

Dr. Mohsen Abbasi

Position: Assistant Professor in Chemical Engineering Department,
School of Oil, Gas and Petrochemical Engineering, Persian Gulf
University, Bushehr, Iran

<http://www.pgu.ac.ir>

Cell Phone: +98 917 3239077

Date of Birth: 11/9/1985 or 20/6/1364

E-mail: m.abbasi@pgu.ac.ir



Educations:

Ph.D in Chemical Engineering,
September 2009 to January 2014
Shiraz University, Shiraz, Iran

Average grade: (18.10/20)

Thesis Title: "Modeling and simulation of double coupled steam reforming of methane and chemical looping combustion process with interconnected fluidized-bed reactors"
(Score: 19.58/20)

Supervisors: Prof. Mohammad Reza Rahimpour & Dr. Alireza Shariati

M.Sc in Chemical Engineering, Separation Processes
September 2007- September 2009

Iran University of Science and Technology, Tehran, Iran

Average grade: (16.87/20)

Thesis Title: "Oily wastewater treatment using Microfiltration by ceramic membrane"
(Score: 19.62/20)

Supervisors: Prof. Toraj Mohammadi & Dr. Afshin Pak

B.Sc in Chemical Engineering
Shiraz University, Shiraz, Iran
September 2002 - September 2007

Average grade: (15.84/20)

Thesis Title: "Simulation and optimization of one cycle for parallel work and cold generation with ammonia-water as working fluid "

(Score: 19.25/20)

Supervisor: Dr. Reza Eslamloelian

Research Interests and Experiences:

- 1) New Processes for Water and Wastewater Treatment
- 2) Membrane Processes
- 3) Energy and Environment

- 4) Synthesis and Application of Zeolites and ceramic membranes
- 5) Chemical Looping Combustion (CLC) Process
- 6) Modeling and Simulation of Chemical Reactors

Professional Experience:

- 1) September 2007 to now: Dean of Central laboratory of Persian Gulf University.
- 2) Executive researcher of project "Design and manufacture of new types of desalination units based on the electrolysis process , Urban and rural water and sewage companies ", 2017
- 3) Researcher of project "Design and construction of pilot plant sweetening sea water by humidification-dehumidification method", Academic Vice President, 2016.
- 4) Researcher of project "Experimental Study, Pilot Manufacture, Modeling And Simulation Of Performance Enhancement of Gas Dehydration Column in Farashband Refinery by Employing of Hydrocarbon Solvents ", South Zagros Oil and Gas Company, 2012.
- 5) Researcher of project "Oily Wastewater Treatment Using Microfiltration by Ceramic Membrane", National Iranian Oil Products Distribution Company (NIOPDC), 2009.
- 6) September 2009 to January 2014: Research Assistant to Prof. Mohammad Reza Rahimpour (Reactors Research Lab, Chemical Engineering Department, School of Chemical and Petroleum Engineering, Shiraz University, Shiraz, Iran).
- 7) September 2007 to September 2009: Research Assistant to Prof. Toraj Mohammadi (Membrane Research Lab. For Separation processes, Faculty of Chemical Engineering, Iran University of Science and Technology, Tehran, Iran).

Publications and Patents

Journal papers (ISI)

- 1) Y. Rasouli, **Mohsen Abbasi**, S.A. Hashemifard, Investigation of in-line coagulation-MF hybrid process for oily wastewater treatment by using novel ceramic membranes, *Journal of Cleaner Production*, (2017), In Press.
- 2) Y. Rasouli, **Mohsen Abbasi**, S.A. Hashemifard, Oily wastewater treatment by adsorption-MF hybrid process using PAC, natural zeolite powder and low cost ceramic membranes, *Water Science Technology*, (2017), In Press.
- 3) **Mohsen Abbasi**, M. Farniaei, Enhancement of hydrogen production by application of fluidization concept in industrial scale steam reformers, *Theoretical*

Foundations of Chemical Engineering, (2017), In Press.

- 4) **Mohsen Abbasi**, A. Taheri, Treatment of synthetic oily wastewaters by coagulation-mf hybrid process using mullite – alumina ceramic membranes, *Environmental Engineering and Management Journal*, (2017), In Press.
- 5) M. Teimoori, S.A. Hashemifard, A.F. Ismail, **Mohsen Abbasi**, The impact of nonpolar coagulation bath-immiscible liquid additives on the polyethersulfone membranes structure and performance, *Journal of Applied Polymer Science* 134 (2016) 44509-44522.
- 6) **Mohsen Abbasi**, M. Farniaei, S. Kabiri, M.R. Rahimpour, S. Abbasi, Performance Study of a Thermally Double Coupled Multi-Tubular Reactor by Considering the Effect of Flow Type Patterns, *International Journal of Chemical Reactor Engineering* 14 (2016) 63-78.
- 7) **Mohsen Abbasi**, A. Taheri, Selecting model for treatment of oily wastewater by MF-PAC hybrid process using mullite-alumina ceramic membranes, *Journal of Water Chemistry and Technology* 38 (2016), 173-180.
- 8) **Mohsen Abbasi**, M. Farniaei, M.R. Rahimpour, A. Shariati, S. Abbasi, Synthesis Gas Production with Simultaneous CO₂ Capturing and Consuming: Application of Chemical Looping Combustion by Employing Fe₄₅-Al₂O₃ and Mn₄₀/Mg–ZrO₂ Oxygen Carriers, *The Canadian Journal of Chemical Engineering*, 93 (2015), 2124-2134.
- 9) **Mohsen Abbasi**, M. Farniaei, M.R. Rahimpour, A. Shariati, Simultaneous syngas production with different H₂/CO ratio in a multi-tubular methane steam and dry reformer by utilizing of CLC, *Journal of Energy Chemistry* 24 (2015), 54-64.
- 10) **Mohsen Abbasi**, M. Farniaei, M.R. Rahimpour, A. Shariati, Hydrogen Production in an Environmental-Friendly Process by Application of Chemical Looping Combustion via Ni- and Fe-Based Oxygen Carriers, *Theoretical Foundations of Chemical Engineering*, 49 (2015), 884-900.
- 11) **Mohsen Abbasi**, M. Farniaei, S. Kabiri, M.R. Rahimpour, S. Abbasi, A Feasibility Study for Synthesis Gas Production by Considering Carbon Dioxide Capturing in an Industrial-Scale Methanol Synthesis Plant, *Arabian Journal of Science and Engineering* 40 (2015), 1255–1268.
- 12) M. Farniaei, **Mohsen Abbasi**, A. Rasoolzadeh, M.R. Rahimpour, Performance enhancement of thermally coupling of methanol synthesis, DME synthesis and cyclohexane dehydrogenation processes: Employment of water and hydrogen perm-selective membranes via different recycle streams, *Chemical Engineering and Processing* 85 (2014) 24-37.
- 13) M. Farniaei, **Mohsen Abbasi**, H. Rahnama, M. R. Rahimpour, A. Shariati, Simultaneous production of methanol, DME and hydrogen in a thermally double

- coupled reactor with different endothermic reactions: Application of cyclohexane, methylcyclohexane and decalin dehydrogenation reactions, *Journal of Natural Gas Science and Engineering*, 19 (2014), 324-336.
- 14) **Mohsen Abbasi**, A. Taheri, "Modeling of permeation flux decline during oily wastewaters treatment by MF – PAC hybrid process using mullite ceramic membranes", *Indian Journal of Chemical Technology* 21 (2014), 49-55.
 - 15) M. Farniaei, **Mohsen Abbasi**, H. Rahnama, M. R. Rahimpour, A. Shariati, Syngas production in a novel methane dry reformer by utilizing of tri-reforming process for energy supplying: Modeling and simulation, *Journal of Natural Gas Science and Engineering*, 20 (2014), 132-146.
 - 16) M. Farniaei, **Mohsen Abbasi**, S. Kabiri, Production of Hydrogen, Methanol and Benzene Simultaneously in an Industrial Scale Reactor by Considering Effect of Flow Type Regimes, *Arabian Journal of Science and Engineering* 39 (2014), 8477–8489.
 - 17) H. Rahnama, M. Farniaei, **Mohsen Abbasi**, M. R. Rahimpour, Modeling of synthesis gas and hydrogen production in a thermally coupling of steam and tri-reforming of methane with membranes, *Journal of Industrial and Engineering Chemistry* 20 (2014), 1779-1792.
 - 18) **Mohsen Abbasi**, M. Farniaei, M.R. Rahimpour, A. Shariati, Methane dry reformer by application of chemical looping combustion via Mn-based oxygen carrier for heat supplying and carbon dioxide providing, *Chemical Engineering and Processing* 79 (2014) 69-79.
 - 19) **Mohsen Abbasi**, A. Taheri, Modeling of Coagulation–Microfiltration Hybrid Process for Treatment of Oily Wastewater Using Ceramic Membranes, *Journal of Water Chemistry and Technology* 36 (2014), 80-89.
 - 20) M. Farniaei, H. Rahnama, **Mohsen Abbasi**, M. R. Rahimpour, Simultaneous production of two types of synthesis gas by steam and tri-reforming of methane using an integrated thermally coupled reactor: mathematical modeling, *International Journal of Energy Research* 38 (2014), 1260-1277.
 - 21) **Mohsen Abbasi**, M. Farniaei, M.R. Rahimpour, A. Shariati, Enhancement of Hydrogen Production and Carbon Dioxide Capturing in a Novel Methane Steam Reformer Coupled with Chemical Looping Combustion and Assisted by Hydrogen Perm- Selective Membranes, *Energy & Fuels* 27 (2013), 5359–5372.
 - 22) **Mohsen Abbasi**, A. Taheri, " Effect of Coagulant Agents on Oily Wastewater Treatment Performance Using Mullite Ceramic MF Membranes: Experimental and Modeling Study", *Chinese Journal of Chemical Engineering* 27 (2013) 1251—1259.
 - 23) M.R. Rahimpour, M. Farniaei, **Mohsen Abbasi**, J. Javanmardi, S. Kabiri,

- Comparative Study on Simultaneous Production of Methanol, Hydrogen, and DME Using a Novel Integrated Thermally Double-Coupled Reactor, *Energy & Fuels* 27 (2013) 1982–1993.
- 24) **Mohsen Abbasi**, M. R. Sebzari, S. Rezaei Hossein Abadi, T. Mohammadi, M. Hemati, Integrated membrane pilot plant for refinery wastewater treatment in order to produce boiler feed water, *Desalination and Water Treatment* 51 (2013) 2543-2553.
- 25) M. Farniaei, **Mohsen Abbasi**, A. Rasoolzadeh, M. R. Rahimpour, Enhancement of methanol, DME and hydrogen production via employing hydrogen perm-selective membranes in a novel integrated thermally double-coupled two-membrane reactor, *Journal of Natural Gas Science and Engineering*, 14 (2013) 158-173.
- 26) M. R. Rahimpour, M. Hesami, M. Saidi, A. Jahanmiri, M. Farniaei, **Mohsen Abbasi**, Methane Steam Reforming Thermally Coupled with Fuel Combustion: Application of Chemical Looping Concept as a Novel Technology, *Energy & Fuels* 27 (2013), 2351–2362.
- 27) **Mohsen Abbasi**, D. Mowl, Analysis of membrane pore blocking models applied to the MF of real oily wastewaters treatment using Mullite and Mullite-Alumina ceramic membranes, *Desalination and Water Treatment* 51 (2013), 1-13.
- 28) **Mohsen Abbasi**, M.R. Sebzari, A. Salahi, T. Mohammadi, Modeling of Membrane Fouling and Flux Decline in Microfiltration of Oily Wastewater Using Ceramic Membranes, *Chemical Engineering Communication* 199 (2012) 78–93.
- 29) **Mohsen Abbasi**, A. Salahi, M. Mirfendereski, M. Nikbakht, M. Golshenas, T. Mohammadi, Oily wastewaters treatment using mullite ceramic membrane, *Desalination and Water Treatment* 37 (2012) 21-30.
- 30) **Mohsen Abbasi**, M. R. Sebzari, T. Mohammadi, Effect of coagulation on oily wastewater treatment performance using mullite ceramic microfiltration membranes, *Separation and Science Technology* 47 (2012) 2290-2299.
- 31) **Mohsen Abbasi**, M. R. Sebzari, S. Abbasi, T. Mohammadi, "Flux decline and membrane fouling in cross-flow microfiltration of oil-in-water emulsions", *Desalination and Water Treatment* 28 (2011) 1–7.
- 32) Kh. Paymoon, M.R. Rahimpour, S. Raeissi, **Mohsen Abbasi**, M.S. Baktash, Enhancement in Triethylene Glycol (TEG) Purity via Hydrocarbon Solvent Injection to a TEG + Water System in a Batch Distillation Column, *Energy & Fuels*, 25 (2011) 5126–5137.
- 33) A. Salahi, R. Badrnezhad, **Mohsen Abbasi**, T. Mohammadi, F. Rekabdar, Oily wastewater treatment using a hybrid UF/RO system, *Desalination and Water Treatment* 28 (2011) 75–82.

- 34) **Mohsen Abbasi**, M.R. Sebzari, T. Mohammadi, "Enhancement of oily wastewaters treatment by MF ceramic membranes using PAC", *Chemical Engineering & Technology* 34 (2011)1-8.
- 35) **Mohsen Abbasi**, A. Salahi, M. Mirfendereski, T. Mohammadi, A. Pak, " Dimensional analysis of permeation flux for microfiltration of oily wastewaters using mullite ceramic membranes", *Desalination* 252 (2010) 113–119.
- 36) A. Salahi, **Mohsen Abbasi**, T. Mohammadi, " Permeate flux decline during UF of oily wastewater: Experimental and modeling", *Desalination* 251 (2010) 153–160.
- 37) **Mohsen Abbasi**, M. Mirfendereski, M. Nikbakht, M. Golshenas, T. Mohammadi." Performance study of mullite and mullite-alumina ceramic MF membranes for oily wastewaters treatment", *Desalination* 259 (2010) 169–178.

Journal papers (Non ISI)

- 1) **Mohsen Abbasi**, M.R Sebzari, Investigation of Best Operating Conditions for Treatment of Oily Wastewaters with Hollow Fiber Ultrafiltration Membranes, *Journal of Membrane and Separation Technology*, 2014, 3, 267-272.
- 2) **Mohsen Abbasi**, M. Farsi, A.H. Jahanmiri, "Feasibility study of membrane processes for treatment of industrial wastewater contains heavy metals" *Iranian Chemical Engineering Journal* Vol. 10 - No. 54 (2011).
- 3) A. Salahi, T. Mohammadi, **Mohsen Abbasi**, F. Rekabdar, "Chemical cleaning of ultrafiltration membrane after treatment of oily wastewater ", *Iranian Journal of Chemical Engineering* Vol. 7, No. 3 (Summer), (2010).

Selected Conference Papers:

- 1) M. Behroze, **Mohsen Abbasi**, Sh. Osfouri, Investigation of various novel and hybrid Fenton processes for different wastewaters treatment, The 4th Environmental Planning & Management, Tehran, Iran, May 23-24, 2017, (Accepted paper as Poster).
- 2) J. Zare, M. Bargestani, **Mohsen Abbasi**, R. Azin, Water audit to optimize water consumption in the jam city, 1st National Conference on Gas and Petrochemical Processes, Bojnord, Iran, May 3-4, 2017, (Accepted paper as Poster).
- 3) F. Keramat, **M. Abbasi**, Study of various methods for DMSO wastewaters treatment, The 8th National Conference & Exhibition on Environmental Engineering, Tehran, Iran, November 8-9, 2016, (Accepted paper as Poster).
- 4) Y. Rasouli, **Mohsen Abbasi**, S.A. Hashemifard, Oily wastewater treatment by using Mullite and Mullite-Alumina ceramic MF membrane-PAC-Coagulation

- hybrid process, 1st Biennial Conference on Persian Gulf Oil, Gas and Petrochemical Processes, Bushehr, Iran, April 20, 2016, (Accepted paper as Oral Presentation).
- 5) A. Borazjani, **Mohsen Abbasi**, Sh. Osfouri, Separation of water emulsion from oil products in storage tanks using adsorption process: a case study at National Iranian Oil Products Distribution of Bushehr, 1st Biennial Conference on Persian Gulf Oil, Gas and Petrochemical Processes, Bushehr, Iran, April 20, 2016, (Accepted paper as Poster).
 - 6) M. Teimoori, S.A. Hashemifard, **M. Abbasi**, effect of normal alkane additives on the structural parameters of polyethersulfone ultrafiltration membranes, 12th International Conference on Membrane Science & Technology, Tehran, Iran, November 1-3, 2015,
 - 7) M.R. Sebzari, **M. Abbasi**, S. Abbasi, T. Mohammadi, Application of ceramic membranes for oily wastewaters treatment, The 1th National Refinery Process In Environment Conference, Tehran, Iran, April 15, 2011, (Accepted paper as Poster).
 - 8) S. Sh. Amirabadi, **M. Abbasi**, M. Taheri, Enhancement of Heat Duty in Heat Exchangers Using Nanofluids, 7th International Chemical Engineering Congress & Exhibition Kish, Iran, November 21-24, 2011(Accepted paper as Poster).
 - 9) M. R. Sebzari, S. Rezaei Hosseinabadi, **M. Abbasi**, M. Hemmati, T. Mohammadi, Optimization of operating conditions for a hollow fiber ultrafiltration membrane module using Taguchi method, 7th International Chemical Engineering Congress & Exhibition Kish, Iran, November 21-24, 2011(Accepted paper as Oral presentation).
 - 10) **M. Abbasi**, M.R. Sebzari, T. Mohammadi, Modeling of flux decline for oily wastewater treatment using Hermia's models, The 4th Conference and Exhibition on Environmental, Tehran, Iran, November 1-2, 2010, (Accepted paper as Poster)
 - 11) **M. Abbasi**, M.R. Sebzari, S. Abbasi, T. Mohammadi, Investigation of coagulant effects on fouling of membranes in microfiltration of oily wastewaters, The 1th National Membrane and Membrane Process Conference, Tehran, Iran, February 14 -15, 2011, (Accepted paper as Poster)
 - 12) S. Sabbaghi, R. Bazargan, **M. Abbasi**, M. S. Baktash, Performance study of (PDADMA/PSS) multilayer nano films for control of corrosion, International Congress of Nano Science and Nanotechnology, November 9-11, 2010, Shiraz, Iran, (Accepted paper as Poster)
 - 13) **M. Abbasi**, A. Salahi, A. Pak, T. Mohammadi, "Oily wastewaters treatment using microfiltration by ceramic membranes", International Conference on Water and Wastewater Treatment, April 21-22, 2010, Esfahan, Iran (Accepted paper as Oral presentation)

- 14) A. Salahi, T. Mohammadi, **M. Abbasi**, F. Rekabdar, " Chemical cleaning of ultrafiltration membrane after treatment of oily wastewater ", The 6th International Chemical Engineering Congress and Exhibition, November 16-20, 2009, Kish Island, Iran (Accepted paper as Poster)
- 15) **M. Abbasi**, M. R. Sebzari, S. Abbasi, T. Mohammadi, " Flux decline and membrane fouling in cross-flow microfiltration of oil-in-water emulsions", International Conference on Water and Wastewater Treatment, April 21-22, 2010, Esfahan, (Accepted paper as Oral presentation)
- 16) R. Eslamloei, **M. Abbasi**, H. Abbasi, " Simulation and optimization of cycles for parallel work and cold generation with ammonia-water as working fluid", 2th National Conference of Thermodynamic, May 22, 2009, Tehran, Iran (Accepted paper as Poster)
- 17) M.S. Baktash, R. Khorrami, **M. Abbasi**, Kh. Paymooni, M.R. Rahimpour, Improvement of TEG regeneration in natural gas dehydration using a hydrocarbon solvent, 19th International Congress of Chemical and Process Engineering CHISA 2010, Prague, Czech Republic, August 28 to September 1, 2010, (Accepted paper as Poster)
- 18) M.S. Baktash, R. Khorramirad, **M. Abbasi**, Kh. Paymooni, M.R. Rahimpour, Enhancement of BTEX removal in natural gas dehydration using a hydrocarbon solvent, 19th International Congress of Chemical and Process Engineering CHISA 2010, Prague, Czech Republic, August 28 to September 1, 2010, (Accepted paper as Oral presentation)
- 19) M. Baktash, **M. Abbasi**, M. Rahimpour, Experimental Study for Enhancement of TEG Regeneration in Natural Gas Dehydration Using a Hydrocarbon Solvent, 60th Canadian chemical engineering conference, October 24-27, 2010, (Accepted paper as Oral presentation)
- 20) **M. Abbasi**, M.R. Sebzari, A. Salahi, S. Abbasi, T. Mohammadi, High salinity wastewaters treatment using mullite and mullite-alumina ceramic membranes: Experimental and Modeling, 13th Iranian National Chemical Engineering Congress, Kermanshah, Iran, October 25-28, 2010 (Accepted paper as Poster)
- 21) **M. Abbasi**, M. Farsi, S. Abbasi, Performance Study of Nanofluids for Enhancement of Heat Duty in Heat Exchangers, 13th Iranian National Chemical Engineering Congress, Kermanshah, Iran, October 25-28, 2010 (Accepted paper as Poster)
- 22) **M. Abbasi**, M.R. Sebzari, T. Mohammadi, A hybrid PAC/MF system for oily wastewater treatment using Mullite and Mullite-Alumina membranes, The 4th Conference and Exhibition on Environmental, Tehran, Iran, November 1-2, 2010,

(Accepted paper as Poster)

Patents

- 1) **M. Abbasi**, M. Mirfendereski, M. Nikbakht, M. Golshenas, T. Mohammadi, "Oily wastewaters treatment using microfiltration with mullite ceramic membranes", National patent (accepted).
- 2) M. Nikbakht, M. Golshenas, M. Mirfendereski, **M. Abbasi**, T. Mohammadi, "preparation and characterisation of mullite – alumina ceramic membranes for oily wastewaters treatment", National patent (accepted).
- 3) M. Baktash, **M. Abbasi**, M. Rahimpour, application of toluene solvent for improving TEG regeneration column efficiency in natural gas process, National patent (accepted).
- 4) M. Baktash, **M. Abbasi**, M. Rahimpour, application of hydrocarbon solvents for energy saving of reboiler of TEG regeneration column efficiency in natural gas process, National patent (accepted).

Books

Mohsen Abbasi, "Heat Transfer for Chemical Engineers", Arshad publication, ISBN: 978-600-115-026-5.

Mohsen Abbasi, "Comprehensive Answers to Heat Transfers Questions ", Arshad publication, ISBN: 978-600-115-057-9.