MOZAFFAR ABDOLLAHIFAR

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RESEARCH INTERESTS

- Heterogeneous Catalysis.
- Design and Preparation of New Catalysts and Supports.
- Nanotechnology.
- Natural Gas Conversions and Utilization.
- Hydrogen Technology
- Thermodynamic.

EDUCATION

Sahand University of Technology (Tabriz, Iran)
Master of Sciences (M.S): *Chemical Engineering (2007- 2010)*

- Synthesis of Nanocatalyst for CH4 Reforming Using Ultrasonic Energy.
- Thermodynamic Evaluation of Partial Oxidation of Methane for Natural Gas Utilization.
- Synthesis of perfluorooctyl alumina-high concentration range for ozonation processes.
- Extra class taken in CHEMKIN Software.
- Placed first in Chemical Engineering Department, Sahand University of Technology.

Shahid Rajaee Teacher Training University (Tehran, Iran)
Bachelor of sciences (B.S): *Chemical Industries (2004-2006)*

- Extra class taken in HYSYS Software.
- Consistently held average above 80% as well as achieving Dean's List for 2 terms.
- Placed first in class in all semesters.

Shahid Beheshti Technical Junior College (Orumieh, Iran)
Associate of Sciences (A.S): *Chemical Industries (2001-2003)*

- Consistently held average above 80% as well as achieving Dean's List for 3 terms.
- Placed first in class in all semesters.

COURSES TAUGHT

Islamic Azad University
Chemical Engineering Courses

- Fluid Mechanics (I) & (II), Islamic Azad University, Kermanshah branch, Iran (2011 - Now).

Institute of Pouran Pazhohesh
Chemical Engineering Courses

- Heat Transfer (I) & (II), Institute of Pouran Pazhohesh, Tabriz, Iran (2008 - 2010).
- Chemical Engineering Thermodynamics (I) & (II), Institute of Pouran Pazhohesh, Tabriz, Iran (2008 - 2010).
- Mass Transfer, Institute of Pouran Pazhohesh, Tabriz, Iran (2008 - 2010).
- Chemical Engineering Unit Operation (I) & (II), Institute of Pouran Pazhohesh, Tabriz, Iran (2008 -

2010).

Mechanical Engineering Courses

- Heat Transfer (I) & (II), Institute of Pouran Pazhohesh, Tabriz, Iran (2008 - 2010).
- Engineering Thermodynamics (I) & (II), Institute of Pouran Pazhohesh, Tabriz, Iran (2008 - 2010).

AWARDS

- **Distinguished graduate** of Sahand University of Technology, (**1st rank** among 50 M.S graduates), Tabriz, Iran (2010-2011).
- **Distinguished Chemical Engineering Research** Award, Sahand University of Technology, Tabriz, Iran (2009-2010).
- **Distinguished graduate** of shahid Rajaee Teacher Training University (**1st rank** among 38 graduates), Tehran, Iran (2004-2006).
- **Distinguished graduate** of shahid Beheshti technical junior college (**1st rank** among 45 graduates), Orumieh, Iran (2001-2003).
- **1st rank** in scientific and practical competition in chemical industries, Kermanshah province, Iran (2000)
- **2nd rank** in scientific and practical competition in chemical industries, 1st region of Iran (7 provinces) (2000).

PROFESSIONAL EXPERIENCE

Research Assistant, *Chemical Engineering Dept., Sahand University of Technology, Tabriz, Iran.*

- Thermodynamic Evaluation of Partial Oxidation of Methane for Natural Gas Utilization (2007-2009).
- Synthesis of Nanocatalyst for CO_2 Reforming CH_4 Using Ultrasonic Energy (2008-2010).
- Synthesis Nano perfluorooctyl alumina-high concentration range for ozonation processes (2008-2009).
- Synthesis of Nanocatalyst for Methanol Reforming Using Ultrasonic Energy (2009-2010).

Teaching Assistant, *Chemical Engineering Dept., Sahand University of Technology, Tabriz, Iran.*

- Advanced numerical analysis: Preparation of homework assignments, grading of homework (*Sept-Dec 2008*).
- Advanced Mass Transfer: Preparation of homework assignments, grading of homework (*Feb-May 2009).*
- Multicomponent Separation Processes: Preparation of homework assignments, grading of homework (*Feb-May 2009).*

Teaching Assistant *Science Faculty, Shahid Rajaee Teacher Training University, Iran.*

- Chemical Engineering Unit Operations: assignment assistance (*Feb-May 2006*)

PUBLICATIONS & PRESENTATIONS

Journals:

1. **M.Abdollahifar**, M.Haghighi, "Synthesis and Characterization of CuO/ZnO/Al2O3 nanostructure from Their Nitrates and AlOOH using urea-nitrate combustion, (in preparation).
2. A.Ebadi, **M.Abdollahifar**, S.Shafiei, "Modified Perfluorinated Alumina with High Adsorption Capacity for Removal of Organic Pollutants from Water" (in preparation).
3. **M.Abdollahifar**, M.Haghighi, A.A.Babaluo, "Syngas production from CO2 reforming of methane over Ni-Co/MgO-MgAl2O4 nanocatalysts: effect of synthesis method", International Journal on Nanoscience and Nanotechnology (IJNN) (Submitting).
4. **M.Abdollahifar**, M.Haghighi, A.A.Babaluo, "Dry reforming of methane over Ni/MgO-MgAl2O4 nanocatalyst synthesized using sonochemistry method", Journal of Chemical Technology & Biotechnology (Submitted).
5. **M.Abdollahifar**, M.Haghighi, A.Ebadi, "Effect of Synthesis Conditions of Boehmite AlOOH from $Al(OH)_3$ on its Physicochemical Characteristics", Iranian Journal of Chemical Engineering, (Submitted).
6. M.Haghighi, **M.Abdollahifar** and Dang-ke Zhang, "Thermodynamic Analysis of Direct Partial Oxidation of Methane to Benzene", Iranian Journal of Chemical Engineering, (Submitted).
7. **M.Abdollahifar**, H.Nokoui, "A review on the new production methods of synthesis gas", journal of Farayandeno, (Submitted).
8. **M.Abdollahifar**, M.Haghighi, A.A.Babaluo, "Evaluation of Performance of Different Catalysts in Production of Synthetic Gas Using Dry Reforming of Natural Gas", journal of Farayandeno, (Accepted).
9. **M.Abdollahifar**, M.Haghighi, R.Alizadeh "Thermodynamic Modeling Tri-Reforming of Methane", Iranian Journal of Chemical Engineering, (Accepted).
10. **M.Abdollahifar**, M.Haghighi "Study of methanol conversion methods as energy source for fuel cell", *International journal of oil, gas and energy*, No.6, pp: 32-38 (2011).
11. E. Fatehifar, **M.Abdollahifar,** "Life cycle processes and its application in the assessment of environmental effects Petrochemical", Iranian Journal of Chemical Engineering, Vol.9, No.52, pp: 21-27 (2011).
12. **M.Abdollahifar**, M.Haghighi "Thermodynamic Evolution of Methane Conversion to Alcohols Using CHEMKIN", journal of Farayandeno, 23, pp 59-66 (2010).

International conferences:

13. A.Ebadi, **M.Abdollahifar** and S.Shafiei, "Modified Perfluorinated Alumina with High Adsorption Capacity for Removal of Organic Pollutants from Water", The 7th International Chemical Engineering Congress & Exhibition (ICHEC 2011), Kish, Iran, (2011)
14. **M.Abdollahifar**, M.Haghighi, A.A.Babaluo, "SYNTHESIS AND CHARACHTERIZATION OF Ni/AlOOH (BOEHMITE) NANOPARTICLES USING ULTRASOUND ENERGY", International congress on Nanoscience and Nanotechnology, Shiraz University, Shiraz, Iran. (2010).
15. **M.Abdollahifar**, M.Haghighi, A.A.Babaluo, "SONOCHEMICALLY ASSISTED SYNTHESIS OF $Ni/MgAl_2O_4$ SPINEL NANOPARTICLES", International congress on Nanoscience and Nanotechnology, Shiraz University, Shiraz, Iran. (2010).
16. **M.Abdollahifar**, M.Haghighi, S.R.Yahiavi "CO-SYNTHESIS AND CHARACHTERIZATION OF $CuO/ZnO/Al_2O_3$ NANOCOMPOSTE USING UREA-NITRATE COMBUSTION METHOD", International congress on Nanoscience and Nanotechnology, Shiraz University, Shiraz, Iran. (2010).
17. **M.Abdollahifar**, M.Haghighi, S.R.Yahiavi "Synthesis and Characterization of Mixed Oxides of Copper, Zinc and Aluminium from Their Nitrates and Urea Hydrolysis", *13th Iranian National Chemical Engineering Congress& 1st International Regional Chemical and Petroleum Engineering*, Razi University, Kermanshah, Iran. (2010).
18. **M.Abdollahifar**, M.Haghighi, "Physicochemical Characteristics of Sonochemically $MgAl_2O_4$

Spinel Nanoparticles in Al/Mg of 1.5 in Precursors", *13th Iranian National Chemical Engineering Congress& 1st International Regional Chemical and Petroleum Engineering*, Razi University, Kermanshah, Iran. (2010).

19. **M.Abdollahifar**, M.Haghighi, "Synthesis and Characterization of Ni(10%)/Y Nanostructured Catalyst Using Ultrasound Energy", *13th Iranian National Chemical Engineering Congress& 1st International Regional Chemical and Petroleum Engineering*, Razi University, Kermanshah, Iran. (2010).
20. **M.Abdollahifar**, M.Haghighi, A.A.Babaluo, "Synthesis of Ni-Co/$MgAl_2O_4$ Nanostructured Catalyst Using Ultrasound Energy", *13th Iranian National Chemical Engineering Congress& 1st International Regional Chemical and Petroleum Engineering*, Razi University, Kermanshah, Iran. (2010).
21. **M.Abdollahifar**, M.Haghighi, "Thermodynamic Analysis of CO_2 Conversion to Light Hydrocarbons", *13th Iranian National Chemical Engineering Congress& 1st International Regional Chemical and Petroleum Engineering*, Razi University, Kermanshah, Iran. (2010).
22. M.Haghighi, **M.Abdollahifar** and Dang-ke Zhang, "Thermodynamic Analysis of Direct Partial Oxidation of Methane to Benzene", The 6th International Chemical Engineering Congress & Exhibition (ICHEC 2009), Kish, Iran, (2009).

National conferences:

23. **M.Abdollahifar**, M.Haghighi, H.Nokoui, "Thermodynamic Analysis of Ethanol Conversion Used in Hydrogen Production for Fuel Cell Applications", National Conference on High Technologies in Chemical Industries, Tehran, Iran (Submitted).
24. **M.Abdollahifar**, M.Haghighi, A.A.Babaluo, S.R.Yahiavi, "Ultrasound assisted the Ni/Al_2O_3-MgO Nanocatalyst with Cobalt synthesized by sonochemestry method using in Dry reforming Methane ", National Conference on High Technologies in Chemical Industries, Tehran, Iran (Submitted).
25. **M.Abdollahifar**, M.Haghighi, M.Gheshlaghi, M.Torabfam "Thermodynamic Evaluation of Dry reforming Propane for syngas production", National Conference on High Technologies in Chemical Industries, Tehran, Iran (Submitted).
26. **M.Abdollahifar**, M.Haghighi, A.A.Babaluo, S.R.Yahiavi, "Ultrasound assisted in synthesis of Ni/Al2O3 for production H2 from Dry Reforming", The 2nd conference on Hydrogen and Fuel Cell, K.N Toosi University of Technology, Tehran, Iran (Accepted).
27. S.R.Yahiavi, M.Haghighi, **M.Abdollahifar**, S.Shafiei, F.Rahmani, "Synthesis of Ni(10%)-Co(8%)/Al_2O_3-MgO Nanocatalysts with Al/Mg=5 Using Ultrasound Energy for H_2 Production via Reforming Process", The 2nd conference on Hydrogen and Fuel Cell, K.N Toosi University of Technology, Tehran, Iran (Accepted).
28. **M.Abdollahifar**, M.Haghighi, A.A.Babaluo, "CO2 Reforming Methane using Ni-Co/Al2O3-MgO Nanocatalys, synthesized by ultrasound energy ", 9th student Conference on nanotechnology, Tarbiat Modaras University, Kermanshah, Iran. (2011).
29. **M.Abdollahifar**, M.Haghighi "Thermodynamic analysis: Dry reforming of ethanol", The 8th Student National Chemical Engineering Congress, Kermanshah, Iran (2010).
30. **M.Abdollahifar**, M.Haghighi, A.A.Babaluo, "Sonochemically Assisted Synthesis of Ni-Cu/Al_2O_3 Nanocatalys", 1st Conference on Fuel, Energy and Environment National Congress, Kermanshah University Of Technology, Kermanshah, Iran. (2010).
31. **M.Abdollahifar**, M.Haghighi, M.Saki "Thermodynamic Analysis of Methanol Autothermal Reforming Used in Hydrogen Production for Fuel Cell Applications", 1st Conference on Fuel, Energy and Environment National Congress, Kermanshah University Of Technology, Kermanshah, Iran. (2010).
32. **M.Abdollahifar**, M.Haghighi "Catalytic Performance of Methanol Steam Reforming Used in Hydrogen Production as a Potential Fuel Recourse in the Future", 1st Conference on Fuel,

Energy and Environment National Congress, Kermanshah University Of Technology, Kermanshah, Iran. (2010).

33. **M.Abdollahifar**, M.Haghighi "Thermodynamic Modeling of CO_2 to Methanol", 1st Conference on Fuel, Energy and Environment National Congress, Kermanshah University Of Technology, Kermanshah, Iran. (2010).
34. **M.Abdollahifar**, M.Haghighi "Study of methanol conversion methods as energy source for fuel cell", Conference & Exhibition on Energy Management & Conservation, Olympic Hotel, Tehran, Iran, (2010).
35. **M.Abdollahifar**, M.Haghighi, "Comparison of direct partial oxidation of methane to benzene and two carbon hydrocarbons", The Third Fuel & Combustion Conference of IRAN, Amirkabir University of Technology, Tehran, Iran (2010).
36. **M.Abdollahifar**, M.Haghighi, N.Asgari, "Thermodynamic modeling OSRM process for producing synthesis gas", The Third Fuel & Combustion Conference of IRAN, Amirkabir University of Technology, Tehran, Iran (2010).
37. B.Khabiri, M.Haghighi**, M.Abdollahifar**, "Kinetic Evaluation for Estimation of Pollutants Produced in Combustion of Benzene and Methane in a Tubular Box", Third National Conference on Safety Engineering and HSE Management, Sharif University of Technology, Tehran, Iran (2010).
38. N.Asgari, M.Haghighi**, M.Abdollahifar**, "Evaluation of Strategic Methods for Control, Capture and Sequestration of CO_2", Third National Conference on Safety Engineering and HSE Management, Sharif University of Technology, Tehran, Iran (2010).
39. **M.Abdollahifar**, M.Haghighi, M.Rakhshani, J.Shiri, "Kinetic Modeling of Thermal Oxidation of Natural Gas in the Thermal power home stacks", Third National Conference on Safety Engineering and HSE Management, Sharif University of Technology, Tehran, Iran (2010).
40. **M.Abdollahifar**, M.Haghighi, A.A.Babaluo "On the Catalytic Performance of CO_2 Reforming of Methane to Synthesis Gas", 1st Conference on Carbon Market and Clean Development Mechanism in Petrochemical and Allied Industries, Tehran, Iran, (2009).
41. **M.Abdollahifar**, E.Fatehifar, S.Vosugh Mahmoudi, "Green Roofs" The 3rd Conference and Exhibition on Environmental Engineering, Tehran University, Tehran, Iran, (2009).
42. **M.Abdollahifar**, M.Haghighi, "Thermodynamic Evaluation of Thermal Oxidation of Benzene and Methane in Industrial Flares"1st Conference oil and polymer and petrochemical, Shiraz, Iran, (2008).
43. **M.Abdollahifar**, M.Haghighi, E.Fatehifar, H.Nokoui, "Evaluation of Thermal Oxidation of VOCs, H2S and CH4 in Oil Industries Flares", technical Seminar on oil, gas and Environment, University Shiraz, Shiraz, Iran, (2008).
44. H.Morshedi, M.Haghighi, **M.Abdollahifar**, S.Vosugh Mahmoudi, "Thermodynamic Evaluation of Steam Addition on Combustion of Natural Gas and Toluene in Oil Industries Flare", technical Seminar on oil, gas and Environmental, University shiraz, shiraz, Iran, (2008).
45. **M.Abdollahifar**, M.Haghighi "Thermodynamic Evaluation of Thermal Oxidation of BTE and Natural Gas in Petrochemical Flares", Azerbaijan university of Tarbiat Moallem, Azershahr, Tabriz, Iran, (2008).

PATENTS

1. M.Haghighi**,** A.A.Babaluo, **M.Abdollahifar**, "Synthesis of Ni-Co/Al2O3-MgO Nanocatalysts Using Ultrasound Energy for Reforming of CH4/CO2", Iran Patent-72848-2011.
2. M.Haghighi**,** A.A.Babaluo, **M.Abdollahifar**, "CH4/CO2 Reforming over Ni-Cu/Al2O3 Nanocatalysts Synthesized via Sonochemistry Method", Iran Patent. (Submitted).
3. A.Ebadi, **M.Abdollahifar,** S.Shafiei, "Modified Perfluorinated Alumina with High Adsorption Capacity for Removal of Organic Pollutants from Water"**.** Iran Patent. (In preparation).

TECHNICAL REPORTS

1. "Thermodynamic Evaluation of Partial Oxidation of Methane for Natural Gas Utilization" Department of Chemical Engineering, Sahand University of Technology, Tabriz, Iran, 2009.
2. "Synthesis of Nanocatalyst for Methanol Reforming Using Ultrasonic Energy" Department of Chemical Engineering, Sahand University of Technology, Tabriz, Iran, 2010.
3. "Synthesis of Nanocatalyst for CH4 Reforming Using Ultrasonic Energy", M.Sc. thesis, Department of Chemical Engineering, Sahand University of Technology, Tabriz, Iran, 2010.

TRAINING AND WORK EXPERIENCE

- **Training:** 2 Months Training Period in the Kermanshah oil refinery, Iran (2006)
- **Advanced GC**: 4 day Training Period in the Research Institute of Petroleum Industry (RIPI), Iran (2008).

PROFESSIONAL AFFILIATIONS

- SPE (Society of Petroleum Engineering), Member (2007 to now).
- Reactor & Catalysis Research Center, RCRC, Member (2007 to now).
- Iranian association of chemical engineering (2007 to now).
- Iranian Nanotechnology Society (2008 to now).
- Iran Invertors Association (2011 to now).

COMPUTER SKILLS

- System and Office: Windows, Office Programs …
- Chemical Engineering Software: CHEMKIN, HYSYS …

LANGUAGE SKILLS

- English (good)
- Farsi (native)
- Kurdish (mother tongue)

REFERENCES

Dr. Mohammad Haghighi, Assistant Professor of Chemical Engineering Department, Sahand University of Technology, Sahand New Town, Tabriz, Iran. **haghighi@sut.ac.ir**

Dr. Esmaeil Fatehifar, Associate Professor of Chemical Engineering Department, Sahand University of Technology, Sahand New Town, Tabriz, Iran. **fatehifar@sut.ac.ir**

Dr. Amanollah Ebadi, Assistant Professor of Chemical Engineering Department, Sahand University of Technology, Sahand New Town, Tabriz, Iran. **ebadi@sut.ac.ir**