Seyed Mahdi Mousavi



PhD. In Applied Chemistry, Assistant Professor University of Kashan, Kashan, Iran

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Educational Background

2010-2014 PhD. in Applied Chemistry, University of Tabriz, Tabriz, Iran.
Dissertation *"Study and Optimizing of Performance of Some Mixed Metal Oxide Nanocatalysts in Selective Catalytic Reduction of NOx"*

2006- 2009 M. Sc. in Applied Chemistry, University of Tabriz, Tabriz, Iran.
Dissertation "*Study of activity of immobilized α-Amylase on perlite modified by Nanoporous silica"*

2001-2005 B. Sc. in Applied Chemistry, University of Razi, Kermanshah, Iran.

Awards & Activities

- ✓ Ranked at position 1 in the PhD. entrance exam University of Tabriz, 2010.
- ✓ Ranked at position 2 in the B. Sc. course, Razi University, Kermanshah, 2006.
- ✓ Member of gifted and talented office, University of Tabriz, 2008- 2014
- ✓ Member of young researchers club of Azad University, Tabriz branch, 2009- 2013.
- ✓ Member of Iranian Nanotechnology Society (INS), Iran, 2013- Continuing.
- ✓ Member of Iranian Society of Environmentalists, Iran, 2014- Continuing.
- ✓ Member of Iranian Association of Chemical Engineering, Iran, 2012- Continuing.

Research Interests

- ✓ Synthesis, Characterization & Application of Nanocatalysts (*Supported Metal oxides, Mixed Metal Oxides)*
- ✓ Environmental Remediation Process
- ✓ Modeling & Optimization of Chemical Process

- ✓ Design of Experiments

Job Experiences

- ✓ **Faculty Member** University of Kashan, Kashan, Iran, 2014- Continuing.
- ✓ **R&D Expert** Lavan Oil Co., Lavan, Iran, 2012-2013.
- ✓ **Technical Officer** Ghorbani Teflon container Co., Tabriz, Iran, 2009-2011.
- ✓ **Technical Expert** Meybod Narin Tile Co., Meybod, Iran, 2005-2006.

Teaching Experiences

✓ **Principles and Calculations in Industrial Chemistry**	B. Sc.	University of Kashan
✓ **Graphic**	B. Sc.	University of Kashan
✓ **Industrial Chemistry (I)**	B. Sc.	University of Kashan
✓ **Chemistry and Technology of Polymer**	B. Sc.	University of Kashan
✓ **Petroleum Chemistry and Technology**	B. Sc.	University of Kashan
✓ **General Chemistry**	B. Sc.	University of Kashan & University of Tabriz
✓ **General Chemistry Laboratory**	B. Sc.	University of Kashan & University of Tabriz

Research Activities

- ✓ Executer in project of *"Synthesis and structural characterization of cadmium (II) oxide from coordination compound and study of its catalytic activity"* gifted and talented office, University of Tabriz, Tabriz, Iran, 2011-2012.
- ✓ Co-worker in project of *"Immobilization of enzyme in self-assembling Nanoporous"*, University of Tabriz, Tabriz, Iran, 2008-2009.
- ✓ Patent certificate "*Preparation of modified Nanoporous Perlite"* 50241, 2008, Iran.
- ✓ Patent certificate "*Nanoporous Perlite as support of Enzyme"* 51698, 2008, Iran.

Publication

Journal Papers

Samira Moradi Kozaraji, Seyed Mahdi Mousavi, Moslem Setoodehkhah, Design, synthesis and response surface optimization of a high-performance LaFeO3/Mg-Al layered double hydroxide/chitosan ternary nanocomposite as a pH-responsive carrier for controlled celecoxib release: experimental evaluation and kinetic modelling, RSC Adv. 2026;16(33):30477-30496.

Mohammad Ali Jalali, Seyed Mahdi Mousavi, Optimization of the performance of LaMO3 (M: Mn, Fe, Co & Ni) nanocatalysts in the advanced oxidation of Ciprofloxacin pharmaceutical pollutants using response surface methodology, Iranian Journal of Chemistry and Chemical Engineering, 44(2) 2025.

Mohammad Ali Jalali, **Seyed Mahdi Mousavi,** Moslem Setoodehkhah, Efficient removal of ciprofloxacin from pharmaceutical wastewater using advanced oxidation processes on doped perovskite $La_{0.5}A_{0.5}CoO_3$ (A= Sr, Ba and Ce) nanocatalysts, Applied Catalysis O: Open 199, 207024, **2025**.

Seyed Mahdi Mousavi, Hassan Zhian, Hossein Khojasteh, Elnaz Shams, Synergistic Adsorption of Methyl Orange Using MgO/Clinoptilolite Nanocomposites: Characterization, Isotherm Analysis, and Optimization through Response Surface Methodology, Iranian Journal of Chemistry and Chemical Engineering 44(4) 1121-1135, **2025.**

Mohammad Ali Jalali, **Seyed Mahdi Mousavi,** Advanced Oxidation Process of Ciprofloxacin Using Lanthanum-based Perovskites Catalysts by Various Oxidants, Organic Chemistry Research, 10(1) 7-12, **2024**.

Seyed Mahdi Mousavi, Parvaneh Nakhostin Panahi, Aligholi Niaei, Physicochemical Properties and NH3-SCR Performance of Supported CeO2–MnOx Mixed Oxides Catalysts, Russian Journal of Applied Chemistry 97(2) 211-221, **2024**.

Mohammad-Peyman Mazhari, Hossein Khojasteh, Nowjuan Sharifi, Peyman Aspoukeh, **Seyed Mahdi Mousavi**, Development and application of multifunctional Fe3O4/SiO2/TiO2/Cu nanocomposites for sustainable water treatment. Journal of Sol-Gel Science and Technology, 110(1) 156-168, **2024**.

Malihe Sarabadan, Hadis Bashiri and **Seyed Mahdi Mousavi**, Efficient removal of crystal violet from solution by montmorillonite modified with docosyl-trimethylammonium chloride and sodium dodecyl sulfate: modelling, kinetics and equilibrium studies. Clay Minerals 57 (1), 7-20, **2022**.

Malihe Sarabadan, Hadis Bashiri and **Seyed Mahdi Mousavi**, Modelling, kinetics and equilibrium studies of crystal violet adsorption on modified montmorillonite by sodium dodecyl sulfate and hyamine surfactants, Clay Minerals 56 (1), 16-27, **2021**.

Seyed Mahdi Mousavi, A Aghaeinejad-Meybodi, Activity Evaluation of CeO2-MnOx Mixed Oxide Catalysts Supported on ZSM-5 in Oxidation of Ethyl Acetate, Nashrieh Shimi va Mohandesi Shimi Iran, **2021**.

Abbas Aghaeinejad-Meybodi, **Seyed Mahdi Mousavi**, Ali Asghar Shahabi and Mohammad Rostampour Kakroudi, CFD Modeling of Methanol to Light Olefins in a Sodalite Membrane Reactor Using SAPO-34 Catalyst with in situ Steam Removal, Combinatorial Chemistry & High Throughput Screening, 24 (4), 559-569, **2020**.

Malihe Sarabadan, Hadis Bashiri and **Seyed Mahdi Mousavi**, Adsorption of Crystal Violet Dye by Zeolite-Montmorillonite: Modeling, Kinetic and Equilibrium Studies, Clay Mineral, Volume 54, Issue 4, **2019** , pp. 357-368.

Maliheh Sarabadan, Hadis Bashiri, and **Seyed Mahdi Mousavi**, Removal of crystal violet dye by an efficient and low-cost adsorbent: Modeling, kinetic, equilibrium and thermodynamic studies, Korean J. Chem. Eng., 36(10), 1575-1586 (2019)

Hamid Soleimanzadeh , Aligholi Niaei , Dariush Salari , Ali Tarjomannejad, Simon Penner , Matthias Grünbacher, Seyed Ali Hosseini , **Seyed Mahdi Mousavi**, Modeling and optimization of V2O5/TiO2 nanocatalysts for NH3-Selective catalytic reduction (SCR) of NOx by RSM and ANN techniques, Journal of Environmental Management 238 (**2019**) 360–367

Soudabe Bahrami , Aligholi Niaei , María José Illán-Gómez, Ali Tarjomannejad, **Seyed Mahdi Mousavi** , Vicente Albaladejo-Fuentes, Catalytic reduction of NO by CO over CeO2-MOx (0.25) (M = Mn, Fe and Cu) mixed oxides—Modeling and optimization of catalyst preparation by hybrid ANN-GA, Journal of Environmental Chemical Engineering 5 (**2017**) 4937–4947.
Parvaneh NAKHOSTIN PANAHI , G´erard DELAHAY, **Seyed Mahdi MOUSAVI**, Activity of γ -Al2O3 -based Mn, Cu, and Co oxide nanocatalysts for selective catalytic reduction of nitric oxide with ammonia, Turk J Chem (2017) 41: 272 – 281
Seyed Mahdi Mousavi , Parvaneh Nakhostin Panahi, Modeling and optimization of NH3-SCR performance of MnOx/γ -alumina nanocatalysts by response surface methodology, Journal of the Taiwan Institute of Chemical Engineers 69 (2016) 68–77
Parvaneh Nakhostin Panahi, Darush Salari, Hui-Hsin Tseng, Ali Niaei & **Seyed Mahdi Mousavi**, Effect of the preparation method on activity of CuZSM-5 nanocatalyst for the selective reduction of NO by NH3, ENVIRONMENTAL TECHNOLOGY, 2016 doi; 10.1080/09593330.2016.1238964
Seyed Mahdi Mousavi, Vanadium Oxide Nanotubes for Selective Catalytic Reduction of NOx with NH_3, Chinese Journal of Chemical Engineering, **2015**, In press, doi:10.1016/j.cjche.2015.12.023.
Parvaneh Nakhostin Panahi, Darush Salari, Ali Niaei, **Seyed Mahdi Mousavi,** Study of M-ZSM-5 Nanocatalysts (M: Cu, Mn, Fe, Co. . .) for Selective Catalytic Reduction of NO with NH3: Process Optimization by Taguchi Method, Chinese Journal of chemical Engineering, **2015**, 23 (10): 1647–1654.
Parvaneh Nakhostin Panahi, Ali Niaei, Hui-Hsin Tseng, Darush Salari, **Seyed Mahdi Mousavi,** Modeling of catalyst composition−activity relationship of supported catalysts in NH3–NO–SCR process using artificial neural network, Neural Computing and Applications, **2015**, 26 (7): 1515-1523.
P. Nakhostin Panahi, A. Niaei, D. Salari, **S. M. Mousavi,** Selective Catalytic Reduction of NO over M-Ag/ZSM-5 (M: Mn, Fe and Ni) Bimetallic Nanocatalysts: Chemical-Physical Properties and Catalytic Performance, Kinetics & Catalysis, **2015,** 56 (5): 626-633.
Parvaneh Nakhostin Panahi, Ali Niaei , Hui-Hsin Tseng, Darush Salari, **Seyed Mahdi Mousavi**, Gérard Delahay, Ultrasound-assistant preparation Cu-SAPO-34 nanocatalysts for selective catalytic reduction of NO by NH3, Journal of Environmental Sciences, **2015,** 35: 135-143.
Seyed Mahdi Mousavi, Aligholi Niaei, María José Illán Gómez, Dariush Salari, Parvaneh Nakhostin Panahi, Vicente Abaladejo-Fuentes, Characterization and activity of alkaline earth metals loaded CeO2-MOx (M=Mn, Fe) mixed oxides in catalytic reduction of NO, Materials Chemistry and Physics, **2014,** 143: 921-928.
Seyed Mahdi Mousavi, Dariush Salari, Aligholi Niaei, Parvaneh Nakhostin Panahi and Sirous Shafiei, A modelling study and optimization of catalytic reduction of NO over CeO2–MnOx (0.25)–Ba mixed oxide catalyst using design of experiments, Environmental Technology, **2014**, 35(5): 581-589.
Seyed Mahdi Mousavi, Aligholi Niaei, Dariush Salari, Parvaneh Nakhostin Panahi and Masoud Samandari, Modelling and optimization of Mn/activate carbon nanocatalysts for NO reduction: comparison of RSM and ANN techniques, Environmental Technology, **2013**, 34

(11): 1377–1384
Parvaneh Nakhostin Panahi, Dariush Salari, Aligholi Niaei, **Seyed Mahdi Mousavi**, NO reduction over nanostructure M-Cu/ZSM-5 (M: Cr, Mn, Co and Fe) bimetallic catalysts and optimization of catalyst preparation by RSM, Journal of Industrial and Engineering Chemistry, **2013**, 19: 1793–1799.
D. Salari, A. Niaei, J. Amanpour, **S. M. Mousavi,** P. Nakhostin Panahi, "Optimization of Cu/Activate carbon catalyst in low temperature selective catalytical reduction of NO process using response surface methodology", Journal of Environmental Science and Health, Part A , **2013** 48: 879–886**.**
S. M. Mousavi, P. Nakhostin Panahi, A. Niaei, A. Farzi, D. Salari, "Modeling and Simulation of Styrene Monomer Reactor: Mathematical and Artificial Neural Network Model", International Journal of Scientific & Engineering Research, **2012,** 3 (3), 1-8.
P. Nakhostin Panahi, **S. M. Mousavi**, A. Niaei, A. Farzi, D. Salari, "Simulation of methanol synthesis from synthesis gas in fixed bed catalytic reactor using mathematical modeling and neural networks", International Journal of Scientific & Engineering Research, **2012,** 3 (2), 1-8.
A. Karimi, **S. M. Mousavi,** B. Ghiasi, John R. Grace, "Immobilization of α-Amylase on Modified Mesostructure Perlite", American Journal of Scientific Research, **2011**, 32: 107-114.
A. Karimi, **S. M. Mousavi,** "Use of Enzyme as a structure directing agent in preparation of nano-porous silica", Iranian Journal of Chemistry & Chemical Engineering (IJCCE), **2010,** 29 (1): 95-101.
A. Karimi, **S. M. Mousavi,** D. Salari, A. Niaei, "Enhancement of Perlite specific surface area using nano-porous silica deposition method", Iranian Journal of Chemistry & Chemical Engineering (IJCCE), **2009,** 28 (3): 41-48.

Conference papers

27- Structure–activity relationship analysis and evaluation of the pharmaceutical potential of DHPM derivatives with a green chemistry approach, 8th Conference on Applied Chemistry of the Iranian Chemical Society, University of Mazandaran, September 2024

26- Perovskite nanocatalyst LaSrCoO3: An efficient and green approach in the synthesis of dihydropyrimidinones, 8th Conference on Applied Chemistry of the Iranian Chemical Society, University of Mazandaran, September 2024

25- SCR of NO by NH3 on Cu-SAPO-34 nanocatalysts: a comparative study of different preparation techniques, Proceedings of the 2nd Iran National Zeolite Conference (2INZC) 27-28 May 2015, Tehran, Iran

24- NO Reduction over Fe-Cu/ZSM-5 Nanocatalyst and Study Catalyst Preparation Parameters Proceedings of the 2nd Iran National Zeolite Conference (2INZC) 27-28 May 2015, Tehran, Iran

23- M-Ag/ZSM-5 (M: Mn, Fe and Ni) Bimetallic Nanocatalysts for NH3-SCR DeNO, Proceedings of the 2nd Iran National Zeolite Conference (2INZC) 27-28 May 2015, Tehran, Iran

22- Removal of crystal violet from water using zeolit-MMT nanocomposite and modeling of experimental results by response surface methodology. 7th International Conference On Nanostructures (ICNS7).

21- Catalytic Reduction of NOx over MnOx/γ-alumina Prepared by Homogeneous Deposition Precipitation, The 6th IRANIAN NATIONAL ZEOLITE CONFERENCE QUCHAN UNIVERSITY OF TECHNOLOGY, September 17-18, 2019

20- Synthesis of Vanadium Oxide Nanostructures and Their Performance in NH3-SCR of NOx, *Proceedings of the Asian Nano Forum Congress (ANFC2015), 8-11 March 2015, Kish Island, Iran.*

19- Removal of NOx overLaMnO3 and LaMn0.75A0.25O3 (A=Cu, Fe &Zn) perovskite Nanocatalysts, *Proceedings of the Asian Nano Forum Congress (ANFC2015), 8-11 March 2015, Kish Island, Iran.*

18- Optimization Studies of NOx Reduction over Ba-CeO2-MnOx Mixed Oxide Nanocatalyst by RSM, *Proceedings of the Asian Nano Forum Congress (ANFC2015), 8-11 March 2015, Kish Island, Iran.*

17- Catalytic removal of NOx by CeO2-MnOx mixed oxide supported on H-ZSM-5, *National Conference on Environment and Green Industry, December 2014, university of Esfahan, Esfahan, Iran.*

16- Selective Catalytic Reduction of NO with Ammonia over Nanostructure Copper Supported ZSM-5 Zeolite Catalysts, *2nd National Conference on New technologies for Environmental Pollution Control, November **2013**, Tehran, Iran.*

15- Effect of Si/Al_2 Ratios on the Activity of Cu-ZSM-5 Catalysts in the NOx Reduction Performance, *2nd National Conference on New technologies for Environmental Pollution Control, November **2013**, Tehran, Iran.*

14- Catalytic Removal of NO_X by CeO_2-MnO_x Solid Solution Catalysts, *Iranian National Seminar of Chemistry and the Environment, October **2013**, Tabriz, Iran.*

M-Pt/Al_2O_3 (M: V, Cr, Mn and Fe) Nanocatalysts in Selective Catalytic Reduction of NO_x, *Iranian National Seminar of Chemistry and the Environment, October **2013**, Tabriz, Iran.*

13- Kinetic Modeling of NO_x Reduction Process by Ammonia over Cu/ZSM-5 Nanocatalyst, *20th International Congress of Chemical and Process Engineering CHISA 2012, August **2012**, Prague, Czech Republic.*

12- Selective Catalytic Reduction of NO with NH_3 over Zeolite Supported Transition Metal Oxide Nanocatalysts, *International Congress on Nanoscience & Nanotechnology (ICNN2012), September **2012**, Kashan, Iran.*

11- Development of $LaCo_xFe_{1-x}O_3$ perovskite nano catalysts for reduction of NO_x with NH_3, *4th International Conference on Nanostructures, March, **2012**, Kish Island, Iran.*

10- Study of solvent effect on preparation of vanadium oxide nanostructur with hydrothermal process, *7th International Chemical Engineering Congress & Exhibition, November **2011**, Kish Island, Iran.*

9- Mathematical modelling and simulation of styrene monomer reactor: a Case Study, *7th International Chemical Engineering Congress & Exhibition, November **2011**, Kish Island, Iran.*

8- Hybrid ANN and mathematical modeling of a methanol synthesis fixed bed reactor, *7th International Chemical Engineering Congress & Exhibition, November **2011**, Kish Island, Iran.*

7- Catalytical reduction of NOx over granular active carbon nanocatalysts impregnated with copper oxide, *7th International Chemical Engineering Congress & Exhibition, November **2011**, Kish Island, Iran.*

6- Immobilization of α-Amylase on Enhanced Surface Area Perlite, *3nd International Congress on Nanoscience and Nanotechnology, November **2010**, Shiraz, Iran.*

5- α-Amylase: New Template in Nanoporous Material Synthesis, *6nd National Biotechnology Congress of I. R. Iran, August **2009**, Tehran. Iran.*

4- Immobilization of α-Amylase via Adsorption on Ordered Nanoporous Silica, *2nd International Congress on Nanoscience and Nanotechnology, October **2008**, Tabriz, Iran.*

3- Stabilized Laccase on Ordered Mesoporous Silica, *2nd International Congress on Nanoscience and Nanotechnology, October **2008**, Tabriz, Iran.*

2- Modification of Perlite Surface Structure via Coating of Mesoporous Silica Microspheres, *4th Nanotechnology Iranian Student Conference, October 2008, Kermanshah, Iran.*

1- Immobilization of Laccase on ordered mesoporous silica: case of an inorganic–organic hybrid, *10th Iranian Inorganic Conference, May **2008**, Zahedan, Iran*