Curriculum Vitae

Aligholi Niaei, PhD

Prof. of Chemical Engineering
Specializing in Catalyst & Chemical Reaction Enineering
Department of Chemical & Petroleum Engineering, University of Tabriz, Tabriz, Iran

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Educational Background:

PhD, Chemical Engineering, Tarbiat Modarres University-Iran, 2003
Catalysis Design & Chemical Reaction Enineering in CRE

M.Sc, Chemical Engineering, Tarbiat Modarres University-Iran, 1991
Thermal & Catalyic Process, Mathematical Modeling &Simulation in CRE

B.Sc, Petrochemical Engineering, Isfahan University of Technology, 1987
Design and Economical and Fisibeality study of Production of Nylon 6.6

Research Activity & Interests:

Energy Conversion & Storage

- *Porous Perovskites with application in Energy Conversion and Storage Perovskite-Based Solar Cells: Synthesis, Charachterization and Future Perspectives*
- *Hybrid Perovskite-Zeolites with application in Electrocatalysts, Energy Conversion and Storage*
- *Porous Perovskites with application in Hydrogen Production-OER, HER &SOEC*
- *Perovskite and its Electrical & Electormagnetic Properties*
- *Modeling & Simulation of Perovskites and their Applications in Energy Sector with COMSOL*

Heterogeneous Catalysis (Especially in Perovskites) & Charachterizations

- *Perovskites and H2 prodution by Reforming Processes: Steam Reforming- Dry Reforming*

- *Catlyst Characterizations: physical and chemical structure of catalysts in oxidation and reduction, adsorption and desorption reaction*
- *Catlysts Activity, Stability & Persistence against coke formation and deactivation*
- *DeNOx NOx+CO exhust Perovskite catalyst with different reductants: NH3, CO, H2, Hydrocarbons (Automative exhaust converter), Sponsored by Iranian Nanotechnologhy Organization*
- *VOC's removal by Catalytic Oxidation using Perovskite, Spinel, Modified ZSM-5, by some transition and noble metal (single or bimetal structure) and investigation of catalyst deactivation*

Catalytic & Thermal Cracking Reactions

- *Syngas process H2 +CO: Steam Methane Reforming, Dry Reforming (CH4+CO2) & Partial Oxidation of CH4*
- *Catalytic Gas to Liquids, GTL-FTO: Fischer-Tropsch Catalysts & Processes, With different Supports Approach*
- *Study of Coke Formation in Thermal & Catalytic Cracking reactors and Effect of Coke inhibitors on coking rate- Study of Product Distribution in Catalytic Cracking*
- *Hydrocarbon Processing: Methanol to Olefins (MTO) & Methanol to Propylene (MTP), Methanol to Gasoline (MTG) and DHP Process over modified Catalysts, Zeolites, SAPO-34 (Bifunctional transition and noble metal)*
- *Hydrogen Production with reforming process in Micro Reactor Systems*

Nano Catlytic Materials & Self Cleaning Surfaces

- *Photo Catalysts: Self Cleaning and antifoulant in Membrane Reactors*
- *Self Cleaning surfaces by Photocatalytic systems for remove of NOx and CO from air and commercial building surfaces*
- *Smart building materials for remove of VOC pollutants from air of Indoor and comercial building surfaces, Self Cleaning Surfaces, Tiles, Glasses, Brick- antifoulant and anti bacterial*
- *Self Cleaning, anti static and anti reflection with application in Solar Panels*

CO2 Utilization

- *Conversinon of CO2 to Methane, Methanol & Light Olefins - Hydrocarbons by Catalytic & Photocatalytic systems*
- *Dry Reforming, Conversion of CO2 + Methane to Hydrocarbons by Perovskite catalysts and other commercial catalysts*
- *CO2 Capture & CO2 Conversion to Hydrocarbons (with Catalytic Approach)*

Process Modeling, Simulation & Optimization in CRE

- *Mathematical Modeling & Simulation of Chemical Reaction Engineering Processes*
- *Modeling & Optimization of Catlyst Design & Catalytic & Thermal Process by hybrid ANN- GA*
- *LCA: Life Cycle Assesement of Electrochemical and Electro Catlaytic Process*
- *Kinetic modeling of thermal and catalytic process using Artificial Neural Network and Genetic Algorithm*

Some of New Projects 2022 joint with the University of Sakarya
Projects as joint international and MSc- PhD thesis proposal were considered (Under Coordınatıon of Dr Nagihan Delibas, Prof. Ali Coruh, Prof. Aligholi Niaei):

1. **ULIP 2022-16-36-36: Joint Project between The University of Sakarya-Turkey & University of Tabriz- Iran, in the framework of Intemational Scientific Research Projects (BAP):** Advanced Perovskite Materials with Special Electrical and Ion Transport Characteristics as Superior and Powerful Platforms for Catalyst, Energy Conversions and Storage Applications, Directors: Dr. Nagihan Delibash and Professor Aligholi Niaei

2. **LUTEP-Tez Projesi 2022-724-118: Master Student Thesis Proposal- *University of Sakarya*:**
   Title: *Investigation of the Structure and Composition of Electron Transport Materials in Perovskite Solar Cells from the Perspective of SCAPS-1D Simulation; Under supervision of* Dr. Nagihan Delibash and Professor Aligholi Niaei *(Undergoing)*

3. **LUTEP-Tez Projesi 2022-724-118: Master Student Proposal- *University of Sakarya*:**
   Title: *Investigation of* $LaxSr_{1-x}FeyM_{1-y}$*(M: Mn, Co, Ni, Cu)O3 Porous Perovskite and Study of Crystal Structure, Electrical and Ion Transport Properties with Super Capacitor Application* Dr. Nagihan Delibash and Professor Aligholi Niaei *(Undergoing)*

4. **Research Project proposal- *University of Sakarya (Mahboobe Ejtemaee-Postdoc)*:**
   Title: *Study of Ceramic materials, ZeoliteA and ZSM5 Crystal Structure, Electrical and Electromagnetic Properties with application in Electronic devices* Dr. Nagihan Delibash, Prof. Prof. Ali Coruh and Prof. Aligholi Niaei *(Undergoing)*

5. ***Joint PhD Student- University of Tabriz (Elham Mahmoudi)***
   Title: Perovskite and Hydrogen Production via Water Splitting Methods, Supervisor: Aligholi Niaei, Cosupervisor: Nagihan Delibas (Undergoing)

6. ***Joint MSc Student- University of Tabriz (Mohammad Ahangari)***
   Title: Perovskite and Supercapasitors, Supervisor: Aligholi Niaei, Cosupervisor: Nagihan Delibas, (Undergoing)

7. ***Joint MSc Student- University of Tabriz (Zahra Yadi),***
   Title: Perovskite and Lithium Ion Battery, Supervisor: Aligholi Niaei, Cosupervisor: Nagihan Delibas, (Undergoing)

8. ***Joint MSc Student- University of Tabriz (Asgar Moradi),***
   Title: Perovskite Solar Cell and Simulation by SCAPS 1D, Supervisor: Aligholi Niaei, Cosupervisor: Nagihan Delibas, (Graduated)

9. ***Joint MSc Student- University of Tabriz (Seyyed Reza Hosseini),***
   Title: Perovskite Solar Cell ETL and Simulation by COMSOL, Supervisor: Aligholi Niaei, Cosupervisor: Nagihan Delibas, (Graduated)

International Research Collaborations

2022	**ULIP 2022-16-36-36: Joint Project between The University of Sakarya-Turkey & University of Tabriz- Iran, in the framework of Intemational Scientific Research Projects (BAP):** Advanced Perovskite Materials with Special Electrical and Ion Transport Characteristics as Superior and Powerful Platforms for Catalyst, Energy Conversions and Storage Applications, Directors: Dr. Nagihan Delibash and Professor Aligholi Niaei, Prof. Dr. Ali Coruh
2021-Continue	TUBITAK Program, Department of Physics, Faculty of Art and Science, University of Sakarya, Sakarya, Turkey (Ass. Prof. Dr. Nagihan Delibas & Prof. Dr Ali CORUH)
2017- continue	Department of Physical Chemistry, Nanostructured Model Catalysts, University of Innsbruck, Austria (Prof. B. Klotzer, Prof. S. Penner)
2008 - continue	Department of Physics, Faculty of Art and Science, University of Sakarya, 54187 Esentepe, Sakarya, Turkey (Ass. Prof. Dr. Nagihan Delibas)
2019	Department of Environmental Engineering, University of Zongudak, Turkey (Prof. Yilmaz Yildirim)
2012 - Present	Carbon Materials and Environment Research Group, Department of Inorganic Chemistry, Faculty of ScienceUniversidad de Alicante, Alicante, Spain (Prof. M. J. Illán Gómez)
2014- present	Instituto de Catálisis y Petroleoquímica, CSIC, Cantoblanco, E-28049 Madrid, Spain (Prof. M.C. Alvarez-Galvan, Prof. J. L.G. Fierro)
2014 – present	School of Occupational Safety and HealthChung Shan Medical University Taichung, Taiwan, ROC (Prof. Hui-Hsin Tseng)
2014-2015	UMR 5253 CNRS/UM2/ENSCM/UM1, Equipe “Matériaux Avancés pour la Catalyse et la Santé” Ecole Nationale Supérieure de Chimie de Montpellier, 8 rue de l'Ecole Normale, 34296 Montpellier cedex, France (Delahay, G., Institut Charles Gerhardt)
2011-2013	Department of Chemical and Biomolecular Engineering, National University of Singapore, Engineering Drive 4, Singapore (Prof. G. P. Rangaiah)
2011-2012	Institute for the Study of Nanostructured Materials *(*ISMN) of the National Research Council *(*CNR*)* , Palermo, Italy (Prof. Deganello and Prof. F., Pantaleo)

Academic Positions

Date	***Title of Position***
2021 (Continue)	Visiting Prof. at Department of Physics (TUBITAK Program), Faculty of Art and Science, University of Sakarya, Sakarya, Turkey (Ass. Prof. Dr. Nagihan Delibas & Prof. Dr Ali CORUH)
2017-2019	Visiting Prof. at Nanostructured Model Catalysts,Uniuversity of Innsbruck, Austria (Prof. Dr. Bernhard Klotzer & Dr. Simon Penner) https://webapp.uibk.ac.at/physchem/nmci/member/aligholi-niaei
2019	Visiting Prof. at Department of Environmental Engineering, University of Zongudak, Turkey
2012 - 2017	Head of Department of Chemical & Petroleum Eng., University of Tabriz
2010-2015	Member of Center of Excellence of Hydrocarbon Processing in Tarbiat Modaress University, Tehran
2014	Member of Research Council of Petroleum & Gas Industies, Tehran
2010	Member of Research Council of Science and Technology Park, Tabriz
2010	Member of Research Council of Incubators in Universities, Tabriz
2010 - today	Professor of Department of Chemical Engineering
2003-2008	Vice-chancellor of Research in Faculty of Chemistry, University of Tabriz
2004-2008	Professor in Department of Chemical Engineering, Tabriz
2000-2008	Asscistant & Associate Professor in Department of Chem. Engineering, Tabriz
1994-2000	Resarch Assistant in Tarbiat Modaress University, Tehran, Iran

Research Projects (Compilation of technical knowledge & Industrial activity)

Date	*Project Title*
2021	• Advanced Perovskite Materials with Special Electrical and Ion Transport Characteristics as Superior and Powerful Platforms for Catalyst, Energy Conversion and Storage Applications University of Sakarya, Sakarya, Turkey
2017-2020	• Selective Catalytic Reduction (SCR) NOx + NH3 reduction, with Disel exhust approach Cooperated with University of Innsbruck, Austria
2017-2020	• Selective Catalytic Reduction (SCR) with Perovskite Catalysts, NOx + CO reduction, with exhust approach Cooperated with University of Innsbruck, Austria
2016	• Development of Mixed Oxide Catalyst in NOx + NH3 reduction, for Stationary polluant systems, Sponsored by Iranian Nanotechnologhy Organization, Tabriz
2015	• Development of modified pervskites Catalyst in Co+NOx reduction, Automative exhaust converter, Sponsored by Iranian Nanotechnologhy Organization, Tabriz
2015	• Design & Construction of Pilot Plant of MTO, MTP, MTG Sponsored by Iranian Nanotechnologhy Organization and NPC (National Petrochemical Company-Iran), Tabriz
2008	• Development of Coke Inhibitors in Thermal Cracking Process Sponsored by NPC (National Petrochemical Company-Iran)), Tehran
2002-2005	• Shahab.1- Simulator of Commercial LPG Crackers – TMU & NPC (coworker) • Shahab.2- Commercial Software of Modeling & Simulation of Olefin Plants-Naphtha – Tarbiat Modaress University, & NPC (coworker)), Tehran
1999-2001	• Basic Design of Industrial Thermal Cracking Plant- Tarbiat Modaress University-TMU & NPC (coworker), Tehran
1999-2001	• Design & Construction of Thermal Cracking Pilot Plant- in Tarbiat Modaress University, Tehran

Publications:

International Journal Articles

1. Asghar Mohammadi, Ali Farzi, Christoph Thurne, Bernhard Klötzer, Sabine Schwarz, Johannes Bernardi, ***Aligholi Niaei***, Simon Penner, Tailoring the Metal-Perovskite interface for promotional steering of the catalytic NO reduction by CO in the presence of H2O on Pd-lanthanum iron manganite composites, Applied Catalysis B: Environmental, Volume 307, 15 June 2022, 121160 https://doi.org/10.1016/j.apcatb.2022.121160 **(IF: 24.319)**

2. Christoph W. Thurner, Nicolas Bonmassar, Daniel Winkler, Leander Haug, Kevin Ploner, Parastoo Delir Kheyrollahi Nezhad, Xaver Drexler, Asghar Mohammadi, Peter A. van Aken, Julia Kunze-Liebhäuser, ***Aligholi Niaei***, Johannes Bernardi, Bernhard Klötzer, and Simon Penner, Who Does the Job? How Copper Can Replace Noble Metals in Sustainable Catalysis by the Formation of Copper−Mixed Oxide Interfaces, ***ACS Catalysis*** 2022, 12, 7696−7708 https://doi.org/10.1021/acscatal.2c01584 **(IF: 13.70)**

3. Maged F. Bekheet, Parastoo D. Kheyrollahi Nezhad, Nicolas Bonmassar, Lukas Schlicker, Albert Gili, Sebastian Praetz, Aleksander Gurlo, Andrew Doran, Yuanxu Gao, Marc Heggen, **Aligholi Niaei,** Ali Farzi, Sabine Schwarz, Johannes Bernardi, Bernhard Klötzer, and Simon Penner, "Steering the Methane Dry Reforming Reactivity of Ni/La2O3 Catalysts by Controlled In Situ Decomposition of doped La2NiO4 Precursor Structures", December 11, ***ACS Catalysis***, 2020. https://doi.org/10.1021/acscatal.0c04290 **(IF: 13.70)**

4. Parastoo D. Kheyrollahi Nezhad, Maged F. Bekheet, Nicolas Bonmassar, Albert Gili, Franz Kamutzki, Aleksander Gurlo, Andrew Doran, Sabine Schwarz, Johannes Bernardi, Sebastian Praetz, ***Aligholi Niaei***, Ali Farzi and Simon Penner , Elucidating the role of earth alkaline doping in perovskite-based methane dry reforming catalysts, CATALYSIS SCIENCE & TECHNOLOGY, 2022, 2044-4753 https://doi.org/10.1039/D1CY02044G (**IF:** 6.177)

5. Ali Sayyah, Elham Mahmoudi, Samira Farhoudi, Gamze Behmenyar, Abdullah Zahid Turan, Seyed Reza Nabavi, Aligholi Niaei, Environmental assessment of carbon dioxide methanation process using mixed metal oxide and zeolite-supported catalysts by life cycle assessment methodology-LCA, Volume 362, 15 August **2022**, 132529, Journal of Cleaner Production. https://doi.org/10.1016/j.jclepro.2022.132529 **(IF: 11.07)**

6. Maged F. Bekheet, Parastoo Delir Kheyrollahi Nezhad, Aleksander Gurlo, Andrew Doran, Yuanxu Gao, Marc Heggen, **Aligholi Niaei**, Ali Farzi, Sabine Schwarz, Johannes Bernardi, Bernhard Klötzer, and Simon Penner, "Mechanistic In Situ Insights into the Formation, Structural and Catalytic Aspects of the La2NiO4 Intermediate Phase in the Dry Reforming of Methane over Ni-based Perovskite Catalysts" , In press, ***Applied Catalysis A, General, 2021*** *DOI: 10.1016/j.apcata.2020.117984* **(IF: 5.723)**

7. Sheida Jamalzadeh, Sogand Aghamohammadi, **Aligholi Niaei**, Hamid Erfan-Niya, Molecular dynamics and Monte Carlo simulations of molecules through ZSM-5 nano-catalysts applied in SCR of NOx with ammonia: Effect of Cu heteroatom, Molecular Catalysis 528, Aug. 2022, 112421 https://doi.org/10.1016/j.mcat.2022.112421 **(IF: 5.089)**

8. Azam Seifi, Dariush Salari, Alireza Khataee, Bunyemin Cosut, Leyla Colakerol Arslan, **Aligholi Niaei**, Enhanced photocatalytic activity of highly transparent superhydrophilic doped TiO2 thin films for improving the self-cleaning property of solar panel covers, Ceramics International, Available online 21 September 2022, https://doi.org/10.1016/j.ceramint.2022.09.130 **(IF: 5.532)**

9. Kalantari N., Maged F. Bekheet, P.D.Kheyrollahi Nezhad, Jan O Back, A.Farzi, Simon Penner, Nagihan Delibaş, Sabine Schwarz f, Johannes Bernardi, D.Salari, **Aligholi Niaei**" Effect of Chromium and Boron Incorporation methods on Structural and Catalytic Properties of Hierarchical ZSM-5 in the Methanol-to-Propylene Process" Journal of Industrial and Engineering Chemistry, Publishedonline, 2022 **(IF: 6.5) http://dx.doi.org/10.1016/j.jiec.2022.03.049**

10. S. R. Hosseini, M. Bahramgour, P. Yardani S, Alireza Tabatabaei M, A. Moradi, , Nagihan Delibas, Mir Ghasem Hosseini, **Aligholi Niaei**, Investigating the effect of non-ideal conditions on the performance of a planar CH3NH3PbI3-based perovskite solar cell through SCAPS-1D simulation, HELYON, 8 (2022) e11471 https://doi.org/10.1016/j.heliyon.2022.e114712022 **(IF: 3.7)**

11. Asghar Mohammadi, Corsin Praty, Ali Farzi, Hamid Soleimanzadeh, Sabine Schwarz, Michael Stöger-Pollach, Johannes Bernardi, Simon Penner & **Aligholi Niaei** , Influence of CeO2 and WO3 Addition to Impregnated V2O5/TiO2 Catalysts on the Selective Catalytic Reduction of NOx with NH3, Catalysis Letters (2022) Published: 02 September 2022

12. Mahboobeh Ejtemaei, S. Sadighi, M. Rashidzadeh, S. Khorram, Jan O.Backd, Simon Penner, Michael F.Noisternig, D. Salari, **A. Niaei**, Effect of O2/N2 Glow Discharge Plasma on Zeolite Extrudates as Water Adsorbent, Chemical Engineering and Processing - Process Intensification , Available online 5 August **2022**, 109084 https://doi.org/10.1016/j.cep.2022.109084 **(IF:4.8)**

13. Mahboobeh Ejtemaei, S. Sadighi, M. Rashidzadeh, S. Khorram, Jan O.Backd, Simon Penner, Michael F.Noisternig, D. Salari, **A. Niaei**, "Investigating the Cold Plasma Surface Modification of Kaolin- and Attapulgite- Bound Zeolite A", J. of Industrail Enginerring Chemistry, Available online 21 October 2021, https://doi.org/10.1016/j.jiec.2021.10.020 (**IF:** 6.5)

14. A. Akbarzadeh, M. Ahmadlouy darab, ***A. Niaei***, "Capabilities of α-Al2O3, γ-Al2O3, and bentonite dry powders used in flat plate solar collector for thermal energy storage", ***Renewable Energy***, 173, Aug. 2021, 704-720 https://doi.org/10.1016/j.renene.2021.04.026 (**IF:** 8.634)

15. H. R. Khaledian, P. Zolfa ghari, P. D. Kheyrollahi Nezhad, ***A. Niaei***, Sirous Khorram, Dariush Salari , "Surface modification of LaMnO3 perovskite supported on CeO2 using argon plasma for high-performance reduction of NO" ***Journal of Environmental Chemical Engineering***, Vol. 9, Issue 1, Feb. 2021, 104581 https://doi.org/10.1016/j.jece.2020.104581 **(IF: 7.968)**

16. M. Sadat Hosseini, M. Ebratkhahan, Zahra Shayegan, **Aligholi Niaei**, Darish Salari, Ali Rostami, Javad Raeisipour, Investigation of the effective operational parameters of self-cleaning glass surface coating to improve methylene blue removal efficiency; application in solar cells, ***Solar Energy*** Vol. 2071 Sept 2020, 398-408 https://doi.org/10.1016/j.solener.2020.06.109 (IF: 7.188)

17. Ahangari M, Elham Mahmmodi, **Nagihan Delibas, Aligholi Niaei**, Application of SrFeO3 perovskite as electrode material for supercapacitor and investigation of Co-doping effect on the B-site, Turkish J. of Chemistry, August 2022

18. Neda Kalantari, Ali Farzi, **Nagihan Delibaş, Aligholi Niaei** & Dariush Salari, "Synthesis of multiple-template zeolites with various compositions and investigation of their catalytic properties", Research on Chemical Intermediates, Research on Chemical Intermediates volume 47, pages4957–4984 (2021) https://link.springer.com/article/10.1007/s11164-021-04580-x (IF: **3.134**)

19. Nagihan Delibas , Soudabeh Bahrami Gharamaleki , Masrour Mansouri , **Aligholi Niaei** ,. Reduction of operation temperature in SOFCs utilizing perovskites: Review , Int. Advanced Research &

Engineering Journal, Accepted Fab. 2022

20. Seyed Reza Hosseini, Mahsa Bahram Goor, Nagihan Delibas, Aligoli Niaei, "A simulation study on the effect of polymers on the structure and function of a perovskite solar cell", Manuscript ID: JOPN-2201-1252 (R2)- Journal of Optoelectronical Nanostructures. 2022

21. Nagihan Delibas, A. Moradi, S. R. Hosseini, M. Bahramgour, **Aligholi Niaei**, INVESTIGATION OF THE EFFECT OF POLYMERIC AND NON-POLYMERIC MATERIALS IN THE HOLE TRANSFER LAYER ON THE PERFORMANCE OF PEROVSKITE SOLAR CELL, Kahramanmaras Sutcu Imam University Journal of Engineering Sciences, KSÜ, 25(1), 2021

22. Hosseini S. R., **Nagihan Delibas,** M.Bahamgour, A.Tabatabaei, **Aligholi Niaei**, "Investigation of a Perovskite Solar Cell and Various Parameters Impact on Its Layers and the Effect of Interface Modification by Using P3HT as an Ultrathin Polymeric Layer Through SCAPS-1D Simulation", Sakarya University Journal of Science, Publishedonline, 2021

23. Nagihan Delibas, S. R. Hosseini, M. Bahramgour ,**Aligholi Niaei**, Performance Comparison of Different Hole Transport Layer Configurations in a Perovskite-based Solar Cell using SCAPS-1D Simulation, European Journal of Science and Technology, 2021

24. Naser Hadi, Ali Farzi, Reza Alizadeh, **Aligholi Niaei** , Metal-substituted sponge-like MFI zeolites as high-performance catalysts for selective conversion of methanol to propylene , ***Microporous and Mesoporous Materials*** 2020 https://doi.org/10.1016/j.micromeso.2020.110406 (IF: 5.876)

25. M. Grünbacher1, A.Tarjoman Nejad, P.Kheriolahi, C.Praty, **A. Niaei**, B.Klötzer, S. Schwarz, J.Bernardi, A.Farzi, M.José Illán Gómez, V. Albaladejo-Fuentes, S.Penner, "Effect of Noble Metals in the Reduction of NO by CO over La(Cu0.7Mn0.3)0.98M0.02O3 (M= Pd, Pt, Ru and Rh) Perovskite Catalysts", ***Journal of Catalysis***, Vol. 379, Nov. 2019, 18-32 DOI: https://doi.org/10.1016/j.jcat.2019.09.005 **(IF 8.047)**

26. Hui-Hsin Tseng, Yi-Chen Lin, David K. Wang, Jing-Yuan Liu, **A. Niaei**, Low band-gap energy photocatalytic membrane based on SrTiO3-Cr and PVDF substrate: BSA protein degradation and separation application, ***Journal of Membrane Science***, 27 May, 2019 https://dx.doi.org/10.1016/j.memsci.2019.05.067 **(IF: 10.53)**

27. TR Aghdam, H Mehrizadeh, D Salari, HH Tseng, **A Niaei**, A Amini, Photocatalytic removal of NOx over immobilized BiFeO3 nanoparticles and effect of operational parameters, Korean Journal of Chemical Engineering 35 (4), 994-999

28. S Salehi, **A Niaei**, SA Hosseini, D Salari, J Raeisipour, A Seifi, Chromite spinel nanocatalysts: promising photocatalysts for CO pollutant removal from the air, Applied Nanoscience 10 (6), 1779-1792

29. , A Amini Herab, D Salari, HH Tseng, A Niaei, H Mehrizadeh, ...,Synthesis of BiFeO3 nanoparticles for the photocatalytic removal of chlorobenzene and a study of the effective parametersReaction Kinetics, Mechanisms and Catalysis 131 (1), 437-452

30. Soleimanzadeh H., **A. Niaei,** D. Salari,A. Tarjomannejad, Simon Penner, Matthias Grünbacher, S.A. Hosseini, S.M. Mousavi, "Modeling and optimization of V2O5/TiO2 nanocatalysts for NH3-Selective catalytic reduction (SCR) of NOx by RSM and ANN techniques", *J. of Environmental Management*, Vol. 238, 15, 2019, Pages 360-367 https://doi.org/10.1016/j.jenvman.2019.03.018

31. Hamid Ghassabzadeh, Mehdi Rashidzadeh, **Aligoli Niaei**, A novel fast evaluation method for mesoporous NiMo/Al2O3 hydrodemetallization (HDM) catalysts: activity and metal uptake capacity measurements, Reaction Kinetics, Mechanisms and Catalysis, 31 March 2020, https://doi.org/10.1007/s11144-020-01752-5

32. Hamid Ghassabzaadeh, **Aligoli Niaei**,and Mehdi Rashidzadeh, Synthesis and Characterization of Multi-Modal γ-Al2O3: A Systematic Investigation on the Optimization of Hydrodemetallization Catalyst Preparation, Chemistry Select 2020, 5, 8892 –8905, https://doi.org/10.1002/slct.202001252

33. Mahsa Babaei, Kanchana Rueksomtawin Kildegaard, Aligholi Niaei, Maryam Hosseini , Sirous Ebrahimi, Suresh Sudarsan, Irini Angelidaki and Irina Borodina, "Engineering Oleaginous Yeast as the Host for Fermentative Succinic Acid Production From Glucose", Frontiers in Bioengineering and Biotechnology , Nov. 2019; 7: 361 https://doi.org/10.3389/fbioe.2019.00361

34. Mahsa Babaei, PanagiotisTsapekos, MerlinAlvarado-Morales, Maryam Hosseini, Sirous Ebrahimi, **A.Niaei**, Irini Angelidaki, Valorization of organic waste with simultaneous biogas upgrading for the production of succinic acid, *Biochemical Engineering J.*, Vol. 47, 15 July 2019, 136-145 https://doi.org/10.1016/j.bej.2019.04.012

35. Hadi N., **A. Niaei**, R. Alizadeh, J. Raeisipour, "Durable and highly selective tungsten-substituted MFI metallosilicate catalysts for the methanol-to-propylene process by designing a novel feed-supply technique", *Comptes Rendus Chimie*, 21, Issue 5, May 2018, 523-540 **doi:** 10.1016/j.crci.2018.01.001

36. B. Izadkhah**, A Niaei,** M. José Illán-Gómez, D. Salari, A.Tarjomannejad, and V. Albaladejo-Fuentes, LaBO3 (B = Mn, Fe, Co, Ni, Cu, and Zn) Catalysts for CO + NO Reaction, ACS: *Ind. Eng. Chem. Res.*, 2017, 56, 3880−3886 https://doi.org/10.1021/acs.iecr.7b00457

37. S.A. Hosseini, B. Mehri, **A. Niaei,** B. Izadkhah, Consuelo Alvarez-Galvan, Jose G. Luis Fierro, "Selective catalytic reduction of NOx by CO over LaMnO3nano perovskites prepared by microwave and ultrasound assisted sol–gel method, *J. of Sol-Gel Science and Technology*, 2018, 85, Issue 3, pp 647–656 https://link.springer.com/article/10.1007/s10971-017-4568-8

38. Tarjomannejad A, Zonouz P, Masoumi M, **A. Niaei,** A. Farzi, "LaFeO3 Perovskites Obtained from Different Methods for NO + CO Reaction, Modeling and Optimization of Synthesis Process by Response Surface Methodology", *J. of Inorganic and Organometallic Polymers and Materials*, 2018, 28(5) 2012-2022 https://link.springer.com/article/10.1007/s10904-018-0860-5

39. Abedini, F., Hosseini, S.A., ***Niaei, A***., (...), Abbasi, M., Marmarshahi, S, "Design and optimization of new La1−xCexNi1−yFeyO3 (x, y = 0–0.4) nano catalysts in dry reforming of methane", *International J. of Green Energy*, Vol 15, Issue 1 ,20-27 2018

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1. Mahboobeh Ejtemaei, **Nagihan Delibaş**, Kurbanbekov Bakytzhan, Ali Çoruh, **Aligholi Niaei**, Synthesis and Characterization of Low Silica Zeolites from Low-grade Kaolin Using the Hydrothermal Method: With Electromagnetic Application Approach, Turkish Physical Society 38th International Physics Congress, 04 Sep 2022, BODRUM, Turkey

2. Elham Mahmoudi, Jafar Mostafaei, **Nagihan Delibas**, Meirambek Berkinbayev, Elnaz Asghari, Ali Coruh, **Aligholi Niaei** , Synthesis and Characterization of Composite Materials Based on

La0.1Sr0.45Ba0.45CoO3 and NiO as Electrocatalyst for Hydrogen Evolution Reaction, Turkish Physical Society 38th International Physics Congress, 04 Sep 2022, BODRUM, Turkey

3. Faez Hamooni, Nagihan Delibaş, Neda Kalantari, Mousa Mohammadpourfard, Aligholi Niaei, Effect OF CATALYST ACTİVİTY, CRYSTAL STRUCTURE, PARTİCLE SİZE AND SHAPE, AND PROCESS CONDİTİONS ON CATALYST EFFECTİVENESS FACTOR İN CONVERSİON OF METHANOL TO SELECTİVLY FAVORABLE HYDROCARBONS, ,4th International Congress on Engineering Sciences and Multidisciplinary Approaches, 03-04 NOVEMBER 2022 İSTANBUL

4. Mohammad Kooshki, Nagihan Delibaş, Soudabeh Bahrami, Aligholi Niaei, 2D Modeling of Lithium-Ion Battery Using COMSOL Multiphysics, 4th Int. Congress on Engineering Sciences and Multidisciplinary Approaches, 03-04 Nov. 2022 İSTANBUL

5. Seyyed Reza Hosseini, Nagihan Caylak Delibas, Mahsa Bahramgour, Alireza Tabatabaei Mashayekh, , Aligholi Niaei, "Improving the efficiency of a perovskite solar cell by using a new structure including composite forms of the charge transporting layers using the SCAPS-1D simulation Tool", ***Solar-Power-Tech Conference,*** 5-8 July, 2021, Porto, Portugal

6. Nagihan Caylak Delibas, Seyyed Reza Hosseini, Mahsa Bahramgour, Aligoli Niaei , Investigation of a 4-Terminal tandem all perovskite solar cells compared with single-junction perovskite solar cells by simulation in SCAPS-1D, Anattolian Congress-6th Int. Applied Science Congress, May 21-23 , 2021, Van Turkey

7. Seyyed Reza Hosseini, Nagihan Caylak Delibas, Mahsa Hossein Zadeh Damrigh, Mahsa Bahramgour, Aligoli Niaei , "Investigation of CZTS solar cells and its constituent layers with additional MO layer with different buffer layers and their simulation and optimization by SCAPS-1D software", Anattolian Congress-6th Int. Applied Science Congress, May 21-23 , 2021, Van Turkey

8. Neda Kalantary, NAGİHAN DELİBAŞ, Structural and Surface study of ZSM-5 with Nano pore Size Distribution with MTP application approach, 2nd NANOTECH EURASIA Dec. 2021, Baku, Azerbaijan

9. Mohammad Ahanagari, Nagihan Delibas, Aligholi Niaei, The Effect of Fe-doped on B-site of SrCoO3 Perovskite as a Supercapacitor Electrode, 2nd NANOTECH EURASIA Dec. 2021, Baku, Azerbaijan

10. Hamid Soleimanzadeh, Aligholi Niaei , Dariush Salari, Synthesis of Vanadia-Titania Nano Structured Mixed Oxides and Study Their Performance in Catalytic Oxidation of Toluene, SCON 2nd International Conference on Nanotechnology, November 18-19, 2019, Amsterdam, The Netherlands

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14. Niaie, D. Salari, S. R. Nabavi, T. Mahmoudi Badiki, B. Izadkhah, Screening of nanostructure CuO/ZSM-5 catalusts for catalystic transformation of methanol to gasoline with taguchi method for proper catalyst design, International congress nanoscience and nanotechnology, Shiraz, Iran, 2010
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PhD & Master Thesis Supervision:

PhD Students

Mahsa Bahramgour, *Under supervision,* *Perovskite Based Solar Cells , Synthesis and charachterizations and application in PV panels*

Mahmoudi, *Under supervision*, Investigation of Using Lanthanide group and Alkaline Earth Metal-based Perovskite Oxide as Electrocatalysts for Water Splitting

Parastoo Delir Kheroallahi, *Under supervision,* *Invstigation of Selective Catalytic Reduction of NOx + CO over Perovskite Nanocatalysts: With different Support- Ceria & Zirconia*

Asghar Mohammadi, *Under supervision,* *Study the Performance of Mixed Metal Oxide Nanocatalysts in Selective Catalytic Reduction of NOx +NH3: Disel Exhaust Approach*

Neda Kalantari, *2021,* *Utilization of different templates for synthesis of ZSM-5 nanostructure catalysts and subsequent application in MTP methanol to propylene conversion Process*

Mahbobeh Ejtemaee, *2022,* *Structural modification of Zeolite-A adsorbent shaped with binder using ultrasound and plasma technologies for water removal of gas streams*

Azam Seifi, Under Supervisison, *Self Cleaning, anti static and anti reflection with application in Solar panels*

Javad Raesee pour, *Under supervision,* *Investigation and preparation of nano perovskite and spinel synthesised by inverse piezoelectric sol-gel method for photocatalytic oxidation of CO and degradation of environmental pollutants in building materials*

Hamid *Gasabzadeh, 2020,* *Design, preparation and investigation of modified mesoporous Alumina as a catalyst support for residue hydrodemetallization process*

Mahsa Babaee, *2020,* *Production of succinic acid integrated with biogas upgrading using microbial fermentation*

Naser Hadi, 2017, *Synthesis and evaluation of metal (Mn, Ce and W) doped ZSM-5 nanostructure catalysts for conversion of methanol to propylene*

Ali Tarjoman Nejad, *2017,* *Selective Catalytic Reduction of NOx by CO over Perovskite Nanocatalysts: Catalyst Design and Optimization and Kinetic Modeling*

Behrang Izadkhah, *2016,* *Systematic evaluation of First Series Transition MetalPerovskitesas a base for some noble metals for Catalytic Removal of CO + NOx and Volatile organic compounds*

Habib Mehrizadeh, *2016,* *Investigation of Photocatalytic Performance of Mixed Metal Oxides Nanoparticles (Peroveskite& Spinel) in Removal Process of Volatile Organic Compounds (VOCs) from gaseous Phase*

Parvaneh Panahi, *2014,* *Study of Selective Catalytic Reduction of NOx over Mono and Bi-Metals Oxide Nanostructures on Common Supports – Design and Optimization of Catalys*

Seyed Mahdi Mousavi, 2014, *Study and Optimizing of Performance of Some Mixed Metal Oxide Nanocatalysts in Selective Catalytic Reduction of NOx*

Seyed Ali Hosseini, 2013 , *Investigation of catalytic performance of perovskite and spinel type mixed metal nano oxides in VOCs removal and study of catalyst design and optimization*

Azadeh Jodaeei, *2011,* *Study of VOCs Catalytic Oxidation Mono and Bi-Transition Metals Supported on HZSM-5 in a Fixed Bed Reactor*

Faezeh Agazadeh, *2010,* *Study of VOCs Catalytic Oxidation with Modified Bimetallic catalysts Supported on industrial Pt/γ-Al_2O_3 in Fixed Bed reactor*

Heydar Ranjbar, 2009, *Synthesis and characterization of high rubber content g-ABS using seeded emulsion polymerization in order to increase ABS plant productivity*

Seyed Reza Nabavi, ***2009,*** *Application of Hybrid Modeling and Intelligence Algorithms in Modeling and Optimization of Olefin Process*

Mohammad Kousha Asadollah , ***2008,*** *Ignition of dual fuel engines by using free radicals existing in EGR gases*

Mohammad H. Rasoulifard, ***2008,*** *Study of Efficiency of Photo reactors used in AOP for removal of trace of organic Pollutant from Contaminated Waters*

Rahim Khoshbakhti saray, ***2007****, Modeling of combustion and emission of dual-fual engines at part loads by using detailed chemical kinetics mechanisms*

Mahmood Zareei, ***2011***, Study of Efficiency of Electocaugolation Process for removal of trace organic Pollutant from Contaminated Waters

Master of Science Students « MSc »

Shiva Marmarshahi, 2015**,** *Investigation of Catalytic Performance of Metal Oxides Nanostructurs Used in the Reforming Process of Methane with CO_2 and Optimization of their Performance*

Neda Ahmadpour*,* 2015*, Photocatalytic Conversion of CO_2 to Valuable Hydrocarbons Using Nano Structure Mixed Metal Oxides*

Milad Abbasi , 2015**,** *Preparation & optimization of Nano structure catalysts on different basis for methane dry reforming*

Hamid Soleymanzadeh, 2015*, Study of Performanceof V_2O_5/TiO_2 Mixed Metal Oxide Nanocatalysts in Selective Catalytic Reduction of NOx (Pollutant)*

Fahimeh Abedini , 2015*,Fabrication and optimization of perovskite type nano catalyst by using the intelligent system and the investigation of their catalytic performance in dry reforming process*

Parisa Rashidi , 2014*, Investigation of the performance and lifetime of PerovskiteNano catalysts with L Sr-Ce-Cu-Mn-Ostructurein simultaneous removal of NOx and CO and kinetic modeling of process*

Sheyda Jamalzade, 2014**,** *Molecular Simulation of Nano-Catalysts applied in SCR of NOx*

Parvin Shojaee, 2014**,** *Recovery of Platinum from spent catalysts of petroleum and Petrochemical industries*

Najaf Namjou, 2014**,** *Modeling of NOx reduction with CO as the reducing agent over perovskite- type nano catalyst*

Mina Safari Farshchi, 2014 **,** *Modeling of removing some VOC and NOx by perovskite type nano catalyst*

Farzaneh Delzendeh, 2014 **,** *Modeling, Simulation and control of Iso-propanol production reactive distillation column*

Elham yaghouti , 2014*, Modeling and simulation for the conversion of methanol to propylene based on H-ZSM-5 zeolite in fixed bed reactor and data comparison with experimental results*

Elmira Yaghinirad, 2014*, Experimental investigation of methane aromatization over transition metal modified zeolite nano catalysts*

Sanaz Farshbaf, 2014 , *Modeling and Simulation of methanol to olefins process over SAPO-34 catalysts in a fixed bed reactor and data comparison with the experimental results*
Reza Niakan, *2014,* Stabilization of Spinel Type Nano-Catalysts on the Industrial Substrates
Javad Raeisipour , 2013 , *Preparation of nanostructured zeolite catalysts for the conversion of MTP*
Shahriar Hossein pour, 2013 , *Stabilization of perovskite type nano catalysts on the industrial substrates*
Behzad Heydary, 2013**,** *Remove volatile organic compounds from the air containing with bio filtration*
Zahra Shayegan, 2012 , *Ultrasound –assisted oxidative process for cracking of petroleum fractions*
Samira Arefi Oskoui , 2012 , *Design and optimization of perovskite type nano catalyst and investigation of their catalytic performance in removing in some VOCs*
Fatemeh Masoudi khosroushahi , 2012, *Design of modified nanocatalysts some Transition metals supported on activated carbon using intelligent systems for VOCs oxidation*
Masoud Samandari , 2012 , *Optimization of preparation conditions of some transition metal nanocatalyst based on activate carbon in NOx catalytic reduction*
Masoud Navaei Shirazi, 2012 **,** *Investigation the performance of modified zeolite nano catalysts in methanol to propylene process (MTP)*
Naser Hadi, 2012**,** *Development of a kinetic model for (MTP) with nanostructure of zeolite catalyst*
Fatemeh Khoeini, 2012**,** *VOCs removal from air by AOP processes- CNT & spinel nanocatalysts*
Mohammad Razzaghi, 2012, *Kinetic modeling of the MTO, incorporated SAPO-34*
Javad Amanpour, 2011**,** *Catalytic reduction of NO over carbon nano-catalysts* **Behrang Izadkhah,** 2011 **,** *VOCs catalytic oxidation by Bi-Transition metals & HZSM-5 with AI*
Tohid Mahmoudi badiki, 2011**,** *Design of catalysts for of MTG using intelligent hybrid systems*
Mina Karami, 2011, *Catalyst design for MTO over metal & molecular sieves with intelligent methods*
Dariush Omidfar, *2010,* Kinetic Modeling of VOC Combustion in Catalytic Oxidation Process
Mahlega pourabbas, 2010 **,** *Coke deposition and deactivation of metal oxides on ZSM-5 in MTG process*
Leila Mousavian, 2010 , C*atalytic behavior of H-ZSM-5 with some transition metals in MTG*
Hosein Afshary, 2010 **,** *Deactivation of metal oxide catalysts on Gamma –Al2O3*
S.M.R.Shoja, 2010 **,** *Coke deposition in steam cracking of Naphtha on Nickel alloys- Inhibitors*
Reza Aleshzadeh, 2008**,** ***C****atalytic oxidation of VOC using some modified γ-Al2O3 catalysts*
Naiemeh Faridi, 2008**,** *Reinforced epoxy resin with thermoplastic polyurethane, and its characterization*
Mina sharifi bonab, 2008**,** *Oxidative desulfurization of L.S.R.G*
Parviz Fathi jokandan, 2008**,** ***C****oke deposition in the MTO over zeolite catalysts in a FBR reactor*
S.Ali.Hosseini, 2008**,** *VOCs removal by catalytic oxidation with transition metals- modified ZSM-5*
Ronas soleimany,2008**,** *Investigation the simultaneous removal sulfur and olefins from L.S.R.G*
Padra Chitsaz yazdi, 2007, *simulation of Coke formation in catalytic cracking & flow regime in FBR*
Mortaza Derakhshani, *2007,* Study of Product Distribution in Catalytic Cracking of HC over Zeolite in FBR
Ali Ebadi, *2006,* Effect of phosphorous on coking rate in the cracking of hydrocarbons
Majed Mahmoudy, 2006**,** *The investigation & preparation of Antifoulant Using in olefin Prpcesses*
Mahshid Sazdar, 2006**,** *Modeling of conversion methanol to olefins process*
Ahad Chamandeh, *2006,* Effect of tube materials on coking rate in the cracking of hydrocarbons
Parvaneh Panahi, *2005,* Effect of Thiochemical compounds on coking rate in the cracking of hydrocarbons
N.Kazemian, 2004**,** *Photodegradation of microorganisms by UV irradiation and TiO2*
M.H.Rasoulifard, 2003**,** *Immobilisation of TiO2 and study of organic dyes photodegradation*

Teaching Experiences:

Title of Courses	*Level*
Industrial Special Reactors Design	Graduate Course
Advanced Chemical Reactor Design	Graduate Course
Hetrogenious Catalysis & Catalytic Reactors	Graduate Course
Energy Conversion and Styorage	Graduate Course
Chemical Process Modeling & Simulation	Graduate Course
Charachterization and Nano materials Production	Graduate Course
NanoMateials and Applications	Undergraduate Course
Reaction Kinetics & Chemical Reactor Design	Undergraduate Course