**Mahmoud Mazarji**

**Postdoc** at Southern Federal University

**Nationality**: Iranian

**Born:** 17/07/1990

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* [**Google-scholar**](https://scholar.google.com/citations?user=Nq-D_qYAAAAJ&hl=en)**:**
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**Mahmoud Mazarji** is a senior researcher at Southern Federal University, Russia, with H-index of 8. His main research field is exploring nanomaterials’ applicability in a wide variety of remediation processes, including adsorption, photocatalysis, and Fenton reactions. Specifically, based on his track record of the published papers, the target pollutants for the remediation processes are mainly polycyclic aromatic hydrocarbons (PAHs), heavy metals, and organic dyes. Currently, research on the adsorption process with the aim at the description of the mechanism using novel Fe-based metal-organic frameworks is the focus of his study. Additionally, Fenton-like reactions using Fe-based metal-organic framework is his new direction.

He received my Ph.D. diploma in Environmental Engineering from the University of Tehran (Iran). His Ph.D thesis title was “photocatalytic degradation of basic and direct textile dyes using graphene and graphene-ZnO nanocomposite.” Within his Ph.D., he had an opportunity of staying half a year in a bioenergy group at Denmark Technical University (DTU), involving in a project entitled “novel pretreatment technology for lignocellulosic material, based on Advanced Photocatalytic Oxidation Process.” Thereafter, he has gained precious skills and knowledge with regard to using the green photocatalytic process for the production of bio-based materials from nature wastes.

**Professional experience**

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| **Title** | **University** | **From** | **To** |
| Senior researcher | Southern Federal University/Russia | 27/01/2020 | Current |
| Research assistance | University of Tehran | 17/07/2019 | 01/01/2020 |

**Education**

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| **Background** | | **University** | **From** | **To** |
| Ph.D. | Environmental Engineering | University of Tehran/Iran | 01/09/2014 | 16/07/2019 |
| M.Sc. | Environmental Engineering | University of Tehran/Iran | 01/09/2012 | 20/09/2014 |
| B.Sc. | Civil Engineering | Power and Water University of Technology/Iran | 01/09/2008 | 08/09/2012 |

**Publications in peer-reviewed scientific journals (Web of Science)**

**1st-author publications**

1. **Mahmoud Mazarji\*,** Niyaz Mohammad Mahmoodi, Gholamreza Nabi Bidhendi, Tatiana Minkina, Svetlana Sushkova, Saglara Mandzhieva, Tatiana Bauer, Alexander Soldatov. “Visible-Light-Driven Reduced Graphite Oxide as a Metal-Free Catalyst for Degradation of Colored Wastewater.” ***Nanomaterials*** 2022, 12, 374.
   * <https://doi.org/10.3390/nano12030374>
2. **Mahmoud Mazarji\***, Tatiana Minkina, Svetlana Sushkova, Saglara Mandzhieva, Anatoly Barakhov, Andrey Barbashev, Tamara Dudnikova, Iliya Lobzenko, Stefanos Giannakis. “Decrypting the synergistic action of the Fenton process and biochar addition for sustainable remediation of real technogenic soil from PAHs and heavy metals.” ***Environmental Pollution*** 2022, 303, 119096.
   * <https://doi.org/10.1016/j.envpol.2022.119096>
3. **Mahmoud Mazarji\***, Muhammad Tukur Bayero, Tatiana Minkina, Svetlana, Sushkova, Saglara Mandzhieva, Andrey Tereshchenko, Anna Timofeeva, Tatiana, Bauer, Marina Burachevskaya, Rıdvan Kızılkaya, Coskun Gulser, Chetan Keswani. “Realizing United Nations Sustainable Development Goals for Greener Remediation of Heavy Metals-Contaminated Soils by Biochar: Emerging Trends and Future Directions.” ***Sustainability*** 2021, 13(24), 13825.
   * <https://doi.org/10.3390/su132413825>
4. **Mahmoud Mazarji\***, Tatiana Minkina, Svetlana Sushkova, Saglara Mandzhieva, Aleksei Fedorenko, Tatiana Bauer, Alexander Soldatov, Anatoly Barakhov, and Tamara Dudnikova. Biochar-assisted Fenton-like oxidation of benzo[a]pyrene-contaminated soil. ***Environmental Geochemistry and Health****.* 2021.

* <https://doi.org/10.1007/s10653-020-00801-1>

1. **Mahmoud Mazarji\***, Hassan Esmaili, Gholamreza Nabi Bidhendi, Niyaz Mohammad Mahmoodi, Tatiana Minkina, Svetlana Sushkova, Saglara Mandzhieva, Anatoly Barakhov, Hassan Moghtaderi, Amit Bhatnagar. “Green synthesis of reduced graphene oxide-CoFe2O4 nanocomposite as a highly efficient visible-light-driven catalyst in photocatalysis and photo Fenton-like reaction.” ***Materials Science and Engineering: B*.** 2021, 270.

* <https://doi.org/10.1016/j.mseb.2021.115223>

1. **Mahmoud Mazarji\***, Tatiana Minkina, Svetlana Sushkova, Saglara Mandzhieva, Gholamreza Nabi Bidhendi, Anatoly Barakhov, and Amit Bhatnagar. “Effect of nanomaterials on remediation of polycyclic aromatic hydrocarbons-contaminated soils: A review.” ***Journal of Environmental Management.*** 284 (2021): 112023.

* <https://doi.org/10.1016/j.jenvman.2021.112023>

1. **Mahmoud Mazarji\***, Hassan Esmaili, Gholamreza Nabi Bidhendi, Niyaz Mohammad Mahmoodi, Tatiana Minkina, Svetlana Sushkova, Saglara Mandzhieva, Anatoly Barakhov, Hassan Moghtaderi, Amit Bhatnagar. Green synthesis of reduced graphene oxide-CoFe2O4 nanocomposite as a highly efficient visible-light-driven catalyst in photocatalysis and photo Fenton-like reaction. ***Materials Science and Engineering: B*** 270 (2021): 115223.
   * <https://doi.org/10.1016/j.mseb.2021.115223>
2. **Mahmoud Mazarji\***, Tatiana Minkina, Svetlana Sushkova, Saglara Mandzhieva, Gholamreza Nabi Bidhendi, Anatoly Barakhov, Amit Bhatnagar.  
   Effect of nanomaterials on remediation of polycyclic aromatic hydrocarbons-contaminated soils: A review. ***Journal of Environmental Management*** 284 (2021): 112023.
   * <https://doi.org/10.1016/j.jenvman.2021.112023>
3. **Mahmoud Mazarji\***, Tatiana Minkina, Svetlana Sushkova, Saglara Mandzhieva, Aleksei Fedorenko, Tatiana Bauer, Alexander Soldatov, Anatoly Barakhov, Tamara Dudnikova. Biochar-assisted Fenton-like oxidation of benzo [a] pyrene-contaminated soil.” ***Environmental Geochemistry and Health*** (2021): 1-12.
   * <https://doi.org/10.1007/s10653-020-00801->1
4. **Mahmoud Mazarji\***, Tatiana Minkina, Svetlana Sushkova, Elena Antonenko, Saglara Mandzhieva, Tamara Dudnikova. Impact of humic acid on degradation of benzo (a) pyrene polluted Haplic Chernozem triggered by modified Fenton-like process. ***Environmental Research*** (2020).
   * <https://doi.org/10.1016/j.envres.2020.109948>
5. **Mahmoud Mazarji**, Sidhant Kuthial, Merlin Alvarado-Morales, Panagiotis Tsapekos, Irini Angelidaki.Carbon dioxide anion radical as a tool to enhance lignin valorization*.* ***Science of the Total Environment*** (2019).
   * <https://doi.org/10.1016/j.scitotenv.2019.05.102>
6. **Mahmoud Mazarji**, Merlin Alvarado-Morales, Panagiotis Tsapekos, Gholamreza Nabi-Bidhendi, Niyaz Mohammad Mahmoodi, Irini Angelidaki. Graphene based ZnO nanoparticles to depolymerize lignin-rich residues via UV/iodide process. ***Environment International*** (2019).
   * <https://doi.org/10.1016/j.envint.2018.12.062>
7. **Mahmoud Mazarji**, Gholamreza Nabi-Bidhendi, Niyaz Mohammad Mahmoodi. One-pot synthesis of a reduced graphene oxide–ZnO nanorod composite and dye decolorization modeling. ***Journal of the Taiwan Institute of Chemical Engineers*** 80 (2017).
   * <https://doi.org/10.1016/j.jtice.2017.07.038>
8. **Mahmoud Mazarji\***, Behnoush Aminzadeh, Majid Baghdadi, Amit Bhatnagar. Removal of nitrate from aqueous solution using modified granular activated carbon. ***Journal of Molecular Liquids*** 233 (2017).
   * <https://doi.org/10.1016/j.molliq.2017.03.004>

**Co-author publications:**

1. Atousa Khazaie, **Mahmoud Mazarji**, Bijan Samali, Dave Osborne, Tatiana Minkina,Svetlana Sushkova ,Saglara Mandzhieva, Alexander Soldatov. “A Review on Coagulation/Flocculation in Dewatering of Coal Slurry.” ***Water*** 2022, 14, 918.

* <https://doi.org/10.3390/w14060918>

1. Anna M. Medvedeva, Olga A. Biryukova, Alexey V. Kucherenko, Yaroslav I. Ilchenko, Tatiana M. Minkina, Saglara S. Mandzhieva, **Mahmoud Mazarji**, “The effect of resource-saving tillage technologies on the mobility, distribution and migration of trace elements in soil.” ***Environmental Geochemistry and Health****.* (2022).

* <https://doi.org/10.1007/s10653-021-01193-6>

1. Tatiana Minkina, Galina Vasilyeva, Yana Popileshko, Tatiana Bauer, Svetlana Sushkova, Aleksey Fedorenko, Elena Antonenko, David Pinskii, **Mahmoud Mazarji**, and Carla Sofia Santos Ferreira. “Sorption of benzo [a] pyrene by Chernozem and carbonaceous sorbents: comparison of kinetics and interaction mechanisms.” ***Environmental Geochemistry and Health****.* (2021): 1-16.

* <https://doi.org/10.1007/s10653-021-00945-8>

1. Sushkova, Svetlana, Tatiana Minkina, Tamara Dudnikova, Andrey Barbashev, **Mahmoud Mazarji**, Natalia Chernikova, Iliya Lobzenko, Irina Deryabkina, and Ridvan Kizilkaya. “Influence of carbon-containing and mineral sorbents on the toxicity of soil contaminated with benzo [a] pyrene during phytotesting.” ***Environmental geochemistry and health****.* (2021): 1-15.

* <https://doi.org/10.1007/s10653-021-00899-x>

1. Sergey Kolesnikov, Natalia Tsepina, Tatiana Minnikova, Kamil Kazeev, Saglara Mandzhieva, Svetlana Sushkova, Tatiana Minkina, **Mahmoud Mazarji**, Rupesh Kumar Singh, and Vishnu D. Rajput. “Influence of silver nanoparticles on the biological indicators of haplic chernozem.” ***Plants***. 2021, 10.

* <https://doi.org/10.3390/plants10051022>

1. Sergey Kolesnikov, Alena Timoshenko, Tatiana Minnikova, Natalia Tsepina, Kamil Kazeev, Yulia Akimenko, Alexander Zhadobin, Victoria Shuvaeva, Vishnu D. Rajput, Saglara Mandzhieva, Svetlana Sushkova, Tatiana Minkina, Tamara Dudnikova, **Mahmoud Mazarji**, Saud Alamri, Manzer H. Siddiqui and Rupesh Kumar Singh. “Impact of metal-based nanoparticles on cambisol microbial functionality, enzyme activity, and plant growth.” ***Plants*** 10, (2021): 2080.

* <https://doi.org/10.3390/plants10102080>

1. Svetlana Sushkova, Tatiana Minkina, Victor Chaplygin, Dina Nevidomskaya, Vishnu Rajput, Tatiana Bauer, **Mahmoud Mazarji**, Anzhelica Bren, Igor Popov, and Maria Mazanko. “Subcritical water extraction of organic acids from chicken manure.” ***Journal of the Science of Food and Agriculture*** 101, 4 (2021): 1523-1529.

* <https://doi.org/10.1002/jsfa.10768>

1. Anna Medvedeva, Olga Biryukova, Yaroslav Ilchenko, Tatiana Minkina, Alexey Kucherenko, Tatiana Bauer, Saglara Mandzhieva, **Mahmoud Mazarji**. “Nitrogen state of Haplic Chernozem of the European part of Southern Russia in the implementation of resource-saving technologies.” ***Journal of the Science of Food and Agriculture*** 2021, 101, 2312–2318.

* <https://doi.org/10.1002/jsfa.10852>

1. Svetlana Sushkova, Tatiana Minkina, Tamara Dudnikova, Andrey Barbashev, **Mahmoud Mazarji**, Natalia Chernikova, Iliya Lobzenko, Irina Deryabkina, Ridvan Kizilkaya. Influence of carbon-containing and mineral sorbents on the toxicity of soil contaminated with benzo [a] pyrene during phytotesting. ***Environmental Geochemistry and Health*** (2021): 1-15.

* <https://doi.org/10.1007/s10653-021-00899-x>

1. Sergey Kolesnikov, Natalia Tsepina, Tatiana Minnikova, Kamil Kazeev, Saglara Mandzhieva, Svetlana Sushkova, Tatiana Minkina, Mahmoud Mazarji, Rupesh Kumar Singh, Vishnu D Rajput. Influence of Silver Nanoparticles on the Biological Indicators of Haplic Chernozem. ***Plants*** 10.5 (2021): 1022.

* <https://doi.org/10.3390/plants10051022>

1. Tatiana Minkina, Galina Vasilyeva, Yana Popileshko, Tatiana Bauer, Svetlana Sushkova, Aleksey Fedorenko, Elena Antonenko, David Pinskii, **Mahmoud Mazarji**, Carla Sofia Santos Ferreira. Sorption of benzo [a] pyrene by Chernozem and carbonaceous sorbents: comparison of kinetics and interaction mechanisms. ***Environmental Geochemistry and Health*** (2021): 1-16.

* <https://doi.org/10.1007/s10653-021-00945-8>

1. Anna Medvedeva, Olga Biryukova, Yaroslav Ilchenko, Tatiana Minkina, Alexey Kucherenko, Tatiana Bauer, Saglara Mandzhieva, **Mahmoud Mazarji**. Nitrogen state of Haplic Chernozem of the European Part of Southern Russia in implementation of resource-saving technologies. ***Journal of the Science of Food and Agriculture***.

* <https://doi.org/10.1002/jsfa.10852>

1. Svetlana Sushkova, Tatiana Minkina, Victor Chaplygin, Dina Nevidomskaya, Vishnu Rajput, Tatiana Bauer, **Mahmoud Mazarji**, Anzhelica Bren, Igor Popov, Maria Mazanko. Subcritical water extraction of organic acids from chicken manure. ***Journal of the Science of Food and Agriculture***.

* <https://doi.org/10.1002/jsfa.10768>

1. Vishnu Rajput, Tatiana Minkina, **Mahmoud Mazarji**, Sudhir Shende, Svetlana Sushkova, Saglara Mandzhieva, Marina Burachevskaya, Victor Chaplygin, Ajeet Singh, Hanuman Jatav. Accumulation of nanoparticles in the soil-plant systems and their effects on human health. ***Annals of Agricultural Sciences*** (2020).

* <https://doi.org/10.1016/j.aoas.2020.08.001>

1. Linnik, Vitaly G., Tatiana V. Bauer, Tatiana Minkina, Saglara S. Mandzhieva, **Mahmoud Mazarji**. Spatial distribution of heavy metals in soils of the flood plain of the Seversky Donets River (Russia) based on geostatistical methods. ***Environmental Geochemistry and Health*** (2020).

* <https://doi.org/10.1007/s10653-020-00688-y>

1. Niyaz Mohammad Mahmoodi, Behzad Karimi, **Mahmoud Mazarji**, Hassan Moghtaderi*.* Cadmium selenide quantum dot-zinc oxide composite: Synthesis, characterization, dye removal ability with UV irradiation, and antibacterial activity as a safe and high-performance photocatalyst. ***Journal of Photochemistry and Photobiology B: Biology*** (2018).

* <https://doi.org/10.1016/j.jphotobiol.2018.08.023>

1. Panagiotis Tsapekos, Merlin Alvarado-Morales, Davide Boscaro, **Mahmoud Mazarji**, Luigi Sartori, Irini Angelidaki. TiO2–AgCl based nanoparticles for photocatalytic production of phenolic compounds from lignocellulosic residues. ***Energy & Fuels*** (2018).

* <https://doi.org/10.1021/acs.energyfuels.8b00572>

1. Niyaz Mohammad Mahmoodi, Seyyed Mohammad Maroofi, **Mahmoud Mazarji**, Gholamreza Nabi-Bidhendi. Preparation of modified reduced graphene oxide nanosheet with cationic surfactant and its dye adsorption ability from colored wastewater. ***Journal of Surfactants and Detergents*** 20 (2017).

* <https://doi.org/10.1007/s11743-017-1985-1>

1. Majid Baghdadii, **Mahmoud Mazarji**, Mohammad Sabouhi, Abbass Jafari Kang, Aghdas Jafari. Removal of Cationic Surfactants from Aqueous Solutions by Modified Cotton as a Novel High Capacity and Low Cost Adsorbent. ***Journal of Advances in Chemistry***.

* <https://doi.org/10.24297/jac.v9i3.1013>

**Peer-reviewed conference and oral presentation**

1. **Mahmoud Mazarji\*,** Tatiana Minkina. Potential application of metal-organic frameworks in the different remediation technologies**. *International Workshop on Synchrotron and Neutron* Radiation** 2021, Invited oral presentation. The Smart Materials Research Centre, Southern Federal University, Rostov-on-Don, Russia, 6-7 December 2021
   * <https://www.iwsn-conf.com/>
2. Dina Nevidomskaya, Tatiana Minkina, Yuri Fedorov, Yuri Litvinov, Alexei Shcherbakov, Alexei Sherstnev, and **Mahmoud Mazarji**. “Potentially toxic elements distribution in the contaminated bottom sediments by the industrial genesis within Lower Don River system.” ***In Proceedings of the E3S Web of Conferences*** 2021; Vol. 265.
   * <https://doi.org/10.1051/e3sconf/202126502018>
3. Svetlana Sushkova, Tamara Dudnikova, Tatiana Minkina, Elena Antonenko, Andrey Barbashev, Victor Chaplygin, Iliya Lobzenko, **Mahmoud Mazarji**. “Monitoring the content of PAHs in the former sludge dump near the Seversky Donets River.” *In* ***Proceedings of the IOP Conference Series: Earth and Environmental Science*** 2021; Vol. 862.
   * <https://doi.org/10.1088/1755-1315/862/1/012113>
4. Marina Burachevskaya, Saglara Mandzhieva, Tatiana Bauer, Inna Zamulina, Tatiana Minkina, **Mahmoud Mazarji**. “Comparative analysis of Cd fractional composition in soils under anthropogenic and artificial pollution.” ***In Proceedings of the IOP Conference Series: Earth and Environmental Scienc****e* 2021; Vol. 862.
   * <https://doi.org/10.1088/1755-1315/862/1/012019>
5. Tamara Dudnikova, Tatiana Minkina, Galina Vasilyeva, Tatiana Bauer, Anatoly Barakhov, Svetlana Sushkova, David Pinskii, **Mahmoud Mazarji**, Carla Ferreira. Comparative sorption of benzo [a] pyrene by soil and carbonaceous adsorbents. In ***EGU21****.* EGU21-15977.
6. Dina Nevidomskaya, Tatiana Minkina, Yuri Fedorov, Yuri Litvinov, Alexei Shcherbakov, Alexei Sherstnev, **Mahmoud Mazarji**. Potentially toxic elements distribution in the contaminated bottom sediments by the industrial genesis within Lower Don river system. ***In E3S Web of Conferences***, vol. 265, p. 02018. APEEM 2021.
7. Inna Zamulina, Marina Burachevskaya, Saglara Mandzhieva, Tatiana Bauer, Anatolii Barakhov, **Mahmoud Mazarji**. Metodological aspects in the studying of soil particle size distribution under contamination and after reclamation. ***In E3S Web of Conferences***, vol. 169, p. 01025. EDP Sciences, 2020.
8. **Mahmoud Mazarji**, Merlin Alvarado-Morales, Panagiotis Tsapekos, Gholamreza Nabi-Bidhendi, Niyaz Mohammad Mahmoodi, Irini Angelidaki. Impact of graphene on ZnO assisted photocatalysis for degradation of lignin rich substrates by UV/iodide process.*Biogas Science 2018****, International Conference on Anaerobic Digestion***. Sep 17-19, 2018. Lingotto Conference center, Torino, Italy.

**Prizes and Awards and Funding**

* A member of MegaProject entitled “New Technologies for Creation of Elements and Systems of Experimental Stations of Synchrotron Radiation Sources and neutrons”, Ministry of Science and Higher Education of the Russian Federation-agreement No. 075-15-2021-1363.
* Awarded prestigious status “Highly Qualified Specialist” by Southern Federal University and the Russian Ministry of Internal Affairs.
* Awarded external stay scholarship at Denmark Technical University (DTU) from Iran’s Ministry of Science, Research and Technology, total amount 7,800 €.
* Ranked 2nd in the nationwide entrance exam of Iranian Universities, highly competitive among 200 participants for Ph.D. position in Environmental Engineering, 01/03/2014
* Graduated with rank 1st among 62 B.Sc. Students in Civil Engineering, Power and Water University of Technology, 08/09/2012.

**Supervising**

* Master thesis collaboration entitled “Advanced oxidation of lignocellulose for phenolics and biogas production” as a co-supervisor. Student name: Sidhant Kuthial, Denmark Technical University, 01/09/2019.
* Supervision of EmiSS Master Degree Programm in Soil Science – Muhammad Tukur Bayero: preparation of Master Thesis: Biochar-based nanocomposites for remediation of soil and water contaminated with heavy metals, advising, preparation of review article, preparation of presentation on the Symposium of Erasmus program, Grant No.: 610528-EPP-1-2019-1-TR-EPPKA1-JMD-MOB
* Supervision of 2nd-year Bachelor student of the Department of Soil Science and Land Resources Assessment – Anna Timofeeva: preparation of project: Metal-organic framework - sunflower husk biochar composite preparation, characterization, and soil application, advising, preparation of abstracts to conferences.