkhah MR**, Ebadi Amooghin A, "Fine-tuning CO₂ separation of mixed matrix membranes by constructing efficient transport pathways through the addition of hybrid porous 2D nanosheets", *Chemical Engineering Journal Advances*, 20, 2024, 100685.
13. Naseri M, **Omidkhah MR**, Mousavi SF, "Advanced electro-assisted filtration of crude oil/water using a conductive mullite whiskers membrane", *Journal of Environmental Chemical Engineering*, 12, 2024, 114060.
14. Naseri M, **Omidkhah MR**, Mousavi SF, "A study on the efficient separation of oily water using mullite whiskers membrane through combined filtration and electrofiltration", *RSC Advances*, 14, 2024, 30245.
15. Akbari A, Haji Andevary H, **Omidkhah MR**, "Boosted Regeneration of Coked SAPO-34 Catalyst in MTO Fluidized Bed Reactor by Diluted Air at Elevated Temperatures", *Chemical Engineering and Processing-Process Intensification*, 201, 2024, 109821.
16. 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.
17. 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*, 14 (3), 2024, 853-865.
18. 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*, 33 (6), 2024, 799-814.
19. 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.
20. 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.
21. 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*, 42 (10), 2023, 3257-3266.
22. 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.
23. 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.

24. Mohammadi A, **Omidkhah MR**, Karimzadeh R, Haghtalab A, "Extractive Dearomatization of Naphtha Cut using 3-Methyl-N-Butylpyridinium Dicyanamide+ Sulfolane Mixed Solvent" *Journal of Separation Science and Engineering* 15 (1), 2023, 70-89.
25. 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.
26. 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.
27. Varaee 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.
28. Hamed 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.
29. 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.
30. 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.
31. 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.
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33. 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.
34. Hamed 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.
35. Aslshirin 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).
36. Bashiri N, **Omidkhah MR**, Godini H, "Direct conversion of CO₂ to light olefins over FeCo/XK-YAL₂O₃ (X = La, Mn, Zn) catalyst via hydrogenation reaction", *Research on Chemical Intermediates*, 47, 2021, 5267-5289.

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38. 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.
39. Davari S., **Omidkhah MR**, Salari S, "Role of polydopamine in the enhancement of binding stability of TiO₂ nanoparticles on polyethersulfone ultrafiltration membrane", *Colloids and Surfaces A: Physicochemical and Engineering Aspects*, 622, 2021, 126694.
40. 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.
41. 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.
42. Asadpoor M, Arjmand M, Farhadian M, **Omidkhah MR**, Zinatizadeh AA, "Optimization and modeling of the photocatalytic activities of a novel visible driven cnt/tio₂/biobr/bi₂s₃ nanocomposite", *Desalination and Water Treatment*, 209, 2021, 219–229.
43. Gharedaghi M, **Omidkhah MR**, Abdollahi S, Ghadimi A, "An Investigation on Gas Transport Properties of Elvaloy4170/[Emim][Tf₂N] Hybrid Membranes for Efficient CO₂/CH₄ Separation" *Journal of Membrane Science and Research*, 7, 2021, 185-195.
44. Asadpoor M, Ardjmand M, Farhadian M, **Omidkhah MR**, Zinatizadeh AA, "Synthesis of a new visible driven photocatalyst TiO₂/ a-CNT/b-BiOBr/c-Bi₂S₃ and its application for RB19 removal: modeling and process optimization", *Chemical Papers*, 75(3), 2021, 1267–1278.
45. Aslshirin S, Mazaheri H, **Omidkhah MR**, Hassani Joshaghani A, "Experimental investigation of the effect of Al₂O₃ nanoparticles with spherical and rod-shaped morphologies on the thermophysical properties of ionic nanofluids", *Scientia Iranica C*, 28(3), 2021, 1452-1463.
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47. 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.

48. Nadeali A, kalantari S, Yarmohammadi M, **Omidkhah MR**, Ebadi Amooghin A, Zamani Pedram M, "CO₂ Separation Properties of a Ternary Mixed-Matrix Membrane Using Ultrasensitive Synthesized Macrocyclic Organic Compounds", *ACS Sustainable Chemistry and Engineering*, 8, 34, 2020, 12775-12787.
49. 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.
50. Gharibshahi R, **Omidkhah MR**, Jafari A, Fakhroueian Z, "Hybridization of superparamagnetic Fe₃O₄ nanoparticles with MWCNTs and effect of surface modification on electromagnetic heating process efficiency: A microfluidics enhanced oil recovery study", *Fuel*, 282, 2020, 118603.
51. Shirinia M, Abdollahi M, **Omidkhah MR**, "Simultaneous enhancement of CO₂ permeability and CO₂/CH₄ and CO₂/N₂ selectivity via incorporating dense, rubbery and CO₂-philic vinyl acetate based copolymers into poly(ethylene oxide-b-amide 6) membranes", *Reactive and Functional Polymers*, 154, 2020, **104673**.
52. 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.
53. 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.
54. 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.
55. 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.
56. Kalantari S, **Omidkhah MR**, Ebadi Amooghin A, Matsuura T, "Superior interfacial design in ternary mixed matrix membranes to enhance the CO₂ separation performance", *Applied Materials Today*, 18, 2020, 100491, 1-17.
57. Raouf M, Abedini R, **Omidkhah MR**, Nezhadmoghadam E, "A favored CO₂ 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.
58. Mokhtari B, Akbari A, **Omidkhah MR**, "Superior Deep Desulfurization of Real Diesel over MoO₃/Silica Gel as an Efficient Catalyst for Oxidation of Refractory Compounds", *Energy & Fuels* 33, 2019, 7276-7286.
59. Nadeali A, Zamani Pedram M, **Omidkhah MR**, Yarmohammadi M, "A Promising Performance for Efficient CO₂ Separation with the p-tert-Butylcalix[4]arene/Pebax-1657 Mixed Matrix Membrane", *ACS Sustainable Chemistry and Engineering*, 7, 23, 2019, 19015-19026.

60. 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.
61. 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.
62. Haji Andevary H, Akbari A, **Omidkhah MR**, "High efficient and selective oxidative desulfurization of diesel fuel using dual-function [Omim]FeCl₄ as catalyst/extractant", *Fuel Processing Technology* 185, 2019, 8–17.
63. Heidari M, Hosseini SS, **Omidkhah MR**, Ghadimi A, "Synthesis and fabrication of adsorptive carbon nanoparticles (ACNs)/PDMS mixed matrix membranes for efficient CO₂/CH₄ and C₃H₈/CH₄ separation", *Separation and Purification Technology* 209, 2019, 503–515.
64. 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.
65. 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.
66. 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.
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68. 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.
69. **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.
70. 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 CO₂, N₂ and CH₄ Gases, *Petroleum Research*, 29 (104), 2019, 21-24.
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72. 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.

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74. Sanaeepur H, Ebadi Amooghin A, Khademian E, Kargari A, **Omidkhah MR**, "Gas permeation modeling of mixed matrix membranes: Adsorption isotherms and permeability models", *Polymer Composites* 39(12), 2018, 4560-4568.
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79. Nezhadmoghadam E, Pourafshari Chenar M, **Omidkhah MR**, Nezhadmoghadam A, Abedini R, "Aminosilane grafted Matrimid 5218/nano-silica mixed matrix membrane for CO₂/light gases separation", *Korean Journal of Chemical Engineering*, 35(2), 2018, 526-534.
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83. 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.
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86. Ghasemi Estahbanati E, **Omidkhah MR**, Ebadi Amooghin A, "Preparation and characterization of novel Ionic liquid/Pebax membranes for efficient CO₂/light gases separation", *Journal of Industrial and Engineering Chemistry*, 51, 2017, 77-89.
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• **Part of Reviewed Papers presented in Conferences:**

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