

Membrane Separation Technology Group



2015 Team

(LTR): S.M. Hosseininejad, A. Soleimani, R. Jalili, M. Gilani, K. Shafiei, J. Aminian, S. S. Hosseini, A. Nazif, M. Mousavi, S. Najari, S. Raveshian, S. Khosravifard, M. Heidari



2014 Team

Back row (LTR): A. Soleimani, K. Shafiei, E. Mehralain, M. Mousavi, S. Raveshian, S. Khosravifard
Front row (LTR): J. Aminian, R. Jalili, S. S. Hosseini, S. Alibakhshi, A. Nazif, S. Najari



2013 Team

(LTR): N. Motavallian, M. Tamaddondar, S. Najari, S. Alibakhshi, H. Moteshafi, M. Heidari,
S. S. Hosseini, K. Shafiei, A. Alaei, E. Mehralain, M. Roodashti, R. Jalili, J. Aminian,

تدریس

Chemical Engineering Process Laboratory I, (undergraduate course)

Dept. of Chemical & Biomolecular Eng., National University of Singapore (NUS), Singapore

Semester 2, 2007-08

Fundamentals of Renewable Energy II (graduate course)

Faculty of New Sciences & Technologies, University of Tehran, Tehran, Iran

Semester 1, 2011-12

Membrane Separation Processes, (graduate course)

Dept. of Chemical Engineering, Tarbiat Modares University, Tehran, Iran

Semester 2, 2010-11

Semester 2, 2011-12

Semester 2, 2012-13

Semester 2, 2013-14

Semester 2, 2014-15

Surface Phenomena (graduate course)

Dept. of Chemical Engineering, Tarbiat Modares University, Tehran, Iran

Semester 1, 2012-13

Semester 1, 2013-14

Semester 1, 2014-15

RESEARCH INTERESTS:

Membrane Design and Formulation
Membrane Fabrication and Hollow Fiber Spinning
Membrane Process Modeling and Simulation
R&D on Membrane Processes e.g., RO, UF, NF, MF,
Surface/Interfacial Phenomena

Membranes Technology Development for Industrial Applications including:

- *Gas Separation*
- *Natural gas sweetening/dehydration,*
- *He recovery,*
- *Air Separation,*
- *Olefin /Paraffin Separation*
- *Water and waste water treatment*
- *Desalination*
- *Pervaporation*
- *Life science products*
- *Artificial organs*

Research Facilities:

Semi-Automated Casting Machines
Full featured Semi-Automated Hollow Fiber Spinning Line (Single layer & Dual Layer Spinnerets)
RO/NF/UF Testing Set-ups
Membrane Contactor Testing Set-up
Gas Permeation Cell (Pure & Mixed Gas equipped with sweep and purge streams)








Conductivity/pH/TDS Meters
Heating/Vacuum Ovens
Ultra high vacuum furnace
Ultra high vacuum pumps

Citation indices (As of 01 Oct 2015)

Link: <http://scholar.google.com/citations?user=diYBbQEAAAAAJ&hl=en>

	All	Since 2010
Citations	629	592
h-index	9	9
i10-index	9	9

PEER REVIEWED JOURNAL PAPERS

1. S.S. Hosseini, S. Taheri, A. Zadhoush, A. Mehrabani-Zeinabad, "Hydrolytic Degradation of Poly (ethylene terephthalate)", *J. Appl. Polym. Sci.*, 103 (2007) 2304-2309.  PDF
2. S.S. Hosseini, Y. Li, T.S. Chung, Y. Liu, "Enhanced gas separation performance in nanocomposite membranes using MgO nanoparticles", *J. Membr. Sci.* 302 (2007) 207-217.  PDF
3. S.S. Hosseini, M.M. Teoh, T.S. Chung, "Hydrogen separation and purification in membranes of miscible polymer blends with interpenetration networks", *Polymer*, 49 (2008) 1594-1603.  PDF
4. S.S. Hosseini, T.S. Chung, "Carbon Membranes from blends of PBI and polyimides for N₂/CH₄ and CO₂/CH₄ separation and hydrogen purification", *J. Membr. Sci.* 328 (2009) 174-185.  PDF
5. Y.C. Xiao, B.T. Low, S.S. Hosseini, T.S. Chung, D.R. Paul, "The Strategies of Molecular Architecture and Modification of Polyimide-based Membranes for CO₂ Removal from Natural Gas – A Review", *Prog. Polym. Sci.*, 34 (2009) 561-580. (**Impact Factor:22.87**)  PDF
6. S.S. Hosseini, N. Peng, T.S. Chung, "Gas separation membranes developed through integration of polymer blending and dual-layer hollow fiber spinning process for hydrogen and natural gas enrichments", *J. Membr. Sci.*, 349 (2010) 156-166.  PDF
7. S.Ü. Celik, A. Bozkurt, S.S. Hosseini, "Alternatives toward proton conductive anhydrous membranes for fuel cells: Heterocyclic protogenic solvents comprising polymer electrolytes", *Prog. Polym. Sci.*, 37 (2012) 1265-1291. (**Impact Factor:22.87**)  PDF
8. W.B. Krantz, A.R. Greenberg, E. Kujundzic, A. Yeo, S.S. Hosseini, "Evaporometry: A novel technique for determining the pore-size distribution of membranes", *J. Membr. Sci.*, 438 (2013) 153-166.
9. V. Pirouzfard, S.S. Hosseini, M.R. Omidkhan, A.Z. Moghadam, "Modeling and optimization of carbon molecular sieve membranes through statistical analysis", *Polym. Eng. Sci.*, 54 (2014) 147-157.
10. V. Pirouzfard, A.Z. Moghadam, M.R. Omidkhan, S.S. Hosseini, "Investigating the effect of dianhydride type and pyrolysis condition on the gas separation performance of membranes derived from blended polyimides through statistical analysis", *J. Ind. Eng. Chem.*, 20 (2014) 1061-1070.

11. S.S. Hosseini, H. Pahlavanzadeh, M. Tamadondar, "**Dehydration of Organic Compounds Using Poly (vinyl alcohol) Membranes in Pervaporation Process**", *Ir. Chem. Eng. J., (In Persian)* 13 (2014) No.72, pp.76-84.
12. S.S. Hosseini, M.R. Omidkhah, A.Z. Moghadam, V. Pirouzfard, W.B. Krantz, N.R. Tan, "**Enhancing the properties and gas separation performance of PBI-polyimides blend carbon molecular sieve membranes via optimization of the pyrolysis process**", *Sep. Pur. Tech.*, 122 (2014) 278-289.
13. M. A. A. Shahmirzadi, S. S. Hosseini, "**Potentials and challenges of heavy metal recovery and removal from zinc and lead industrial waste streams using membrane technology**", *Ir. J. Chem. Eng. (In Persian)* 13 (2015) No. 77, pp.91-105.
14. S.S. Hosseini, S.M. Roodashti, P.K. Kundu, N.R. Tan, "**Transport properties of asymmetric hollow fiber membrane permeators for practical applications: Mathematical Modeling For Binary Gas Mixtures**", *Canad. J. Chem. Eng.*, 93 (2015) 1275-1287.
15. M. Tamadondar, H. Pahlavanzadeh, S.S. Hosseini, G.L. Ruan, N.R. Tan "**Self-assembled polyelectrolyte surfactant nanocomposite membranes for pervaporation separation of MeOH/MTBE**", *J. Membr. Sci.*, 472 (2014) 91-101.
16. M. A. A. Shahmirzadi, S. S. Hosseini, "**Environmental aspects of brine management in seawater desalination**", *Iran Water Resources Research Journal, (In Persian)* 10 (2015) No.3,104-112.
17. M. A. A. Shahmirzadi, S. S. Hosseini, G.L. Ruan, N.R. Tan "**Tailoring PES nanofiltration membranes through systematic investigations of prominent design, fabrication and operational parameters**", *RSC Advances*, 5 (2015) 49080-49097.
18. S. Najari, S. S. Hosseini, M.R. Omidkhah, N.R. Tan "**Phenomenological modeling and analysis of gas transport in polyimide membranes for propylene/propane separation**", *RSC Advances*, 5 (2015) 47199-47215.
19. A. Zadhoush, S. S. Hosseini, S. M. Mousavi, "**The importance and the effect of rheological characteristics of polymer solutions in phase inversion process and morphology of polymeric membranes**", *Iranian J. Polym. Sci. Technol.*, In press
20. K. Shafiei Chamazkolaei, S. S. Hosseini, "**Study and investigation on the performance of membranes developed based on polysulfone for air separation**", *FarayandNo J. (In Persian)*, In press.
21. R. Jalili Palandi, S. S. Hosseini, "**Improving the characteristics and desalination performance of thin film composite reverse osmosis membranes by nanoparticles**", *Ir. J. Chem. Eng. (In Persian)*, In press.
22. S. S. Hosseini, S. Najari, , P.K. Kundu, N.R. Tan, S.M. Roodashti, "**Simulation and sensitivity analysis of transport in asymmetric hollow fiber membrane permeators for air separation**", *RSC Advances*, 5 (2015) 86359-86370.

· CONFERENCE PAPERS AND PRESENTATIONS:

1. A. Bahramian, S.S. Hosseini, A. Zadhoush, A. Mehrabani, "**Investigation of pigment distribution in masterbatches by implementation of three rheological models**", *The 4th International Seminar on Polymer Science and Technology (ISPST2005), Tehran, Iran, Sept. 2005. (Poster Session)*

2. S.S. Hosseini, T.S. Chung, "**Development of advanced membranes for gas separation applications**", Proceedings of JNC-ICMR international winter school on "Chemistry of Materials", Bangalore, India, December 2006.
3. S.S. Hosseini, A. Mehrabani-Zeinabad, A. Zadhoush, "**The effect of carrier molecular weight and pigment particle concentration on the rheological properties of suspension systems in polymeric medium**", 16th annual meeting of Nordic Rheology Society (NRC 2007), Norway, 2007.
4. S.S. Hosseini, A. Mehrabani-Zeinabad, A. Zadhoush, "**Batch Processing of Poly(ethylene terephthalate)-Based Masterbatches: The Effect of Carrier Molecular Weight and Pigment Concentration**" 6th European Congress of Chemical Engineering (ECCE 06), Copenhagen, Denmark, 2007.
5. S.S. Hosseini, Y. Li, T.S. Chung, "**Enhanced gas separation performance in polyimide-MgO mixed matrix membranes**", 6th International Membrane Science and Technology Conference (IMSTEC 07), Sydney, Australia, November 2007.
6. S.S. Hosseini, Y. Li, T.S. Chung, L. Jiang, "**Development of organic-inorganic hybrid membranes for natural gas purification and hydrogen recovery**", North American Membrane Society (NAMS) Annual Meeting, Orlando, Florida, USA, 2007. (presented at both **platform** and **poster** sessions)
7. S.S. Hosseini, T.S. Chung, "**Polymeric Materials in Membranes for Gas Separation Technology**", Marie Curie summer school on "Knowledge-based Materials", Estremoz, Portugal, 2007.
8. S.S. Hosseini, T.S. Chung, "**Tailoring Polymeric Blend Membranes for High Performance Hydrogen Separation and Purification**", GSA Symposium in Biological and Chemical Engineering, Singapore, 2007. (Awarded 3rd Prize)
9. S.S. Hosseini, T.S. Chung, "**Design and development of high performance multi-purpose gas separation membranes**", North American Membrane Society (NAMS/ICIM 2010) Annual Meeting, Washington D.C., USA, July 2010.
10. E. Kujundzic , A. Yeo , S.S. Hosseini, W.B. Krantz, A.R. Greenberg, "**Evaporometry, a Novel Technique for Characterizing Membrane Pore-Size Distribution**", North American Membrane Society (NAMS/ICIM 2010) Annual Meeting, Washington D.C., USA, July 2010.
11. W.B. Krantz, A.R. Greenberg, E. Kujundzic , A. Yeo , S.S. Hosseini, "**A Novel Technique for Characterizing Membrane Pore Size – Evaporometry**", AIChE Annual Meeting, Salt Lake City, Utah, USA, November 2010.
12. W.B. Krantz, A.R. Greenberg, E. Kujundzic , A. Yeo , S.S. Hosseini, "**Evaporometry– A Novel Method for Determining the Pore-Size Distribution of MF and UF Membranes**", AIChE Annual Meeting, Minneapolis, MN, USA, October 2011.
13. E. Rasti, M. A. Havaledar Nejad, H. AzarAbadi, S. S. Hosseini, "**Sustainable Development through Research on Membrane Technology for Mitigating Global Warming and Saving Environment**", International Cultural and Academic Meeting of Engineering Students (ICAMES 2012), Istanbul, Turkey, May 2012.

14. F. Ranjbaran, S. S. Hosseini, "**Recent Trends and Developments in Desalination Technology and Research**", International Conference on Desalination of Brackish, Sea Water and Wastewater Treatment, Tehran, Iran, 19-21 June 2012.
15. William B. Krantz, Alan R. Greenberg, Elmira Kujundzic, Adrian Yeo, S. S. Hosseini "**Recent Developments in Evaporometry for Characterizing the Pore-Size Distribution of Membranes**", AIChE Annual Meeting, Pittsburgh, PA, USA, 28 Oct.- 2 Nov. 2012.
16. S. S. Hosseini, W. B. Krantz, S. M. Roodashti, "**A Comprehensive Model for Gas Permeation and Separation in Asymmetric Hollow Fiber Membranes Considering Non-ideal Effects**", AIChE Annual Meeting, San Francisco, CA, USA, 3-8 November 2013.
17. M. A. A. Shahmirzadi, S. S. Hosseini, "**Potentials and Advantages of Membrane Reactors in Hydrogen Production Process**", The 1st National Hydrogen Conference, Isfahan, Iran, 7 Nov. 2013. (Poster Session) (In Persian)
18. M. Jalili, M. A. A. Shahmirzadi, S. S. Hosseini, "**Environmental Considerations in Water Recovery from Seawater Using RO Process**", The National Water Reuse Conference, Tehran, Iran, 26-27 Jan. 2014. (Oral Session)(In Persian) **(Best Paper Award)**
19. M. Jalili, M. A. A. Shahmirzadi, S. S. Hosseini, "**Brine Management in Seawater Desalination Through Reverse Osmosis: Environmental Aspects**", The 5th Iranian Water Resources Management Conference, Tehran, Iran, 18-19 Feb. 2014. (Oral Session)(In Persian) **(Best Paper Award)**
20. M. Tamadondar, H. Pahlavanzadeh, S. S. Hosseini, "**Investigation on the morphological evolution of poly(acrylonitrile) ultrafiltration membranes prepared via phase inversion technique**", The 8th International Chemical Engineering Congress & Exhibition (IChEC 2014), Kish, Iran, 24-27 Feb. 2014. (Oral Session)
21. S. Najari, S. S. Hosseini, M. R. Omidkhah, N.R. Tan, "**Mixed Matrix Membranes Comprising Nanoparticles for Olefin/Paraffin Separation**", 1st National Conference on Nanotechnology in oil, Gas and Petrochemical Industries, Bushehr, Iran, 14 May 2014. (Poster)
22. M. A. A. Shahmirzadi, S. S. Hosseini, "**Investigation and Evaluation of Produced Water Treatment Using Nanofiltration**", 1st National Conference on Nanotechnology in oil, Gas and Petrochemical Industries, Bushehr, Iran, 14 May 2014. (Poster)(In Persian)
23. A. Nazif, A. Z. Moghadam, S. S. Hosseini, "**Study and Analysis of the Effects of Multiple Parameters on Performance of Heavy Metal Removal and Recovery from Industrial Waste Waters Using Complexation-UF Technique**", The 2nd Scientific Conference on Process Engineering, Tehran, Iran, 22 May 2014. (Oral Session)(In Persian)
24. M. A. A. Shahmirzadi, S. S. Hosseini, "**Study and Investigation on the Techniques for Removal and Recovery of Magnesium from Seawater**", The 2nd Scientific Conference on Process Engineering, Tehran, Iran, 22 May 2014. (Oral Session)(In Persian)
25. S. S. Hosseini, P. Kundu, W.B. Krantz, S. M. Roodashti, N.R. Tan, "**Gas Permeation and Separation in Polymeric Hollow Fiber Membranes: Mathematical Modeling and Validation**", 9th Ibero-American Conference on Membrane Science and Technology (CITEM 2014), Santander, Spain, 25-28 May 2014. (Poster)
26. S. Najari, S. S. Hosseini, N.R. Tan, "**Analysis of the transport models governing permeation and**

separation of olefin/paraffin mixtures in polymeric membranes", 9th Ibero-American Conference on Membrane Science and Technology (CITEM 2014), Santander, Spain, 25-28 May 2014. (Poster)

27. H. Pahlavanzadeh, S. S. Hosseini, M. Tamaddondar, N.R. Tan, "**Pervaporation Separation of Methanol from MTBE Using Functionalized Membranes Based on Polyelectrolyte Surfactant Complex**", 9th Ibero-American Conference on Membrane Science and Technology (CITEM 2014), Santander, Spain, 25-28 May 2014. (Poster)

28. M. A. A. Shahmirzadi, S. S. Hosseini, "**Techno-economical Evaluation of Integration of Solar Energy In Reverse Osmosis Desalination Systems**", The 2nd Int'l Training Workshop, Conference and Exhibition on Desalination, Tehran, Iran, 20-22 October 2014. (Poster Session)

29. M. A. A. Shahmirzadi, S. S. Hosseini, "**Strategies for Employment of Membrane Technology for Produced Water Treatment**", The 2nd Conference on R&D for Waste Management in Oil Industry, Tehran, Iran, 6-7 Jan. 2015. (Poster Session)

30. M. A. A. Shahmirzadi, S. S. Hosseini, G. Ruan, "**Modification of Inorganic Adsorbents for Separation of Magnesium Salts**", The 2nd National Water Reuse Conference, Tehran, Iran, 26-28 Jan. 2015. (Poster Session)

31. A. Nazif, S. S. Hosseini, "**An Investigation on the Modification of Polysulfone Membranes for Heavy Metal Removal from Industrial Wasterwater Streams**", The 2nd National Water Reuse Conference, Tehran, Iran, 26-28 Jan. 2015. (Poster Session)

32. S. Najari, M.R. Omidkhah, S. S. Hosseini, "**Analysis of Models for Olefin/Paraffin Permeation in Glassy Polymeric Membranes**", The 15th Iranian National Congress of Chemical Engineering (IChEC 2015), Tehran, Iran, 17-19 Feb. 2015. (Poster Session)

33. S. Najari, S.M. Roodashti, S. S. Hosseini, P. Kundu, N.R. Tan, "**Sensitivity Analysis of Process Parameters in Asymmetric Hollow Fiber Membranes for Gas Separation**", The 15th Iranian National Congress of Chemical Engineering (IChEC 2015), Tehran, Iran, 17-19 Feb. 2015. (Poster Session)

34. S. Alibakhshi, M. Yousefi, S. S. Hosseini, "**An Investigation on the Phase Inversion Behavior of Polyethersulfone (PES) in Ternary Phase Systems**", The 15th Iranian National Congress of Chemical Engineering (IChEC 2015), Tehran, Iran, 17-19 Feb. 2015. (Poster Session)

35. S. M. Mousavi, A. Zadhoush, S. S. Hosseini, "**An Investigation on the influence of Phase Inversion Process and its Mechanisms on the Morphology of Polymeric Membranes**", The 15th Iranian National Congress of Chemical Engineering (IChEC 2015), Tehran, Iran, 17-19 Feb. 2015. (Poster Session)

36. A. Nazif, S. S. Hosseini, "**Heavy Metal Removal from Industrial Wastewaters Using Nanocomposite Membranes**", National Conference on Environmental Science and Engineering, Ahvaz, Iran, 17-19 Feb. 2015. (Oral Session)

37. M. A. A. Shahmirzadi, S. S. Hosseini, "**Effect of Casting Parameters on the Properties and Performace of Nanofiltration Membranes Fabricated via Phase Inversion Technique**", Asian Nano Forum Conference, Kish Island, Iran, 8-11 March 2015. (Poster Session)

38. K. Shafiej, S. S. Hosseini, E. Bringas, "**Tuning and Modification of PMMA-based Membranes for Air Separation Applications**", The 2nd National Conference on Membranes and Membrane Processes, Tehran, Iran, 26-27 May 2015. (Poster Session)

39. J. A. Dehkordi, S. S. Hosseini, P. K. Kundu, N. R. Tan, **"The Effect of Numerical Methods on Accuracy and Performance in Modeling of Membrane Permeators"**, The 2nd National Conference on Membranes and Membrane Processes, Tehran, Iran, 26-27 May 2015. (Poster Session)

40. S. S. Hosseini, S. Khosravifard, H. Kazemi, **"The Effect of Hollow Fiber Arrangements on the Performance of Membrane Oxygenator Modules"**, The 2nd National Conference on Membranes and Membrane Processes, Tehran, Iran, 26-27 May 2015. (Poster Session)

41. J. A. Dehkordi, S. S. Hosseini, P. K. Kundu, N. R. Tan, **"Modeling of Ideal and Real Gas Behaviors for Prediction of Performance in Membrane Permeators"**, The 2nd National Conference on Membranes and Membrane Processes, Tehran, Iran, 26-27 May 2015. (Poster Session)

42. S. Najari, M.R. Omidkhan, S.S. Hosseini, **"Modeling binary gas permeation in glassy polymers using Maxwell-Stefan approach"**, The 12th International Conference on Membrane Science and Technology (MST2015), Tehran, Iran, 1-3 Nov. 2015.

43. S. Najari, M.R. Omidkhan, S.S. Hosseini, **"Investigation and evaluation of transport models for olefin/paraffin separation in polyimide membranes"**, The 12th International Conference on Membrane Science and Technology (MST2015), Tehran, Iran, 1-3 Nov. 2015.

44. S.S. Hosseini, J. Aminian Dehkordi, P.K. Kundu, **"Mathematical modeling and investigation on the temperature and pressure dependency of permeation and membrane separation performance for natural gas treatment"**, The 12th International Conference on Membrane Science and Technology (MST2015), Tehran, Iran, 1-3 Nov. 2015.

45. J. Aminian Dehkordi, S.S. Hosseini, P.K. Kundu, N.R. Tan **"Mathematical modeling of natural gas separation using hollow fiber membrane modules for application of finite element method through statistical analysis"**, The 12th International Conference on Membrane Science and Technology (MST2015), Tehran, Iran, 1-3 Nov. 2015.

46. S. Najari, M.R. Omidkhan, S.S. Hosseini, **"An Investigation on the Factors Affecting the Properties and Performance of Polymeric Nanocomposite Membranes for Olefin/Paraffin Separation"**, The 5th International Conference on Ultrafine Grained and Nanostructured Materials, Tehran, Iran, 11-12 Nov. 2015.

47. S. Maghami, S.S. Hosseini, A. Mehrabani Zeidabad **"Insights to the Modeling of Polymer-Particle Interfacial Characteristics in Nanocomposite Membranes for Transport of Gas Molecules"**, The 5th International Conference on Ultrafine Grained and Nanostructured Materials, Tehran, Iran, 11-12 Nov. 2015.

· INVITED TALKS/LECTURES:

1. Membranes and Materials for Energy Applications: Natural Gas and Hydrogen Separation, Fatih University, Istanbul, Turkey, 11 June 2010.

2. Design and development of high performance multi-purpose gas separation membranes, Membrane Technology & Research Inc. (MTR), Menlo Park, CA, USA, July 2010.

3. Recent Research Activities and Developments in Gas Separation Membranes, Tarbiat Modares University, Tehran, Iran, 11 Dec 2010.

4. Gas Separation Membranes: An Overview and Recent Progresses, Shiraz University, Shiraz,

Iran, 04 Jan 2011.

5. Recent Trends and Developments in Desalination Technology and Research, International Training Workshop and Experts Conference on desalination of brackish sea water and wastewater treatment, Tehran, Iran, June 2012.

6. Potentials and Applications of Membrane Separation in Pharmaceutical Industry and Chiral Separation, Tofigh Daru Engineering and Research Company, Tehran, Iran, Jan. 2014.

7. Strategies for Design and Fabrication of High Performance Membranes for Desalination, The 2nd Int'l Training Workshop, Conference and Exhibition on Desalination, Tehran, Iran, 20-22 October 2014.

INTELLECTUAL PROPERTIES:

1. S.S. Hosseini, T.S. Chung, L. Jiang, "**Polymer Blends and Carbonized Polymer Blends**", U.S. Provisional Patent (S/N:61/109,318), Filed 29 Oct 2008

2. S.S. Hosseini, T.S. Chung, L. Jiang, "**Polymer Blends and Carbonized Polymer Blends**", PCT International Application No. PCT/US2009/059818, Filed 7 Oct 2009, International Publication Number **WO2010/042602 A1**, International Publication Date 15 April 2010

3. S.S. Hosseini, T.S. Chung, "**Polymer Blends and Carbonized Polymer Blends**", U.S. Provisional Patent (S/N:13/122,843), Filed 4/6/2011

4. S.S. Hosseini, T.S. Chung, L. Jiang, "**Carbon Membranes from Blends of PBI and Polyimides for N₂/CH₄ and CO₂/CH₄ Separation and Hydrogen Purification**", U.S. Provisional Patent (S/N:61/103,547), Filed 7 Oct 2008

5. A. Greenberg, W.B. Krantz, E. Kujundzic, A. Yeo, S.S. Hosseini, "**Determination of Pore Size in Porous Materials by Evaporative Mass Loss**" U.S. Provisional Patent (S/N: 61/329,593), Filed 30 April 2010

6. A. Greenberg, W.B. Krantz, E. Kujundzic, A. Yeo, S.S. Hosseini, "**Determination of Pore Size in Porous Materials by Evaporative Mass Loss**", Pub. No.: **US2013/0042670 A1**, Pub. Date: 21 Feb. 2013

Ph.D. Students:

S. Alibakhshi (joint with Dr. Yousefi, IUT), [2012-Present](#)

Thesis Title: Design and Fabrication of UF Membranes for BioSeparation Applications

M. Mousavi (joint with Dr. Zadhoush, IUT), [2012-Present](#)

Thesis Title: Investigations on the Viscoelastic Properties of the polymeric solutions and its Effects on the Morphology and Performance of Hollow Fiber Membranes

(*Project Awarded Grant by Iranian Nanotechnology Initiative Council)

S. Najari (joint with Dr. Omidkhah), [2013-Present](#)

Thesis Title: Investigation on the Design and Fabrication of Advanced Membranes for Olefin/Paraffin Separations

(*Project Awarded Grant by Iranian Nanotechnology Initiative Council)

M. Heidari, [2013-Present](#)

Thesis Title: Design and Fabrication of High Performance Membranes for Natural Gas Sweetening

S. Raveshian, [2014-Present](#)

Thesis Title: Design and Fabrication of High Performance Membranes for Air Separation

S. Maghami (joint with Dr. Mehrabani, IUT), [2014-Present](#)

Thesis Title: Modeling and Analysis of Permeation and Gas Separation in Mixed Matrix Membranes

M.Sc. Students:

M. Jalili (Joint with Dr. W. Phay, Techcomm, Singapore), [2013-Present](#)

Thesis Title: Design and Development of Nanostructured Composite RO Membranes with Polyimide Thin Layer for Seawater Desalination

(*Project Awarded Grant by Iranian Nanotechnology Initiative Council)

K. Shafiei (joint with Prof. Bringas, U. of Cantabria, Spain), [2013-Present](#)

Thesis Title: Design and Fabrication of Nanostructured Air Separation Membranes based on PMMA

(*Project Awarded Grant by Iranian Nanotechnology Initiative Council)

E. Mehralian, [2013-Present](#)

Thesis Title: Design and Fabrication of Nanocomposite Pervaporation Membranes for Hydrazine Dehydration

(*Project Awarded Grant by Iranian Nanotechnology Initiative Council)

A. Nazif (joint with Prof. Ortiz, U. of Cantabria, Spain), [2013-Present](#)

Thesis Title: Investigation of Removal of Chromium and Nickel from Electroplating Wastewater Using NF Membranes based on PAN

J. Aminian (joint with Dr. P. Kundu, U. of Waterloo, Canada), [2013-Present](#)

Thesis Title: Modeling Gas Separation in Nanostructured Polymeric Hollow Fiber Membrane Modules Using Orthogonal Collocation Technique

N. Motavallian (joint with Dr. Haghtalab, TMU), [2013-Present](#)

Thesis Title: Liquid-Liquid Equilibrium Calculations for Polymer-solvent-NonSolvent system in phase separation process for Polyethersulfone and Polysulfone Membranes

M. Gilani (joint with Dr. Rashidi, Beheshti Uni.), [2014-Present](#)

Thesis Title: Improving Anti-biofouling properties in RO membranes for desalination

S. Khosravifard, [2014-Present](#)

Thesis Title: -Membrane Oxygenators

A. Soleimani, [2014-Present](#)

Thesis Title: -Membranes for He Separation

S. Fakharian, [2014-Present](#)

Thesis Title: -Membranes for Produced Water Treatment

S.M. HosseiniNejad, [2014-Present](#)

Thesis Title: -Pervaporation separation of organic solvents

Alumni:

M.A. Alaie Shahmirzadi (MSc) (joint with Prof. G. Ruan, ISDMU, China), [2012-2014](#)

Thesis Title: Separation of Magnesium from Aqueous Solutions Using Nanofiltration Membranes

(*Project Awarded Grant by Iranian Nanotechnology Initiative Council)

M. Tamaddondar (MSc) (joint with Dr. Pahlevanzadeh), [2012-2014](#)

Thesis Title: Using Membrane Pervaporation for Separation of Methanol from its Mixture with MTBE

M.A. Heidari (MSc) (joint with Dr. Omidkhah), [2012-2014](#)

Thesis Title: Boron Removal Using Polyimide-Polysulfone Thin Film Nanocomposite RO Membranes

M. Roodashti (MSc) (joint with Dr. P. Kundu, U. of Waterloo, Canada) , [2012-2014](#)

Thesis Title: Modeling of Hollow Fiber Membrane Modules for Separation of Multi-component Gas Mixtures

V. Pirouzfard (PhD) (joint with Dr. Zarrin Ghaham & Dr.Omidkhah), [2008-2013](#)

Thesis Title: Fabrication of Asymmetric Nanostructured CMS Membranes for CO₂ Separation from Gas Streams

Guest Researchers:

F. Minoeei (BSc Student, Sharif U.), [2014-Present](#)

Project Title: Membrane Science and Technology for Protein Separation

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