

Dr. Bijan Taheri

(Associate Professor of Mineral Processing)

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Personal Details:

Date of Birth: 21-March-1981

Nationality: Iranian

Marital Status: Married

Languages: Persian, Turkish, English

Professional Summary:

Associate Professor of Mineral Processing Engineering, University of Kashan, Iran.

Work Experiences:

- Faculty Member, Department of Mining Engineering, University of Kashan, Iran (2014–Present).
- Head of the Mining Engineering Department, University of Kashan (2017–2021).
- Member of the Higher Education Strategic Planning Working Group, Ministry of Science, Research and Technology (MSRT), Iran, in Mining Engineering (2025).
- Researcher and Industrial Consultant in Mining and Metallurgical Industries:
 - Sarcheshmeh Copper Complex.
 - Esmaloon Iron Ore Complex.
 - Geological Survey and Mineral Exploration Organization.
 - Refractory Materials Company (2020-Present).

Education:

Ph.D. of Mineral Processing Engineering (Sep 2009-Aug 2013)

Tarbiat Modares University, Tehran, IRAN

Thesis Title:

Controlled potential flotation of copper sulphide minerals using sulphur-bearing reagents

M.Sc. of Mineral Processing Engineering (Sep 2006-Jan 2009)

Tarbiat Modares University, Tehran, IRAN

Thesis Title:

Investigation of suitable alternatives for sodium sulfide to be used in molybdenum enrichment plant of Sarcheshmeh Copper Complex

B.Sc. of Mining Engineering (*Sep 2002-Aug 2006*)

Yazd University, Yazd, IRAN

Thesis Title:

Statistical modeling of western wall of Choqart Mine

Honors and Awards:

- Selected as Outstanding Teaching Faculty of the Faculty of Engineering, 2015
- Ranked 2nd in the Ph.D. Entrance Examination, Tarbiat Modares University, 2009
- Ranked 2nd among graduates of the Mineral Processing Ph.D. program, Tarbiat Modares University, 2013

Teaching Experiences:

- Hydrometallurgy (Advanced and Applied Hydrometallurgy; Leaching, Solution Purification, Concentration, and Precipitation Processes).
- Solution Chemistry, Thermodynamics, and Electrochemistry in Mineral Processing and Hydrometallurgical Systems.
- Flotation, Surface Chemistry, and Physicochemical Phenomena in Mineral Processing.
- Mineral Processing Plant Design and Chemical Process Engineering.
- Fluid Mechanics and Transport Phenomena in Mining and Mineral Processing Engineering.
- Analytical Methods, Instrumental Analysis, and Characterization Techniques for Minerals.
- Statistics and Numerical Methods for Mining Engineering Applications.

Research Interests:

- Chemical and Physicochemical Processes in Mineral Processing (Hydrometallurgy and Froth Flotation).
- Surface Chemistry and Adsorption Phenomena in Flotation.
- Solution Chemistry and Reaction Mechanisms in Hydrometallurgy.
- Computational Chemistry and Molecular Modeling using Density Functional Theory (DFT).
- Design, Optimization, and Scale-up of Mineral Processing Circuits and Chemical Process Systems.
- Recovery of Critical and Strategic Metals, Rare Earth Elements, and Valuable Materials from Primary and Secondary Resources.

Research Experiences:

- Surface Chemistry, Flotation Science, and Computational Modeling of Mineral–Reagent Interactions Using Density Functional Theory (DFT), Molecular Simulation, and Reagent Design.
- Development and Optimization of Flotation Processes for Sulfide and Oxide Ores, Including Cu–Mo Separation, Copper, Lead–Zinc, Iron Ores, Coal, Carbonaceous Gold Tailings, and Polymer Recycling.
- Electrochemical and Physicochemical Control of Mineral Processing Systems, Including Potential-Controlled Flotation, Desulfurization of Iron Ores, and Reagent Scheme Optimization.
- Hydrometallurgical Extraction of Critical and Strategic Metals, Including Lithium, Magnesium, Rare Earth Elements (Rees), Copper, and Zinc From Primary and Secondary Resources.
- Leaching, Solution Purification, Impurity Removal, and Chemical Precipitation Processes for Metal Recovery and Fertilizer Production.
- Environmental Applications in Mining and Metallurgy, Including Treatment of Mining Effluents, Heavy Metal Adsorption, Cyanide Destruction, and Water Quality Management in Flotation and Leaching Operations.

Industrial Activities:

Industry-Funded Projects:

- International Research Project on the Development of a Novel UV-Based Photodegradation Process for Efficient Copper Removal from Gold Cyanide Leach Solutions.
Center for International Scientific Studies and Cooperation, Ministry of Science, Research and Technology, Iran (Ongoing).
- Recovery of Titanium from Tailings of the Iron Ore Processing Plant.
Esmaloon Iron Ore Complex (Ongoing).
- Investigation of Recovery Losses in the Copper Concentrator Flotation Circuit through Optimization of Reagent Schemes Based on Feed Mineralogical Characteristics.
Sarcheshmeh Copper Complex Kerman, Iran (Ongoing)
- Research and Investigation for Pulp Chemistry Control of the Flotation Circuit in the Sarcheshmeh Copper Complex Enrichment Plant Through Monitoring and optimization of Reagent Schemes.
Sarcheshmeh Copper Complex Kerman, Iran (2025)
- Iron Removal from Fireclay by Leaching Using Organic Acids.
Esteghlal Refractory Soil Production Company, Abadeh, Fars, Iran (2020-2021)
- Feasibility Study of an Iron Ore Processing from Tange Zagh Mine in Iran.
Omran Moomun CHabahar Co. (OMCH), Bandar Abbas, Hormozgan, Iran (2018-2019)
- Controlled Potential Flotation of Copper Sulfide Minerals (PhD Thesis).
Sarcheshmeh Copper Complex, Kerman, Iran (2010-2012)
- Alternative Depressants for Sodium Sulfide in Mo Enrichment Plant (MSc Thesis).
Sarcheshmeh Copper Complex, Kerman, Iran (2007-2008)
- Feasibility Study of Insulating Glass Production.
Academic Center for Education, Culture, and Research (ACECR), Tehran, Iran (2006-2007)

Industry-Funded Student Theses (as Supervisor):

- Investigation of Sulfidization–Flotation Technology to Optimize the Recovery of Oxide–Sulfide Copper Minerals.
Sponsored by Sarcheshmeh Copper Complex, Kerman, Iran.
- Optimization of Flotation Reagent Schemes for Active Pyrite-Bearing Materials from Sarcheshmeh Copper Mine.
Sponsored by Sarcheshmeh Copper Complex, Kerman, Iran.
- Optimization of Coal Flotation Performance in a Column Flotation Cell at the Tabas Coal Preparation Plant.
Sponsored by Tabas Parvadeh Coal Company (TPCCO), Yazd, Iran (2020–2021).
- Performance Evaluation and Process Optimization of the Tailings Thickener in a Hematite Processing Plant.
Sponsored by Golgohar Mining and Industrial Company, Kerman, Iran (2018–2019).
- Feasibility Study of Heavy Metal Removal Using Construction Waste as a Low-Cost Adsorbent.
Sponsored by Development of Environment Company, Isfahan, Iran (2017–2018).
- Evaluation of Jarosite Formation Control Strategies to Enhance Copper Recovery during Chalcopyrite Concentrate Bioleaching.
Sponsored by Sarcheshmeh Copper Complex, Kerman, Iran (2017–2018).

- Metallurgical Assessment and Circuit Optimization of the Second Concentrator Plant through Reallocation of Rougher Concentrates.
Sponsored by Sarcheshmeh Copper Complex, Kerman, Iran (2015–2016).
- Optimization of Grinding and Magnetic Separation Circuits Using USIM PAC Simulation at the Golgozar Iron Ore Concentrator.
Sponsored by Golgozar Mining and Industrial Company, Kerman, Iran (2015–2016).
- Investigation of Water Quality Effects on the Leaching Behavior of Low-Grade Copper Sulfide Ores.
Sponsored by Sarcheshmeh Copper Complex, Kerman, Iran (2015–2016)

Publications:

Books:

Bijan Taheri, Farideh Rezaei, Classical and Instrumental Methods and Principles of Mineral Analysis (in Persian), *Kashan university press*, 2019.

Bijan Taheri, Ramin Bani Hashemi, translation of “Separation Hydrometallurgy of Rare Earth Elements” written by Jack Zhang, Baodong Zhao, and Bryan Schreiner, *Kashan university press*, 2017.

Journals Articles:

Taheri, B., & Larachi, F. (2025). Mineral-Based Magnesium Extraction Technologies: Current and Future Practices. *Processes*, 13(9), 2945.

Heshami, Monireh, and **Bijan Taheri**. "An experimental study on the adsorption behavior of gold glycinate complex on graphene oxide" *Hydrometallurgy*, 224, 106229.

Bijan Taheri. “Iron removal from kaolin by oxalic acid using a novel pre-agitating and high-pressure washing technique” *Clay Minerals - Journal of Fine Particle Science*, (2023), 58, 224-233.

Heshami, Monireh, Zahra Tavangar, and **Bijan Taheri**. "Adsorption of gold and silver glycinate on graphene and graphene oxide surface: A DFT study." *Applied Surface Science* 619 (2023): 156676.

Bijan Taheri, Farideh Rezaei, Nasrin Shadjou, Ahmad Hassanzadeh; A molecular analysis on nitrile-based collectors and their application to chalcopyrite flotation; *Minerals Engineering*, 186 (2022) 107763.

Bijan Taheri, Mohammad Hossein Darvishnejad, Farideh Rezaei; Depression Effect of Thioglycolic Acid (TGA) on Flotation Separation of Molybdenite from Copper Sulfides with different Collectors: An Experimental and Theoretical Study; *ChemistrySelect* 7 (11), (2022) e202200026.

Ehsan Zareian, **Bijan Taheri**, Marjan Azghadi, Feasibility Study of Alternative Water Sources for Well Water in Heap Leaching Process, *World of Mining - Surface and Underground*, (2020) 72 (3), 2-7.

Banihashemi, Seyed Ramin, **Bijan Taheri**, Seyed Mohammad Razavian, and Faraz Soltani. "Nitrophosphate Solution Purification by Calcium Precipitation as Gypsum, *International Journal of Minerals, Metallurgy, and Materials (JOM)*, (2020), 73: 27-31.

Reza Kohan, **Bijan Taheri**, Monireh Heshami, Behrouz Maghsodi, Feasibility Study on the Modification and Improvement of Flotation Circuits at Enrichment Plant 2 of the Sarcheshmeh Copper Complex, *Mining, Metallurgy & Exploration* (2020) 37 (2), 555-566.

Seyed Ramin Banihashemi, **Bijan Taheri**, Seyed Mohammad Razavian, Faraz Soltani, Selective nitric acid leaching of rare earth elements from calcium and phosphate in a fluorapatite concentrate, *International Journal of Minerals, Metallurgy, and Materials (JOM)*, (2019) 71 (12), 4578-4587.

Bijan Taheri, Majid Lotfalian; Effect of Ultrasonic Pre-treatment and Aeration on Flotation Separation of Chalcopyrite from Pyrite, *Iranian Journal of Chemistry and Chemical Engineering (Iran. J. Chem. Chem. Eng.)*, (2018) 37 (5), pp 199-207.

Hossein Faraji, **Bijan Taheri**, Aliakbar Abdollahzadeh, Desulfurization of the Gole Gohar iron ore by controlling the electrochemical conditions of pulp (in Persian), *Iranian Journal of Mining Engineering (IRJME)*, Vol. 4, No. 36, 2018, pp. 1-15.

Bijan Taheri, Mahmoud Abdollahy, Sied Ziaedin Shafaei Tonkaboni, Soheyla Javadian, Investigating the Flotation Behaviour of Chalcopyrite in the Presence of Sodium Sulphide under Controlled Potential, *Iranian Journal of Mining Engineering (IRJME)*, Vol. 9, No. 24, 2014, pp. 1-15.

Bijan Taheri, Mahmoud Abdollahy, Sied Ziaedin Shafaei Tonkaboni, Soheyla Javadian, Flotation Separation of Chalcocite from Pyrite Using Controlled Redox Potential (in Persian), *Journal of Separation Science and Engineering*, Vol. 5, No. 1, 2013, pp. 35-47.

Abdollahy, M., **Taheri, B.**, Khodadadi, A., Zeidabadi, S., Eslami, A., Separation of Molybdenite from Copper Sulfide Concentrates Using Thioglycolic Acid as a Depressant (in Persian), *Iranian Journal of Mining Engineering (IRJME)*, Vol. 6, No. 12, 2011, pp. 31-40.

Bijan Taheri, Mahmoud Abdollahy, Sied Ziaedin Shafaei Tonkaboni, Soheyla Javadian, and Mohammadreza Yarahmadi, Dual Effects of Sodium Sulphide on the Flotation Behavior of Chalcopyrite, I: Effect of Pulp Potential, *International Journal of Minerals, Metallurgy, and Materials*, Volume 21, Number 5, May 2014, pp. 415-422.

Conferences Articles:

Taheri, B. A comprehensive review of magnesium recovery from desalination brines with emphasis on controlled chemical precipitation methods. National Conference on Desalination and Freshwater Production, University of Hormozgan, Iran (5-6-Jan, 2025).

Taheri, B. A review of hydrometallurgical extraction of magnesium from serpentine resources. 12th Iranian Mining Engineering Conference, University of Kashan, Iran (20-21 February 2024).

Naderi Nokabadi, M., **Taheri, B.**; Flotation behaviors of chalcopyrite and pyrite in the presence of thiourea-based collectors, 12th Iranian Mining Engineering Conference, Kashan, (20-21 February 2024).

Taheri, B.; Hydrometallurgical extraction of magnesium from serpentine sources: A review, 12th Iranian Mining Engineering Conference, Kashan, (20-21 February 2024).

M.A. Rostamiraja, **B. Taheri**, S.M. Razavian, M. Ghorbannezhad, Optimization of the 4th Gole-e-Gohar separation circuit based on the sensitivity of magnetic separation circuit to particles size, 8th Iranian Mining Engineering Conference, February 2020, Birjand, Iran.

Rohollah Jahangiri, **Bijan Taheri**, Shahamat rostami, Investigation of the parameters affecting the sedimentation of new feed of tail thickener at Gol-e-Gohar Hematite Plant (in Persian); *second Mining and Green Mining Industries Congress, December 2019, Zanzan, Iran.*

Fereshteh Khani Garmsiri, Ali Akbar Abdollahzadeh, **Bijan Taheri**, Monireh Heshami; Investigation of effective parameters influence on hematite and silica flotation by hallimond tube (in Persian); *5th International Mine and Mining Industries Congress and 7th Iranian Mining Engineering Conference, November 2018, Iran-Tehran.*

Ramin Banihashemi, **Bijan Taheri**, Seyed Mohammad Razavian, Faraz Soltani; Selective leaching of rare earth elements from P and Ca of Esfordi phosphate concentrate in nitrate media (in Persian); *The 36th National and the 3rd International Geological Congress of Iran, 25-27 February 2018., Iran-Tehran.*

Reza Kohan, **Bijan Taheri**, Behrouz Maghsodi; The feasibility study of metallurgical improvement of second enrichment plant of Sarcheshmeh copper complex by transportation of first unit enriched rougher concentrates to culomn cell feed (in Persian); *4th International Mine & Mining Industries Congress & 6th Iranian Mining Engineering Conferences, (November 2016), Iran-Tehran.*

Bijan Taheri, Mahmoud Abdollahi; Electrochemical Behavior of Collectorless Flotation of Chalcopryite in Alkaline Medium (in Persian); *4th International Mine & Mining Industries Congress & 6th Iranian Mining Engineering Conferences, (November 2016), Iran-Tehran.*

Ehsan Zareian, **Bijan Taheri**, Majid Lotfalian, ali riahi; Effect of water sources and their chemical compounds on copper dissolution in bottle roll tests (in Persian); *4th International Mine & Mining Industries Congress & 6th Iranian Mining Engineering Conferences, (November 2016), Iran-Tehran.*

Hossein Faraji, **Bijan Taheri**, Aliakbar Abdollahzadeh, Investigating the Optimum Electrochemical Conditions for Pyrite Removal from Iron Ore Using Sulfhydryl Collectors (in Persian), *3rd International Conference of Iron Ore, (November 2015), Iran-Tehran.*

Bijan Taheri, Mahmoud Abdollahy, Investigating the Electrochemical Behavior of Chalcocite Using Cyclic Voltammetry (in Persian), *33rd National Geoscience Symposium, (February 2015), Iran-Tehran.*

Bijan Taheri, Mahmoud Abdollahy, Sied Ziaedin Shafaei Tonkaboni, Soheyla Javadian, and Mohammadreza Yarahmadi, Investigating the Effect of Pulp Potential on the Flotation Behavior of Chalcopryite in the Presence of Sodium Hydrosulphide (in Persian), *5th Iranian Conference of mining Engineering, (October 2014), Iran-Tehran.*

Abdollahy, M., **Taheri, B.**, Khodadadi, A., Zeidabadi, S., The Possibility of Using Thioglycolic acid instead of sodium sulfide in the Molybdenum Enrichment Plant of Sarcheshmeh Copper Complex, *6th International Congress on Chemical Engineering, 2009, kish, Iran.*

Other Experiences:

- Director in charge of establishing a laboratory for chemical processes of mineral processing at University of Kashan, Iran (2018-2019).
- Holding courses and workshops for mining and mineral processing technicians.
 - Flotation Chemistry in Practice.
 - Applied hydrometallurgy.

- Mass Balance and Metallurgical Calculations in Mineral Processing Systems.
- Collaboration with the scientific centers as a reviewer:
 - Iranian Research Organization for Science and Technology (IROST)
 - Iranian Patent and Innovation Organization
 - Iranian Department of Environment (National Environmental Fund)
 - High Technology Development Fund
- Collaboration with the scientific research journals as a reviewer:
 - Minerals Engineering
 - Iranian Journal of Chemistry and Chemical Engineering (IJCCE)
 - Physicochemical Problems of Mineral Processing (PPMP)
 - Journal of Mining and Environment (JME)
 - Journal of Analytical and Numerical Methods in Mining Engineering (ANM)
 - Mineral Processing and Extractive Metallurgy Review
 - Iranian Journal of Earth Science
 - Journal of Mineral Resources Engineering (JMRE)
- Collaboration with scientific committee of the conferences:
 - The 12th Mining Engineering Conference (2024)
 - The 3rd Iranian Mining Technology Conference (2022)
 - The 1st National Conference on Modeling in Mining Engineering (2018)
 - The 5th Mining Engineering Conference (2014)
- Collaboration with National Organization of Educational and professional Testing:
 - National University Entrance Examinations.
 - Knowledge-based companies Recruitment Examinations.

Hobbies:

- Literature (Reading and Writing)
 - Sport (Hiking, Swimming, Cycling, Volleyball, Ping-Pong)
 - Cooking
 - Traveling and sightseeing
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References:

Dr. Mohammad Raouf Hosseini

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