Curriculum Vitae

Personal Information

Name: **Mehdi Sheykhan**

Position: **Associate Professor**

Affiliation: **Chemistry Department, Tarbiat Modares University, Iran**

Date of Birth: **02/10/1984**

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Education

- **Ph.D. in Organic Chemistry:** Tarbiat Modares University (TMU) (Under the supervision of ***Prof. Akbar Heydari***, and advisory of ***Prof. Ali Morsali***), (2008-2012)
- **Master of Science in Organic Chemistry:** Tarbiat Modares University (TMU), (2006-2008)
- **Bachelor of Science in Applied Chemistry:** University of Guilan, (2002-2006)

Professional Recognition Awards

- **Top researcher** of the University of Guilan (2018)
- "**Ranked First (1st) prize** among all top-level chemistry PhD students" (2012)
- '**Excellent Student Grade prize**' from the High Talent Organization of Iran (2009)
- **Prize-winner** of 'PhD exam in Tarbiat Modares University' by virtue of achieving the highest rank (2008)
- "**Ranked First (1st) prize**" among all top-level chemistry postgraduates (2008)
- "**Ranked First prize**" among more than 9500 participants in the "National University Entrance Exam for MSc degree" in Organic Chemistry (2006)
- '**The Prize of Chemistry Olympiad of Iran**' for gaining No.3 Iran's ranking (2006)
- Graduated with "**Distinguished Student award**" in BSc (2006)
- Being **recognized as an exceptional talent by the Iran's National Elites Foundation (INEF) and awarded member of INEF**, the society of prominent students of Iran (2006)

Skills

- Professional in Materials Chemistry Specially the Chemistry of Catalysts
- Professional in Nanocatalysis
- Professional in MOF-catalysis
- Experiences in Electroorganic Synthesis
- Experiences in Designing Novel Organic Transformations
- Expertise in Spectroscopic Methods

Research Interest

- Metal-Organic-Frameworks in Catalysis
- Designing, Synthesis and Characterization of Novel Hybrid Materials
- Organic Synthesis thorough both Homogeneous and Heterogeneous Catalysts
- Synthesis of Small Organic Molecules under Metal-free Conditions
- Light-induced Organic Transformations
- Electroorganic Synthesis

Grants Received

- Grant for proposal of PhD thesis (**Grant no. 17594**, 2010) from INIC
- Grant for PhD thesis (**Grant no. 44666**, 2012) from INIC
- Grant for original research papers (**Grant no. 25207**, 2011); (**Grant no. 32831**, 2011); (**Grant no. 44670**, 2012); (**Grant no. 42047**, 2013); (**Grant no. 106590**, 2016); (**Grant no. 129606**, 2017); and (**Grant no. 123252**, 2018) from INIC
- Research Grant entitled "Homogeneous and heterogeneous catalysts in organic chemistry", 2014-2015, The University of Guilan
- Research Grant entitled "Novel bond-formation routs in organic chemistry", 2016-2017, The University of Guilan
- Research Grant entitled "Designing novel methods in activation of inert bonds", 2017-2018, The University of Guilan
- Research Grant entitled "Functionalization of electron-poor olefins", 2018-now, The University of Guilan

Institutional Services

PhD Supervisor, University of Guilan

- *Supervisor of thesis of 5 PhD students, (2014-present).*

PhD Advisor, University of Guilan

- *Advisory of theses of 16 PhD students, (2012-Present).*

Upper graduate supervisor, University of Guilan

- *Supervisor of theses of 30 MSc students, (2015- Present).*

Upper graduate Advisor, University of Guilan

- *Advisory of theses of 28MSc students, (2012- Present).*

Upper graduate Advisor, Tarbiat Modares University

- *Advisory of theses of 2 MSc students, (2013-2015).*

Professional Memberships

- **Associate Professor**, Organic Chemistry Branch, Faculty of Science, University of Guilan, Rasht, Iran (2012-Present).
- **Funding member** of the "Guilan Food and Drug Research Center", 2018-Present.
- **Managing director** of a "knowledge-intensive company" aiming extraction of fine chemicals from the waste of endemic plants, 2019-Present.
- **Member** of "Equipment Committee of the University of Guilan", 2015-2018.
- **Member** of "Pharmaceutical and Medical committee of the University of Guilan", 2019-present.

Reviews for Scientific Journals (in last 3 year)

- The Journal of Organic Chemistry
- European Journal of Organic Chemistry
- ACS Combinatorial Science
- Synthesis
- ChemistrySelect
- Applied Organometallic Chemistry

Selected publications

1-"Cast light on mixed-metal MOF-catalyzed aerobic oxidation"

Mehdi Sheykhan,* Masoumeh Abbasnia, Mona Bahmani

Ready for Submission.

2-"Copper-catalyzed tandem amination/oxidation of simple arenes"

Mehdi Sheykhan,* Parvaneh Taghizadeh, Masoumeh Abbasnia, Hessam Yousefi

Ready for Submission.

3-"Electrochemical synthesis of *α*-ketoamides: A green expedient method using inactive amines

Masoumeh Abbasnia, Mehdi Sheykhan*

Ready for Submission.

4-The Efficient LED-Driven MOF-Catalysis for Aerobic C-H and C-C Bond Oxidation

Mehdi Sheykhan*, Mona Bahmani, Masoumeh Abbasnia

Catalysis Science & Technology, **doi:** 10.1039/D4CY00892H

5-S-scheme mechanism in the TiO_2/Cu_2O@Cu system toward selective degradation of an electron-rich dye pollutant under solar light

Marzieh A. Jalali, Ahmad D. Koohi, Mehdi Sheykhan

Journal of Molecular Liquids, **2024,** 125830

6-Comparative Toxicity of TiO_2 and Sn-Doped TiO_2 Nanoparticles in Zebrafish After Acute and Chronic Exposure

Maryam Mahjoubian, Akram Sadat Naeemi, Mehdi Sheykhan

Biological Trace Element Research, **2024,** 1-19

7-Catalytic Cracking of Polystyrene and Low-Density Polyethylene over Synthesized Zeolite Na-A with Optimized Crystallinity

S.A Sakaki, Ahmad Dadvand Koohi, M Rashidzadeh, Mehdi Sheykhan

Korean Journal of Chemical Engineering, **2024**, 41, 839-852

8-Dose alkyl chain unsaturation could affect tunability of the aryl alkyl imidazolium-based ion pairs?

Behzad Khalili, Mehdi Sheykhan, Marziye Alijanpour, Khatereh Ghauri

Polycyclic Aromatic Compounds **2023**, doi 10.1080/10406638.2023.2254905.

9-Synthesis and Application of Novel Magnetic Supported Copper Nanocatalyst for the Preparation of Thiazoles

Fatemeh Alavi, Manouchehr Mamaghani, Mehdi Sheykhan

Polycyclic Aromatic Compounds **2023**, 1-24.

10-One-pot Multicomponent Synthesis of Novel Chromene Derivatives Using New Organic Phosphate Salt Catalysts

S Salmalian, NO Mahmoodi, M Sheykhan

ChemistrySelect **2023**, 8 (33), e202204635.

11-Convergent and efficient synthesis of 1, 2, 4-triazolo [5, 1-b] quinazolin-8-ones using copper incorporated hydroxyapatite encapsulated Kit-6 as a recoverable nanocatalyst

D Pirdelzendeh, M Mamaghani, F Shirini, M Sheykhan

NIScPR-CSIR **2023**, 856-865.

12-Synthesis and application of imidazolium-based ionic liquid supported on hydroxyapatite encapsulated γ-Fe2O3 nanocatalyst in preparation of pyrido [2, 3-d] pyrimidines

F Ramezanzadeh, M Mamaghani, H Fallah-Bagher Shaidaei, M Sheykhan

Polycyclic Aromatic Compounds **2021**, 41, 1925-1943.

13-Copper incorporated hydroxyapatite encapsulated Kit-6 mesoporous silica as a novel and recoverable nanocatalyst for the synthesis of quinazolines

D Pirdelzendeh, M Mamaghani, F Shirini, M Sheykhan

Reaction Kinetics, Mechanisms and Catalysis **2021**, 133, 441-454.

14-"Toxicological effects of Ag_2O and Ag_2CO_3 doped TiO_2 nanoparticles and pure TiO_2 particles on zebrafish (Danio rerio)"

Maryam Mahjoubian, Akram Sadat Naeemi,* Mehdi Sheykhan

Chemosphere **2021**, 263, 128182.

15-"Approach to the Synthesis of Unsymmetrical/Symmetrical Maleimides via Desulfitative Arylation at Different Temperatures"

Masoumeh Abbasnia, Mehdi Sheykhan,* Tahereh Ghaffari, Elham Safari

The Journal of Organic Chemistry **2020**, *85*, 11688-11698.

16-"A new poly carboxylic catex polymer-gold nanoparticles modified electrode for determination of paraquat by voltammetry method"

Zahra Pourakbari, Mehdi Sheykhan, Alireza Aliakbar*

Journal of Environmental Chemical Engineering **2020**, *8*, 104284.

17-"MOFs Come up to scratch: An environmentally benign route to oxidative [4+2] cycloaddition on maleimides solely via MOF in water"

Masoumeh Abbasnia, Mehdi Sheykhan,* Mona Bahmani, Parvaneh Taghizadeh

Green Chemistry **2020**, *22*, 3216-3228.

18-"A metal-catex composite electrode for determination of paraquat in various samples by Ad-differential pulse cathodic stripping voltammetry"

Zahra Pourakbari, Alireza Aliakbar,* Mehdi Sheykhan

Talanta **2020**, *212*, 120793.

19-"Introduction of Ag/CuO/MCM-48 as an efficient catalyst for the one-pot synthesis of novel pyran-pyrrole hybrids"

Fatemeh Tavakoli, Manouchehr Mamaghani,* Mehdi Sheykhan

Applied Organometallic Chemistry **2019**, *33*, e5083.

20-"The first C-Cl activation in Ullmann C-O coupling by MOFs"

Leila Ramezani, Asieh Yahyazadeh, Mehdi Sheykhan*

ChemCatChem **2018**, *10*, 4636-4651.

21-"C-H Activation under the guise of Diels-Alder reaction: annulation toward the synthesis of benzo[e]isoindole-1,3-diones"

Mehdi Sheykhan,* Maryam Shafiee-pour, Masoumeh Abbasnia

Organic Letters **2017**, *19*, 1270-1273.

22-"An approach to C-N activation: coupling of arenesulfonyl hydrazides and arenesulfonyl chlorides with *tert*-Amines via a metal-, oxidant- and halogen-free anodic oxidation"

M. Sheykhan,* S. Khani, M. Abbasnia,* S. Shaabanzadeh, M. Joafshan

Green Chemistry **2017**, *19*, 5940-5948.

23-"Electrocatalytic determination of clopidogrel using Bi_2O_3-Pp-AP/GCE by differential pulse voltammetry in pharmaceutical productions"

Zeinab Rajab-Dizavandi, Alireza Aliakbar,* Mehdi Sheykhan

Journal of Electroanalytical Chemistry **2017**, *805*, 24-31.

24-"Copper-exchanged magnetic-FAp: surface catalysis in decarboxylative coupling of *α*-oxocarboxylic acids with formamides"

Seyed-Abdollah Mirfarjood, Manouchehr Mamaghani,* Mehdi Sheykhan*

ChemistrySelect **2017**, *2*, 8650-8657.

25-"A novel cooperative Lewis acid/Brønsted base catalyst Fe_3O_4@SiO_2-APTMS-$Fe(OH)_2$: An efficient catalyst for the Biginelli reaction"

Mehdi Sheykhan,* Asieh Yahyazadeh, Leila Ramezani

Molecular Catalysis **2017**, *435*, 166-173.

26-"A novel Pb-poly aminophenol glassy carbon electrode for determination of tetracycline by adsorptive differential pulse cathodic stripping voltammetry"

Zeinab Rajab-Dizavandi, Alireza Aliakbar,* Mehdi Sheykhan

Electrochimica Acta **2017**, *227*, 345-356.

27-"Novel access to carbonyl and acetylated compounds: the role of the tetra-*n*-butylammonium bromide/sodium nitrite catalyst"

Mehdi Sheykhan,* Hadi Fallah-Moafi, Masoumeh Abbasnia

RSC Advances **2016**, *6*, 51347-51355.

28-"Cu-EDTA-modified APTMS-Fe_3O_4@SiO_2 core-shell nanocatalyst: A novel magnetic recoverable catalyst for the Biginelli reaction"

Mehdi Sheykhan,* Asieh Yahyazadeh, Zahra Rahemizadeh

RSC Advances **2016**, *6*, 34553-34563.

29-"Experimental study of the removal of copper ions using hydrogels of xanthan, 2-acrylamido-2-methyl-1-propane sulfonic acid, montmorillonite: kinetic and equilibrium study"

Marzieh Aflaki-Jalali, Ahmad Dadvand-Koohi,* Mehdi Sheykhan

Carbohydrate Polymers **2016**, *142*, 124-132.

30-"Synthesis of copper(II) complex covalently anchoring (2-iminomethyl)phenol moiety supported on HAp-encapsulated-α-Fe_2O_3 as an inorganic–organic hybrid magnetic nanocatalyst for the synthesis of primary and secondary amides"

M. Mamaghani,* F. Shirini, M. Sheykhan, M. Mohsenimehr

RSC Advances **2015**, *5*, 44524-44529.

31-"A novel and efficient synthesis of δ-Sultones"

Kurosh Rad-Moghadam,* Saeedeh Toorchi-Roudsari, Mehdi Sheykhan

Synlett **2014**, *25*, 827-830.

32-"Preparation of carbon nanotube-supported α-Fe_2O_3@CuO nanocomposite: a highly efficient and magnetically separable catalyst in cross-coupling of aryl halides with phenols"

Dariush Saberi, Mehdi Sheykhan, Khodabakhsh Niknam, Akbar Heydari*

Catalysis Science and Technology **2013**, *3*, 2025-2031.

33-"Minimisation of E-Factor in the synthesis of *N*-hydroxylamines: the role of silver(I)-based coordination polymers"

Mehdi Sheykhan, Zohreh Rashidi-Ranjbar, Ali Morsali, Akbar Heydari*

Green Chemistry **2012**, *14*, 1971-1974.

34-"A new and green synthesis of formamidines by γ-Fe_2O_3@SiO_2-HBF_4 nanoparticles as a robust and magnetically recoverable catalyst"

Mehdi Sheykhan, Mohsen Mohammadquli, Akbar Heydari*

Journal of Molecular Structure **2012**, *1027*, 156-161.

35-"Superparamagnetic magnesium ferrite nanoparticles: a magnetically reusable and clean heterogeneous catalyst"

Mehdi Sheykhan, Hossein Mohammadnejad, Jafar Akbari, Akbar Heydari*

Tetrahedron Letters **2012**, *53*, 2959-2964.

36-"Nanomagnetically modified sulfuric acid (γ-Fe_2O_3@SiO_2-OSO_3H): an efficient, fast, and reusable green catalyst for the Ugi-like Groebke-Blackburn-Bienaymé three-component reaction under solvent-free conditions"

Sadegh Rostamnia,* Kamran Lamei, Mohsen Mohammadquli, Mehdi Sheykhan, Akbar Heydari

Tetrahedron Letters **2012**, *53*, 5257-5260.

37-"Sulfamic acid heterogenized on hydroxyapatite-encapsulated γ-Fe_2O_3 nanoparticles as a magnetic green interphase catalyst"

Mehdi Sheykhan, Leila Ma'mani, Ali Ebrahimi, Akbar Heydari*

Journal of Molecular Catalysis A: Chemical **2011**, *335*, 253-261.

38-"Nanosilver embedded on hydroxyapatite-encapsulated γ-Fe_2O_3: superparamagnetic catalyst for chemo-selective oxidation of primary amines to *N*-monoalkylated hydroxylamines"

Leila Ma'mani, Mehdi Sheykhan, Akbar Heydari*

Applied Catalysis A: General **2011**, *395*, 34-38.

39-"The synthesis and spectroscopic characterization of nano calcium fluorapatite using *n*-tetrabutylammonium fluoride"

Mehdi Sheykhan, Akbar Heydari,* Leila Ma'mani, Alireza Badiei

Spectrochimica Acta Part A: Molecular and Biomolecular Spectroscopy **2011**, *83*, 379-383.

40-"The Ritter reaction under incredibly green protocol: nano magnetically silica-supported Brønsted acid catalyst"

Leila Ma'mani, Akbar Heydari,* Mehdi Sheykhan

Applied Catalysis A: General **2010**, *384*, 122-127.

41-"Sulfonic acid supported on hydroxyapatite-encapsulated γ-Fe_2O_3 nanocrystallite: magnetically recyclable heterogeneous Bronsted acid in formamides synthesis"

Leila Ma'mani, Mehdi Sheykhan, Akbar Heydari,* Mohammad Faraji, Yadollah Yamini

Applied Catalysis A: General **2010**, *377*, 65-69.

42-"Synthesis, characterization and application of new azo dyes derived from uracil for polyester fibre dyeing"

Mohamad-rezaYazdanbakhsh,* Masoumeh Abbasnia, Mehdi Sheykhan, Leila Ma'mani

Journal of Molecular Structure **2010**, *977*, 266-273.

43-"$H_3PMo_{12}O_{40}$ as a new and reusable catalyst for Mukaiyama and Mannich reactions in heterogeneous media"

Akbar Heydari,* Samad Khaksar, Mehdi Sheykhan, Mahmoud Tajbakhsh

Journal of Molecular Catalysis A: Chemical **2008**, *287*, 5-8.

Projects and Activities

1-"Design, synthesis and application of novel mesoporous silica nanoparticles and nanohydroxyapatite as nanocarier in nanodrug delivery"

Research project, Faculty of Pharmacy, Tehran University, 2010, Proposal No: 89000918

2-"Enhanced oil recovery projects of the country's oil reservoirs using surfactant effect in reducing surface tension"

Research Project, Tarbiat Modares University, 2009

3-"The synthesis of deuterated metformin hydrochloride"

Research Project, Mesbah, Arak, 2016-2018

Conferences

1-"$HClO_4$-Functionalized silica coated magnetic nanoparticle as a green recyclable catalyst for Ritter reaction under mild and solvent free conditions"

3rd Conference on nanostructures, March, 2010, Kish Island-Iran

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2-"Hydroxyapatite coated magnetic nanoparticle as a recyclable catalytic system for synthesis of α-aminophosphonates"

3rd Conference on nanostructures, March 10-12, 2010, Kish Island-Iran

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3-"Nanohydroxyapatite microspheres as a novel biocompatible catalyst for C-P bond formation"

16th Iranian Conference of Organic Chemistry, August, 2009, Zanjan University

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4-"Sulfamic acid functionalized hydroxyapatite-encapsulated γ-Fe_2O_3 nanoparticles: a re-usable heterogeneous superparamagnetic organocatalyst"

17th Iranian Conference of Organic Chemistry, October, 2010, Mazandaran University

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5-"The synthesis of green magnetic multi-layer Fe_3O_4@SiO_2@Al_2O_3: a special catalyst for the synthesis of *4H*-pyranes"

1st Iranian Advanced Nanoscience and Nanotechnology Conference, 2013, Tarbiat Modares University

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6-"Charactrization and kinetic study of Xanthan/montmorillonite hydrogel composite for removal of copper ions"

The 9th International Chemical Engineering Congress & Exhibition (IChEC 2015), 2015, Iranian Chemistry and Chemical engineering community

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7-"Synthesis of palladium(II) complex as an inorganic–organic hybrid magnetic nanocatalyst for the synthesis of diphenylmethyl (DPM) ethers"

2nd Iranian Student Chemistry Conference, 2015, The University of Guilan

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8-"Synthesis of palladium (II) complex as an inorganic-organic hybrid magnetic nanocatalyst for arylation of alkenes (Heck reaction)"

15th Belgian Organic Synthesis Symposium, Antwerp University, 2016

9- "C-N Bond cleavage: a novel access to sulfonamides"

24th Iranian Seminar of Organic Chemistry, Tabriz University, 2016

10-"A novel access to benzo[e]isoindole-1,3-diones via oxidative coupling reactions"

24th Iranian Seminar of Organic Chemistry, Tabriz University, 2016

11-"Cu-catalyzed cyclization of external alkenes on electron-deficient internal alkenes"

25th Iranian Seminar of Organic Chemistry, Iran University of Science and Technology, 2017

12-"Palladium-catalyzed desulfitative arylation of internal olefins with arenesulfonyl chlorides"

25th Iranian Seminar of Organic Chemistry, Iran University of Science and Technology, 2017

13-"New C-N bond construction through the C-N bond cleavage"

25th Iranian Seminar of Organic Chemistry, Iran University of Science and Technology, 2017

14-"The synthesis of a novel mesoporous carbon material"

25th Iranian Seminar of Organic Chemistry, Iran University of Science and Technology, 2017

15-"Arylation of electron-deficient double bonds through metal-catalyzed reactions"

27th Iranian Seminar of Organic Chemistry, Urmia University, 2019

Declaration

Hereby I declare that all the details furnished above are true to my knowledge and belief

Contact List

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  Department of Chemistry
  Terbiat Modares University
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  The University of Guilan
  E-mail: aliakbar@guilan.ac.ir
  Rasht, Iran

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  The University of Guilan
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