

Curriculum Vitae

May, 2017

Ali Izadbakhsh, PhD

Assistant Professor
Chemical Engineering
Head of Chemical Engineering Department (Jun., 2015-)
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Education

- PhD, Chemical Engineering, GPA: 17.29, 2003-2009, *Sharif University of Technology*, Tehran, Iran
- MSc, Chemical Engineering, GPA: 17.87, 2000-2003, *Sharif University of Technology*, Tehran, Iran
- BSc, Chemical Engineering, GPA: 16.46, 1996-2000, *Sharif University of Technology*, Tehran, Iran
- Pre-university, Math. and Phys. , GPA> 19, 1995-1996, Tarbiat Moalem School, Bushehr, Iran
- Diploma, Math. and Phys., GPA: 18.50, 1992-1995, GPA:18.50, Shariati High School, Bushehr, Iran

Professional Experiences

- Assistant Professor, 2009 - ..., Persian Gulf University
- PhD Sabbatical Student, 2007-2008, *China University of Petroleum*
- Researcher, 2005-2007, Catalyst Division, Iran Petrochemical Research and Technology Company
- Specialist of Petroleum Coke , 2003-2005, Iralco (Iran Aluminium Company), Office of Planning, Development & Technology
- Specialist, Project: Recovery of Refinery's waste Bitumen, 2001-2002, Young Scholar Club
- Specialist, Project: Dry Cooling Tower Design, 2000-2001, Atmosphere Corporation

Research Interests

- Heterogeneous Catalysis
- Kinetics Modelling and Chemical Reactor Designs
- Renewable Energy resources
- Fuel Cells, Solar Cells
- Chemical Sensors

- Catalytic Membranes
- Design and Optimization of Chemical Processes

Courses Taught

1. Under Graduate

1. Catalysts, introduction to Synthesis, Characterization & Processes
2. Chemical Reaction Engineering
3. Unit Operations II
4. Heat Transfer I
5. Eng. Software Workshop / MATLAB

2. Graduate

- Heterogeneous Catalysts (synthesis & characterization)
- Advanced Chemical Reaction Engineering
- Advanced Optimization

Projects

- **BSc Project**
 - "Simulation and Optimization of Digestion Unit in *Bayer* Process", Supervised by Dr. F. Farhadi, Summer 2000.
- **MSc Thesis**
 - "Development and Characterization of Solid Acid Catalyst (*Sulfated Zircona*) for Isobutene *Alkylation* ", supervised by Dr. M. Kazemini, fall 2003.
- **PhD Thesis**
 - "Study of Effect of Catalyst (*SAPO-34*) Composition on Propylene Yield in *MTO* Process", supervised by Dr. F. Khorasheh and Dr. F. Farhadi.
- **Supervised MSc Student Projects**
 1. Detailed Kinetics Simulation of Catalyst Activity Loss in the MTO Catalytic Reactor using *Percolation* Theory, 2011.
 2. Synthesis of Ordered Mesoporous materials as Catalyst Support (*SBA* Series), 2012.
 3. Synthesis of Ordered Mesoporous materials as Catalyst Support (*MCM* Series), 2012.
 4. Synthesis and Evaluation of Supported Basic *Catalyst for Biodiesel* Production, 2013.
 5. Phenol Removal From Aqueous Solution By Metal Promoted TiO₂ *Photocatalyst* Supported on SBA-15, 2013.
 6. Prediction of *MWD of HDPE* using Kinetic modelling of slurry reactor of HDPE unit of Jam petrochemical complex, 2013.
 7. *CFD* Modelling of Reactor Geometry Effect on Sheeting Problem in *Fluidized Bed Polymerization Reactors* Considering Particles Charge, 2014.
 8. Investigation of Effect of Catalyst Orientation and Shape in Performance of *WGS Fixed Bed* Reactor using *CFD*, 2014.
 9. Synthesis and Characterization of Metal Promoted *SAPO-34* Using Morpholine as SDA, 2014.
 10. Synthesis and characterization of Metal promoted Ni supported on SBA-15 as a catalyst of *CPOX*, 2014.

11. Synthesis and characterization of Metal promoted Ni supported on *MCM-41* as a catalyst of *CPOX*, 2014.
12. Synthesis and Performance Evaluation of Metal Promoted Ni Supported on Ordered Mesoporous Silicas in *CPOX* (Catalytic Partial Oxidation of Methane), 2014.
13. Photocatalytic Conversion of CO₂ to valuable chemicals using *promoted TiO₂/SBA-15*, 2015.
14. Modelling of Size Distribution in Molecular Sieves Crystallization: A Case Study of *SAPO-34*, 2015.
15. Synthesis of Core Shell Ni@MCM-41 with Controllable Size, 2015.
16. Synthesis and Evaluation of Bimetallic Modified *ZSM-5* in *MTP*, 2015.
17. Modelling and CSD Prediction in Molecular Sieves Crystallization, A Case Study of *SAPO-34*.

- **Supervised BSc Student Projects**

1. Simulation of NGL Fractionation Towers In Phases 4&5 of South Pars Gas Field (SPGC)
2. Technical Study of Production of Alkyl Amines
3. Technical Study of Production of Alkyl Aryl Sulfonates
4. Simulation of Reforming Unit of Borzouyeh Petrochemical Company
5. Technical Study of Adipic Acid Production Unit
6. Technical Study of PEM Fuel Cells Manufacturing Technology
7. Technical Study of Synthesis And Application of Amberlit Resins
8. Simulation of Butene-1 Reactor of Jam Petrochemical Complex
9. Reveiw of GTL Technologies
10. Technical Study of Partial Oxidation of Methane
11. Reveiw of Zigler-Natta Polymerization Catalyst Development
12. Technical Study of Poly Ethylene Terephthalate Production
13. Design of Ammonia Synthesis Reactor Based On TEMA Heat Exchanger Standard
14. Simulation of Helium Production From Natural Gas With Aspen Plus
15. Technical Study of Xylene Separation Using Crystallization Technique
16. Design of Methyl Methacrylate Synthesis Reactor in ACH Process
17. Simulation and Searching for Thermally Optimum Design of Ammonia Synthesis Reactor in Kellogg Process
18. Simulation and Analysis of Process Conditions Effects on Performance of Fixed Bed Catalytic reactor for MTP (Methanol to Propylene)
19. Study of Structures, Composition, Detection Mechanism, Manufacturing Methods of Chemical Sensors.
20. CFD simulation of a Catalytic Fixed Bed Reactor
21. Simulation of Methanol reactor of Zagros Petrochemical Plant
22. Simulation and Analysis of Process Conditions Effects on Performance of Claus Unit in a Gas refinery
23. Simulation of Reactive Distillation Column for MTBE Production
24. Performance Evaluation of Alternative Designs of NGL Fractionation Towers
25. Survey of Market, Production Processes and Application of Paint Industry Resins
26. Detailed Design of Shell and Tube Heat Exchangers based on TEMA Standard

27. Simulation and Optimization of NaOH Solution Recovery Cascade in Pulp Industry
 28. Adsorption Simulation by using Aspen Adsim
 29. Dynamic Simulation and Optimization of Temperature History of Ethylene Oxide Reactor
 30. Simulation and Optimization of Ethylene Glycol Reactor with Recovery Column of Unit 400 of Jam Petrochemicals Plant
 31. ...
- **Research Project**
 1. Simulation of Performance of Separation Section of Butane-1 Unit at the Condition of *Hexene-1 Production*, (A Petrochemical Complex)
 2. Synthesis and Evaluation of Supported Basic Catalyst for Biodiesel Production, 2015 (*Vice-Presidency of Science and Technology*).
 3. Synthesis and Evaluation of Ordered Mesoporous Silica Supported Catalyst of Partial Oxidation of Methane in a Fixed Bed Laboratory Reactor, 2013 (*PGU Vice chancellor of Research Affairs*).
 4. Lab-Scale Synthesis of Ordered Mesoporous Silicas as Catalyst Support, *Roshd Center of Booshehr*, 2012.
 5. Application of Percolation Theory in the Simulation of Activity Loss of MTO Fixed Bed Reactor, 2011 (*PGU Vice chancellor of Research Affairs*).
 6. Development of Catalysis Roadmap of Booshehr province (*Persian Gulf Park of Science and Technology*), 2011.
 7. Methanol Catalyst Plant Feasibility Study, 2005, *Iran Petrochemical Research and Technology Company*
 8. Kinetic Modelling of OCM Reactor, 2006, *Iran Petrochemical Research and Technology Company*
 9. Recovery of Refinery's waste Bitumen, 2001-2002, *Young Scholar Club*

Publications

Book Translation

1. *Surfaces*, Oxford Chemistry Primers, Gary Attard, Colin Barnes, 1998.

Journal Papers

1. Ali Izadbakhsh, Fatholah Farhadi, Farhad Khorasheh, Zi-Feng Yan, "Effect of heating profile on desorption curve in temperature programmed desorption analysis: case study of acid sites distribution of SAPO-34", *Journal of Porous Materials*, 2008.
2. Ali Izadbakhsh, Fatholah Farhadi, Farhad Khorasheh, S. Sahebdehfar, M. Asadi, Z.F. Yan, "Key parameters in hydrothermal synthesis and characterization of low silicon content SAPO-34 molecular sieve", *Microporous and Mesoporous Materials*, 2009.
3. Ali Izadbakhsh, Fatholah Farhadi, Farhad Khorasheh, Saeed Sahebdehfar, Musa Asadi, Yan Zi Feng, "Effect of SAPO-34's composition on its physico-chemical properties and deactivation in MTO process", *Applied Catalysis A: General* 364, 2009.

4. Ali Izadbakhsh, Farhad Khorasheh, "Simulation of Activity Loss of Fixed Bed Catalytic Reactor of MTO Conversion using Percolation Theory", Chemical Engineering Science, 2011.
5. Ali Ayzdbkhsh, H. Rahideh, F. Khorasheh, Application of Percolation Theory in Modelling of Activity Loss of Fixed Bed Reactor of Catalytic Conversion of Methanol to Olefin, Journal of Chemistry and Chemical Engineering, Vol. 30, No. 4, Winter 2011 (farsi).
6. Ali Izadbakhsh, Alireza Khatami, Mathematical Modeling of Methanol to Olefin Conversion over SAPO-34 Catalyst Using Percolation Concept, Reaction Kinetics, Mechanisms and Catalysis, 2014.
7. Ali Izadbakhsh, Abbas Sajjadia, Khodabakhsh Niknam, Effect of Synthesis Conditions on Textural Properties of MCM-41, Journal of Oil Gas Petrochemical Technology, 3 (1), 2017.
8. Fatemeh Goudarzi, Ali Izadbakhsh, Evaluation of K/SnO₂ performance as a solid catalyst in the trans-esterification of a mixed plant oil , Reaction Kinetics, Mechanisms and Catalysis (2017). doi:10.1007/s11144-017-1176-0.

Conference Papers

1. A. Izadbakhsh, M. Vosughi far, F. Farhadi, "Optimization of Digestion Unit in Bayer Process". ICSOBA 2000, international Conference, Tehran, Iran, 2000
2. S. Sahebdel Far, A. Izadbakhsh, M. Kazemeini, Synthesis and Characterization of Solid Acid Catalyst For Butene Alkylation, the 8th National Congress of Chemical Engineering, Mashhad, Iran, 2003.
3. S. Sahebdel Far, A. Izadbakhsh, Modelling of Fixed Bed Reactor of Oxidative Coupling of Methane, the 10th National Congress of Chemical Engineering, Iran, 2005 (farsi).
4. S. Sahebdel Far, Ali Izadbakhsh, M. Kazemeini, F. Khorasheh, Evaluate the Exponential Model to Predict the Deactivation of Alkylation Isobutane / Butene Catalyst, the 11th National Congress of Chemical Engineering, Tehran, Iran, 2006 (farsi).
5. Ali Izadbakhsh , F. Farhadi, F. Khorasheh, S. Sahebdehfar, M. Asadi , "Synthesis of Low Silicon SAPO-34", National Congress of Youth Chemical Engineers, Qingdao, China, 2007
6. A. Izadbakhsh, A. R. Khatami, Application of Percolation Theory in the Transient Modelling of Catalytic Conversion Of Methanol To Olefin Reactor Performance With Detailed Kinetics, The First International Conference On Oil, Gas, Petrochemical And Power Plants, Tehran, Summer 2011 (farsi).
7. A. Izadbakhsh, A. R. Khatami, H. Rahideh, Study of Effect of Process Conditions on Simulation Results of Methanol To Olefin Process With Detailed

Kinetic and Percolation Approach, 14th National Congress of Chemical Engineering, Tehran, Iran, Fall 2011 (farsi).

8. A. Izadbakhsh, Kh. Niknam, S. A. Sajadi, Evaluate the Effect of Mixing Temperature on the Hydrothermal Synthesis of Mesoporous MCM-41, The First National Conference on Industrial Catalysts, Iran, 2012 (farsi).
9. A. Izadbakhsh, Kh. Niknam, M. Sadeghi, Rapid Synthesis of Ordered Mesoporous Silica SBA-15 at Low pH, The First National Conference on Industrial Catalysts, Iran, 2012 (farsi).
10. M. Sadeghi, A. Izadbakhsh, Kh. Niknam, Mehrdad Sotoudeh, "Influence of Acid Concentrations On The Physical Properties of SBA-15 Synthesized Under Short Ripening Period Condition", The 8th International Chemical Engineering Congress & Exhibition (IChEC 2014), Kish, Iran, 2014.
11. S. A. Sajadi, A. Izadbakhsh, Kh. Niknam, Sardar Khoramian, "The Effect of THE NH₄OH / H₂O Molar Ratio On The Textural Properties of MCM-41", The 8th International Chemical Engineering Congress & Exhibition (IChEC 2014), Kish, Iran, 2014.
12. F. Goudarzi, A. Izadbakhsh, Review Study of Biodiesel Production Using of Acidic, Basic, And Enzyme Catalysts, The First National Conference On New Technologies In The Chemical and Petrochemical, Tehran, April 2014 (farsi).
13. M. Sadeghi, A. Izadbakhsh, Kh. Niknam, S. A. Sajjadi, M. Setoude, Effect of Aging Step on the Texture of SBA-15 Prepared at Short Ripening Time, The First National Conference of New Chemical and Petrochemicals, Tehran, 2014.
14. S. A. Sajjadi, A. Izadbakhsh, Kh. Niknam, M. Sadeghi, S. Khoramianm, Effect of Thermal Conditions on the Yield and Morphology of MCM-41, The First National Conference of New Chemical and Petrochemicals, Tehran, 2014.
15. F. Goudarzi, A. Izadbakhsh, M. Mofarahi, Comparing performance of nanocatalyst KOH/ γ -Alumina and CaO₂ /SnO₂ for biodiesel production, The First National Conference on Nanotechnology in Oil, Gas and Petrochemical Industry, Tehran, May 2014 (farsi).
16. M. Bostanian, A. Izadbakhsh, Kinetic Modelling and Simulation of HDPE Slurry Polymerization Reactor with Ziegler-Natta Catalysts: Rate Constants Estimation, The Second Scientific Conference of Process Engineering, Tehran, June 2014 (farsi).
17. A. Izadbakhsh, E. Jokar, Review of Effect of Metals on Performance of SAPO-34 in MTO Conversion, International Conference in New Research of Chemistry and Chemical Engineering, Tehran, 2015 (farsi).
18. A. Izadbakhsh, E. Jokar, Review of Effect of Metals Content on Performance of SAPO-34 in MTO Conversion, International Conference in New Research of Chemistry and Chemical Engineering, Tehran, 2015 (farsi).

19. A. Izadbakhsh, E. Jokar, Review of Mechanisms of Si Incorporation in SAPO-34 Framework, International Conference in New Research of Chemistry and Chemical Engineering, Tehran, 2015 (farsi).
20. A. Izadbakhsh, E. Jokar, Review of Performance Of SAPO-34 Modified With Metals Alloy in MTO Conversion, International Conference in New Research of Chemistry and Chemical Engineering, Tehran, 2015 (farsi).
21. M. J. Diyanat, A. Izadbakhsh, H. Zilouei, Synthesis of Ti-SBA-15 Photocatalyst for Phenol Destruction in Water, 1th Biennial Conference on Persian Gulf Oil, Gas and Petrochemistry (Energy & Environment), 2016.
22. E. Jokar, A. Izadbakhsh, Effect of using Morpholine as Template on Physico-Chemical Properties on SAPO-34 Molecular Sieve, 1th Biennial Conference on Persian Gulf Oil, Gas and Petrochemistry (Energy & Environment), 2016.
23. Z. Shokuhi Sholi, A. Izadbakhsh, A. M. Sanati, Effect of Ce and Cu as Promotor on Ni-SBA-16 Performance in Partial Oxidation of Methane (POM), 1th Biennial Conference on Persian Gulf Oil, Gas and Petrochemistry (Energy & Environment), 2016.
24. Z. Roosta, A. Izadbakhsh, A.M Sanati, SH. Osfour, Synthesis and characterization of NiO@MCM-41 core-shell nanocomposite, [Accepted in](#) 4th National Conference of Iran Chemistry, Chemical Engineering And Nano, Tehran, Iran, Dec. 2016.
25. Naser Azadpour, Ali Izadbakhsh, Mohammad Javad Dianat, Conversion of CO₂ to valuable chemicals by promoted TiO₂ photocatalyst, [Accepted in](#) 4th National Conference of Iran Chemistry, Chemical Engineering And Nano, Tehran, Iran, Dec. 201 (farsi).
26. A. Savameri, A. Izadbakhsh, B. Zarenezhad, Synthesis and Evaluation of Heterogeneous Amino-Functionalized Mesoporous Carbon Catalyst in Biodiesel Production from Soybean Oil, 2nd Annual Conference Green Engineering Technologies for a Sustainable Future, Tehran, Iran, 2017 (farsi).
27. J. Bashiri Deilami, A. Izadbakhsh, R. Fatehi, Study of the Effect of Electrical Charge on the sheeting Problem in the fluidized bed Polymerization Reactor using CFD, 4th International Conference On Oil, Gas and Petrochemical, Tehran University, Iran, 2017 (farsi).

Unpublished Articles or Presentations

Ali Izadbakhsh, Oscillating Kinetics in Heterogeneous Catalytic Reaction (Farsi).

Presentation; A Short Lecture to Think, from Universe to the Origin of Life on the Earth, May 2017.

Computer Skills

Gaussian 2003 & Material Studio (Computational Chemistry), Ansys Fluent (CFD), Hysys & Aspen, Petro-sim, Matlab, Programming with VB, Delphi, Pascal, VC++, Fortran.

Analytical and Characterization Techniques

GC, XRD, NMR, TPD/TPR/TPO, FTIR, UV-Vis, TG, BET, XPS, AES, EXAFS