

Curriculum Vitae

Personal Information

<i>Last name: Salari</i>	<i>Email: hadi2893@gmail.com</i>
<i>Given name: Hadi</i>	<i>Mailing Address:</i>
<i>Date of birth: 21.09.1985</i>	<i>Kinetic and Catalyst Research Lab, Department of Chemistry, Sharif University of Technology, Azadi Ave., Tehran, Iran.</i>

Degrees

Department of Chemistry, Sharif University of Technology, Tehran, Iran
2009-2013. **Ph.D. in Physical Chemistry**

Department of Chemistry, Sharif University of Technology, Tehran, Iran
2007-2009. **M.Sc. in Physical Chemistry**

Department of Chemistry, Ferdowsi University, Mashhad, Iran
2003-2007. **B.Sc. in Pure Chemistry**

Shahede Hekmat School, Mashhad, Iran
1999-2002. **Diploma in Experimental Sciences**

Honors

- **42th** in the Nationwide Chemistry M.Sc Entrance Exam, Iran 2005 (Total participants 9000 chemistry students)
- Ranked: 1701 in Nationwide B.Sc Entrance Exam, Iran 2003 (Among 250000 participants)
- Being the top student in 3 years of high school and pre-university

Expertise:

- ❖ Nanostructures synthesis and characterization
 - Metal nanocomposites (supported Au, Ag, Pt, Pd and Cu catalysts)
 - Colloidal nanoparticles (gold nanorods and gold nanospheres)
 - Metal organic frameworks ([Cu₃(btc)₂], IRMOF-0, MOF-199)
 - BiVO₄, SiO₂ and Zeolitic nanostructures
 - TiO₂, CdS and ZnO nanoparticles
- ❖ Heterogeneous and homogenous reaction kinetics and catalysis
 - Selective oxidation of alkane, alkene and alcohol with dioxygen
 - Visible-light Responsive Photocatalysis and Self Cleaning Systems
 - Photocatalytic reduction and photooxidation
 - Surface and interfacial phenomena with hydrophobic particles
- ❖ Sustainable (green) chemistry
 - Ionic Liquid-modified TiO₂ nanoparticles with enhanced photocatalytic activity
 - Properties of Ionic Liquids solvents for catalysis
- ❖ Organic solar cells
 - Preparation of organic solar cells with C₆₁ and C₇₁ derivatives
 - SCLC tests and analysis
 - Al, Au, MoO₃ and LiF thin film preparations for using as electrodes

Research Projects and Experiences

- Some efficient CO₂ reduction photocatalysts under visible light, 2008.
- Synthesis of new Ionic Liquids and measurement of solvatochromic parameters in binary mixtures of Ionic Liquids, 2008.
- Synthesis of Graphene nanocomposites and investigation of catalytic activity in ionic liquids media, 2009.
- Layer by layer self-assembly of polyelectrolyte-semiconductor nanoparticles, 2009.
- Synthesis of functionalized CNTs and investigation of some catalytic reaction, 2010.
- Synthesis and characterization of various Copper MOF, 2011.
- Halloysite nanotubes supported gold catalyst for alkene oxidation with molecular oxygen, 2012.
- Comparison of the substrate dependent performance of Cu-, Au- and Ag-doped TiO₂ photocatalysts in production and in decomposition of various organic pollutants, 2013.
- Synthesis, structure and metalation of some porous Metal Organic Frameworks, 2014.
- Organic solar cells with PC₇₁BM-PCDTBT and PC₇₁BM-PTB7 Blends, 2015

Publications

- "Solvatochromic probes absorbance behavior in mixtures of 2-Hydroxy Ethylammonium Formate with methanol, ethylene glycol and glycerol"
Hadi Salari, Alireza Harifi-Mood, MohammadReza Elahifard, Mohammad Reza Gholami. **J. Sol. Chem.** **2010**, 39, 1509-1519.
- "Preferential solvation and behavior of solvatochromic indicators in mixtures of an Ionic Liquid with some molecular solvents"
Hadi Salari, Mohammad Khodadadi-Moghaddam, Alireza Harifi-Mood, Mohammad Reza Gholami. **J. Phys. Chem. B.** **2010**, 114, 9586–9593.
- "Photocatalytic reduction of nitrobenzene with NaBH₄ in aqueous medium over the Ag/AgBr/TiO₂/NZ and Ag/AgBr/NZ nanocomposites"
Mohsen Padervand, Hadi salari, Faramarz Sadeghzadeh darabi, Mohammad Khodadadi-Moghaddam, Mohammad Reza Gholami. **International Journal of Materials and Chemistry.** **2011.** 1, 1, 1-4.
- "Investigation of carbon nanofiber growth on Ni-based catalyst by Catalytic Chemical Vapor Deposition method"
Faramarz sadeghzadeh darabi, Mohsen Pedervand, Mohammad Khodadadi Moghaddam, Hadi Salari, Seyedsaeed Ahmadvand, Mohammad Reza Gholami. **Advanced Science, Engineering and Medicine.** **2012**, 4, 294-298.
- "Removal of organic pollutants in the waste water by photocatalytic behavior of AgX/TiO₂ photocatalysts"
Mohsen Padervand, Hadi Salari, Seyedsaeid Ahmadvand , Mohammad Reza Gholami. **Research on Chemical Intermediates.** **2012**, 38, 1975-1985.
- "Solvents design on the basis of molecular-microscopic properties of binary mixtures for Lycopene extraction"
Hadi Salari, Hanie Rohani, Mohammad Reza Elahifard, Mohammad Hosseini, and Mohammad Reza Gholami. **American Journal of Chemistry.** **2012**, 2, 2, 94-98.
- "System designed with Ionic Liquid and molecular solvents to investigate kinetics of a S_NAr reaction"
Hadi Salari, Mohammad Reza Gholami. **Progress in Reaction Kinetics and Mechanism.** **2013**, 38, 157-170.
- "Kinetic and mechanistic study of p-nitrochlorobenzene photoreduction and Bacillus inactivation over aluminosilicate-based nanocomposites"
Mohsen Padervand, Hadi Salari, Faramarz Sadeghzadeh Darabi, Mohammad Reza Gholami. **Monatsh Chem.** **2013**, 144, 589-596.
- "Hydrogen bonding and solvent effects on reaction kinetics between 2-chloro-3,5-dinitropyridine and aniline in Ionic Liquid and molecular solvents mixtures"
Hadi Salari, Mohammad Reza Gholami. **Russian Journal of Physical Chemistry A.** **2013**, 87, 1969-1975.
- "Molecular-microscopic properties and preferential solvation in protic Ionic Liquid mixtures"
Hadi Salari, Mohammad Reza Gholami. **Journal of Solution Chemistry.** **2013**, 42, 1757-1769.
- "Colloidal gold nanoparticles: an unexpected catalytic activity in aqueous phase with dioxygen"
Hadi Salari, Mohammad Reza Gholami. **Catalysis Letters,** **2014**, 144, 1219-1222.
- "Hydroxyl-Functionalized 1-(2-Hydroxyethyl)-3-methyl Imidazolium Ionic Liquids: Thermodynamic and Structural Properties using Molecular Dynamics Simulations and ab Initio Calculations"

Mostafa Fakhraee, Borna Zand Karimi, Hadi Salari, and Mohammad Reza Gholami. **J. Phys. Chem. B.** **2014**, 118, 14410-14428.

- “An experimental and theoretical study on the structure and photoactivity of XFe_2O_4 (X= Mn, Fe, Ni, Co, and Zn) structures”
Mohsen Padervand, Hadi Salari, Mohammad Reza Gholami. **Russian Journal of Physical Chemistry A.** **2014**, 88, 2451-2461.
- “Selective oxidation of alkenes with dioxygen by 55-atom gold clusters modified-Ionic Liquids”
Hadi salari, Mohammad Reza Gholami. **2015** under review
- “Surfactant binary systems: Preferential solvation and investigation of solvatochromic parameters”.
Hadi Salari, Mohammad Reza Gholami. **2015** under review

Conferences and programs:

- “Synthesis of Gold nanoparticles modified with Ionic Liquid”
13th Iranian Physical Chemistry Seminar, 2010, Shiraz, Iran (**oral presentation**).
- “Synthesis of new various Ionic Liquids and determination of their solvatochromic parameters”
14th Iranian Physical Chemistry Seminar, 2011, Kish, Iran (**poster presentation**).
- “Removal of organic pollutant in the waste water by photocatalytic behavior of Ag/TiO₂ loaded on Mordenite Nanocrystalline”
4th International Conference on NanoStructures (ICNS4), 2012, Kish Island, Iran (**poster presentation**).
- “Selective Oxidation of Alcohol with Dioxygen on Modified Gold Nanocatalysts”
14th Iranian Inorganic Chemistry Conference, 2012, Tehran, Iran (**poster presentation**).
- Workshop on “Portable X-ray analytical instruments for cultural heritage”, 2013, ICTP, Trieste. Italy.
- Fellowship in CNR (Italian National Research Council).
October 2014 to March 2015, Bologna, Italy.

Projects Supervision

- Supervisor of Chemical Kinetics Lab (Prof. Gholami's) at Sharif University of Technology (2009-present).
- “Kinetics investigation of S_NAr reaction using linear and nonlinear free energy” 2009.
- “Preferential solvation model investigation in protic Ionic Liquid mixtures” 2010.
- “Binary mixtures solvents design for Lycopene extraction” 2010.
- “Selective liquid phase oxidation of alcohols with modified gold nanostructures” 2011.
- “Synthesis and characterization of some MOFs and investigation of catalytic activity in oxidation reaction” 2011.

- “Synthesis and characterization of functionalized Graphene and MOFs” 2011.
- “Investigation of alkene oxidation by colloidal silver nanoparticles” 2012.
- “Chemoselective metal catalysts for the hydrogenation of some substituted nitroaromatics” 2013.

Work Experience

Post-doc:

- Department of Chemistry, Sharif University of Technology, 2013-2015.

Teaching:

- Physical chemistry I and II. Sharif University of Technology, 2012.
- General chemistry I and II. Sharif University of Technology, 2011-2012.
- Advanced chemical kinetics and Liquid phase kinetics. Sharif University of Technology, 2013.

Research Assistant:

- Educational and Research Laboratory Assistance, Department of Chemistry, Sharif University of Technology, 2008-2013.

Computer and Instrumental Skills

- Computational chemistry softwares: Gaussian 98, Gaussian 2003, Gaussian Viewer, HyperChem
- Applicable software in windows environment: MS office (Word, Excel, Power Point, Access), Adobe Photo Shop, Macromedia Freehand, Origin
- FT-IR, GC, UV, SEM, XRD, Profilometer, Glove box evaporator