

Mohsen Saeidi

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PROFESSIONAL SUMMARY

Driven and passionate professional with more than 3 years' experience working in catalysts industry. A deeply committed and capable Research Fellow. A confident presenter. Expert in nanofabrication, electrochemistry, catalysts, and materials characterization. Highly experienced in team management, design, and construction of technical setups. Currently focused on solar fuels using MOF-based photoelectrodes. Looking to learn, improve, and thrive.

EDUCATION

09/2015 – 04/2022

Sharif University of Technology (SUT) | Tehran, Iran

PhD Candidate in Materials Science and Engineering (GPA: 17.82/20)

Supervisor: **Professor A. Simchi**

Thesis Title: **Development of 3D graphene/gold nanostructure hybrids for supercapacitors and electrochemical biosensors**

02/2018 – 06/2018

Pohang University of Science and Technology (POSTECH) | Pohang, South Korea

Exchange PhD candidate in Materials Science and Engineering (GPA: 3.92/4)

PROFESSIONAL EXPERIENCES

04/2022 to Current

Postdoctoral Fellow | Research Center of Nanostructured and Advanced Materials (CNAM), Sharif University of Technology (SUT), Tehran, Iran

- Au/Ag nanoparticles decorated Co-based metal-organic frameworks (MOFs) as electrochemical biosensors and CO₂RR electrocatalysts.
- Layered double hydroxides (LDHs) for photo/electrochemical water splitting.
- Photo/electrocatalyst development for CO₂ reduction reaction (CO₂RR).
- Design and fabrication of immunosensors using gold/silver nanoparticles on MOFs
- Hydrogel-based colorimetric biosensors
- Single-atom electrocatalysts for water splitting
- Additive manufacturing of SS-316L for water splitting and CO₂RR

05/2022 to 07/2022

Instructor | Boot Camp by Sino Summer School

Designing and presenting a short course on energy storage systems. *During this course, I have presented 7 lectures on EIS, CV, GCD, etc. Moreover, the AI applications on the energy storage systems have been covered.*

02/2021 to 04/2022

Research Fellow | Chemistry and Chemical Engineering Research Center of Iran, Tehran.

Working on a research project titled: *synthesis and characterization of SAPO-34 catalysts for the methanol to olefine (MTO) process*, Supervisor: **Dr. M. Hamidzadeh**

08/2021 to 09/2021

Participant | Sino's online summer school on "Machine learning and applications"

08/2020 to 03/2021

Referee | 3rd Rahneshan competition, Tehran, Iran

06/2018 – 02/2019

Visiting Researcher | Pohang University of Science and Technology (POSTECH), Pohang, South Korea

Working on my PhD thesis in the Biomolecular Materials Lab., Advisor: **Dr. Seung-Soo Oh**

02/2016 – 08/2021

Teaching Assistant | Sharif University of Technology (SUT), Tehran, Iran

- Gave tutorials on the following courses to undergraduate students:
 - Principles of polymer engineering, Sharif University of technology
 - Crystallography and X-ray diffraction, Sharif University of technology
 - Materials characterization techniques & Lab, Sharif University of technology
 - Principles of Materials Science and Engineering, Sharif University of technology

06/2012 – 08/2015

Research Fellow | Chemistry and Chemical Engineering Research Center of Iran, Tehran.

Working on a research project titled: *synthesis and characterization of zeolite supported catalysts for selective catalyst reduction of NO_x with ammonia*, Supervisor: **Dr. M. Hamidzadeh**

CORE COMPETENCES

- **Designing, Building and Operating Technical Setups:** extensively experienced with Zeta reactor, CVD, nanofabrication, materials characterization techniques, Electrochemical techniques (especially EIS and CV).
- **Management and Administration:** Hardworking and detailed oriented; Proven patience and self-discipline; Financial aptitude, and planning; Critical thinking proficiency.
- **Data Collection and Analysis**
- **Teaching, Tutoring and Presenting**
- **Software:**
X'Pert HighScore Analytical XRD Software; Nova Software for Autolab instruments; ZView, ZSim, Origin; MATLAB; Python for machine learning; general use of office suites.
- **Human Languages:** *Persian (Native), English (Fluent), Germany (elementary)*

PUBLICATIONS

1. **M. Saeidi, M. A. Amidian, S. Sheybanikashani, H. Mahdavi, H. Alimohammadi, L. Syedmoradi, F. Mohandes, A. Zarrabi, E. Tamjid, K. Omidfar, A. Simchi,** Multilayered Mesoporous Composite Nanostructures for Highly Sensitive Label-Free Quantification of Cardiac Troponin-I, *Biosensors*, 12, 2022, 337.

2. **M. Saeidi**, M. J. Lee, O. F. Ngome Okello, S. Y. Choi, S. S. Oh, A. Simchi, Ultrafast Graphitization and Reduction of Spongy Graphene Oxide by Low-Energy Electromagnetic Radiation to Boost the Performance and Stability of Carbon-based Supercapacitors, *ACS Applied Energy Materials*, 5 (1), 2022, 367.
3. **M. Hamidzadeh**, **M. Saeidi**, S. Komeili, Modified seeding method to produce hierarchical nanocrystalline ZSM-5 zeolite, *Materials Today Communications*, 25, 2020, 101308.
4. **M. Hamidzadeh**, S. Komeili, **M. Saeidi**, Seed-induced synthesis of ZSM-5 aggregates using the Silicate-1 as a seed: Characterization and effect of the Silicate-1 composition, *Microporous and Mesoporous Materials*, 268, 2018, 153-161.
5. **M. Saeidi**, M. Hamidzadeh, Co-doping a metal (Cr, Mn, Fe, Co, Ni, Cu, and Zn) on Mn/ZSM-5 catalysts and its effect on the catalytic reduction of nitrogen oxides with ammonia, *J. Research on Chemical Intermediates*, 43 (4), 2017, 2143.
6. **M. Saeidi**, H. Sarpoolaky, S. M. Mirkazemi, Characterization and microstructure investigation of novel ternary ZrO₂-Al₂O₃-TiO₂ composites synthesized by citrate-nitrate process, *J. Sol-gel Science and Technology*, 76 (2), 2015, 436.
7. **M. Saeidi**, H. Sarpoolaky, S. M. Mirkazemi, Ultrasonic-assisted co-precipitation method of preparation of nanocomposites in the Al₂O₃-TiO₂-ZrO₂ system: characterization and microstructure, *J. Ultrafine Grained and Nanostructured Materials*, 45, 2012, 7.
8. **M. Saeidi**, H. Sarpoolaky, [Investigation of Performance Mechanism and Preparation Methods of NO_x Storage-Reduction Catalysts](#), *J. of Iranian Ceramic Society (in Persian)*, 27, 2010, 37.

PATENTS

1. **M. Saeidi**, M. Hamidzadeh, A. Tarlani, M. Ghassemzadeh, Selective Catalyst Reduction of Nitrogen Oxide Using Manganese Impregnated Zeolite (ZSM-5), *Iran Patent, Registration No. 87907, Feb. 6, 2016.*

CONFERENCES

1. **M. Hamidzadeh**, **M. Saeidi**, A. M. Khachatourian, P. Asadipour, M. Bastam, Alumina-supported SAPO-34 catalyst for methanol to olefins (MTO) conversion, *21st ICS International Chemistry Congress, 20-28 Jul. 2022, Azarbaijan Shahid Madani University, Tabriz, Iran.*
2. **M. Saeidi**, M. J. Lee, O. F. Ngome Okello, S. Y. Choi, S. S. Oh, A. Simchi, Gold Tetrapod Decorated Three-dimensional Graphene: Synthesis and Characterization, *8th International Conference on Nanostructures (ICNS8), held online on November 18-20, 2020.*
3. **M. Saeidi**, M. Hamidzadeh, A. Tarlani, M. Ghassemzadeh, Performance of Co-, Fe- and Mn/ZSM-5 in Selective Catalytic Reduction (SCR) of NO_x, *16th Iranian Inorganic chemistry Conf. (IICC16), 27-29 Aug., 2014, Bu-Ali Sina University, Hamedan, Iran.*
4. **M. Saeidi**, H. Sarpoolaky, S. M. Mirkazemi, Investigation of Temperature Effects and Synthesis Parameters on Phase Transformation and Microstructure of Alumina, Titania and Zirconia nanocomposite powders by Coprecipitation Rout, *4th Inter. Conf. on Nanostructures (ICNS4), 12-14 Mar., 2012, Kish Island, Iran.*
5. **M. Saeidi**, H. Sarpoolaky, S. M. Mirkazemi, Ultrasonic-Assisted Co-Precipitation Method of Preparation of Nanocomposites in the Al₂O₃-TiO₂-ZrO₂ System: Characterization, Properties and Microstructure, *3rd Inter. Conf. on Ultrafine Grained and Nanostructured Materials, 2-3 Nov., 2011, University of Tehran, Tehran, Iran.*