

Reza Khaleghi Abasabadi

Personal Information

- **Phone:** +39-3517168541
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Education

- **MSCA ITN- European Industrial Doctorate student in Chemical and Material Science**
Nov 2021 – present
Department of Chemistry, University of Turin, Turin, Italy
"Characterization and testing of SO₂ poisoning effect on Cu-CHA zeolites application"
Supervisors: Prof. Gloria Berlier, Dr. Ton V. W. Janssens and Prof. Elisa Borfecchia
- **M.Sc. in Chemical Engineering**
Sep 2015 – Sep 2018
College of Engineering, University of Tehran, Tehran, Iran
"Synthesis and study of The Pd-catalysts supported on graphene for hydrogenation"
Supervisors: Prof. Abbas Ali Khodadadi and Prof. Yadollah Mortazavi
- **B.Sc. in Chemical Engineering**
Sep 2010 – Sep 2014
Sharif University of Technology, Tehran, Iran
"Fabricated a high shear rate viscometer by programming in labview"

Laboratory and Soft Skills

- **Laboratory Skills**
 - Synthesis of heterogenous catalysts for catalytic applications
 - Evaluation of several characterizations for heterogenous catalysts (UV-Vis, FT-IR, Raman, BET, TPx, XAS, SEM, HRTEM)
 - In situ and operando spectroscopy experiments
 - Manufacturing of chemical testing set-up for catalytic activity measurements
 - Software and Programming (Excel, PPT, Origin, Latex, Labview and Python)
- **Soft Skills**
 - Participation in Personal career development plan (PCDP)
 - Skilled in presenting research through written reports and oral presentations
 - Languages Farsi: Native English: Fluent Italian: Basic Danish: Basic

Work Experiences

- **European Industrial Doctorate student, Umicore Denmark ApS, Hørsholm, Denmark**
Aug 2022 – Jan 2024
 - Investigation of deactivation and kinetics of Cu-CHA catalyst in NH₃-SCR reaction
- **European Industrial Doctorate student, Department of Chemistry, University of Turin, Turin, Italy**
Nov 2021 – Jul 2022
 - In situ DR UV-Vis and FT-IR spectroscopy of SO₂ poisoning of Cu-CHA catalysts
- **R&D Scientist in Three-Way Catalysts, Iran Delco Co, Tehran, Iran** Oct 2020 – Oct 2021
 - Measurements of activity and Oxygen Capacity Storage for catalysts
 - Synthesis of La-doped Al₂O₃ and evaluation the thermal stability of catalysts
 - Evaluation different drying processes on the performance of Three-Way catalysts
- **Research Engineer, SensIran Co, Tehran, Iran** Oct 2018 – Aug 2020
 - Synthesis, Characterization, and catalytic activity of Three-Way catalysts
 - Participation in Construction of multi-point surface area analyzer
- **Research Assistant, Catalysis and Nano-Structured Materials Research, University of Tehran, Tehran, Iran** Oct 2016 – Sep 2019
 - Synthesis and study of the Pd-catalysts on graphene for hydrogenation
 - Characterization and catalytic activity of supported Pd and Ni Catalysts for hydrogenation of furfural
 - Synthesis, characterizations, and activity measurements of novel nanostructures for desulfurization of fuels
- **Research Engineer, Theran, Iran** Oct 2014 – Sep 2016
 - Carbon capture by Alkaline Solid Waste
 - Fabrication a microfluidic device by programming in LabVIEW
- **Internship, Iran Polymer & Petrochemical Institute, Tehran, Iran** Jul 2014 – Sep 2014

Awards and Honors

- **Top 10** in GPA among 55 Chemical Engineering students in M.Sc. at UT 2015-2018
- **41st place** among more than 20,000 students in the entrance exam of National Graduate Chemical engineering schools 2015
- **1900th place** among more than 200,000 in prestigious nationwide university exam 2010

Publications and Conferences

- Abasabadi RK, Khodadadi AA, Mortazavi Y. Effects of nitrogen-containing functional groups of reduced graphene oxide as a support for Pd in selective hydrogenation of cinnamaldehyde. **Research on Chemical Intermediates**. 2021 Apr;47(4):1429-46.
- Sohrabi S, Abasabadi RK, Khodadadi AA, Mortazavi Y, Hoseinzadeh A. In-situ one-step deposition of highly dispersed palladium nanoparticles into zirconium metal–organic framework for selective hydrogenation of furfural. **Molecular Catalysis**. 2021 Sep 1;514:111859.
- Fahimirad B, Malekshah RE, Chamjangali MA, Abasabadi RK, Bromand S. Theoretical and experimental study of the photodegradation of methyl orange in the presence of different morphologies of Au-ZnO using Monte Carlo dynamic simulation. **Environmental Science and Pollution Research**. 2022 Aug;29(36):55131-46.
- Martini A, Negri C, Bugarin L, Deplano G, Abasabadi RK, Lomachenko KA, Janssens TV, Bordiga S, Berlier G, Borfecchia E. Assessing the influence of zeolite composition on oxygen-bridged diamino dicopper (II) complexes in Cu-CHA deNO_x catalysts by machine learning-assisted X-ray absorption spectroscopy. **The Journal of Physical Chemistry Letters**. 2022 Jun 28;13(26):6164-70.
- Molokova AY, Abasabadi RK, Borfecchia E, Mathon O, Bordiga S, Wen F, Berlier G, Janssens TV, Lomachenko KA. Elucidating the reaction mechanism of SO₂ with Cu-CHA catalysts for NH₃-SCR by X-ray absorption spectroscopy. **Chemical Science**. 2023;14(41):11521-31.
- Abasabadi RK, Janssens TV, Bordiga S, Berlier G. Probing the effect of the Si/Al ratio in Cu-CHA zeolite catalysts on SO₂ exposure: in situ DR UV-vis spectroscopy and deactivation measurements. **Catalysis Science & Technology**. 2024; 14, 3076-3085.
- Following SO₂ poisoning of Cu⁺ and Cu²⁺ on CHA zeolites for the NH₃-SCR reaction: an in situ UV-Vis study. **The 20th International Zeolite Conference (IZC2022)**, Valencia-Spain, 3rd to 8th July, 2022. **(Poster)**
- Investigation of SO₂ poisoning of Cu species on CHA zeolites by Diffuse Reflectance UV-VIS NIR spectroscopy. **The 20th National Congress on Catalysis**, Riccione, Italy, 11th to 14th September, 2022. **(Oral)**
- Effect of the Si/Al ratio on SO₂ poisoning of Cu-CHA zeolites studied by in situ DR UV-Vis spectroscopy and deactivation measurements. **The 7th International Congress on Operando Spectroscopy**, Grindelwald-switzerland, 7th to 11th May, 2023. **(Poster)**
- In situ SO₂ poisoning and deactivation measurements of Cu exchanged zeolite catalysts in NH₃-SCR reaction, **The 15th European Congress in Catalysis**, Prague, Czech Republic, 27th August to 1st September, 2023. **(Oral)**