Amir Mabudi

Associate Professor

College: Faculty of Mining Engineering

Education

Degree	Graduated in	Major	University
BSc	2006	Mining Engineering	Urmia University
MSc	2009	Mineral Processing	University of Tehran
Specialized Courses	2017	Research Scholar PhD Student at Chemical and Materials Engineering Department, University of Nevada	University of Nevada, Reno
Ph.D	2020	Mineral Processing	University of Tehran

Employment Information

Faculty/Department	Position/Rank	Employment Type	Cooperation Type	Grade
Sahand University of Technology	Academic Staff	Tenure Track	Full Time	12

Work Experience

- Project consultant in the industrial-scale processing studies for the production of ultra-clear glass from Shahindezh silica mine samples, 2020, AZAR Glass Company, Tabriz, Iran.

- Supervisor and Consultant for construction, and production iron concentrate and pelletizing projects, at the BABA ALI iron mine, and SHAHRAK iron mine, 2013-2015, Sabanour Iron Complex, Tehran, Iran.

- Project consultant in the lab-scale studies of processing and extraction of vanadium from Titan-Magnetite tailing of Kahnooj Titan mine, 2009-2010, IranItok Company, Tehran, Iran.

- Project consultant in lab scale studies of processing and concentration of sedimentary coppers ores, Sorkhe copper mine used as a Case study, 2009-2010, IMARCO Group, Iran.

- Operating condition optimizing of magnetic separator, “M.Sc. Thesis”, 2007-2008.

- Optimizing of feed blending in iron ore processing plant to decreasing element such as P, S, and SiO_2 , “M.Sc. Thesis”, 2007-2008

- Determining of floatability behavior of harmful elements in Iron concentration, “M.Sc. & B.Sc. Thesis”

- Recycling of waste paper by froth flotation, 2007

Awards

- Rank one student among all Ph.D. students graduated at School of Mining Engineering, College of Engineering, University of Tehran 2018
- Winner of a US$ 6,000 scholarship from University of Tehran for sabbatical leave at the University of Nevada, Reno, NV, USA, 2017
- Rank two at nationwide exam university entrance of Iran in mineral processing in PhD, 2013
- Rank one student among all M.Sc. students graduated at School of Mining Engineering, College of Engineering, University of Tehran 2009
- Member of Tehran University Office of Talent, from 2009
- Member of futures research center, Tehran University of New Ideas center, from 2009
- Rank seven at nationwide exam university entrance of Iran in mineral processing in M.Sc., 2007

Subjects Taught

- New equipment and methods in mineral processing
- Surface phenomena in mineral processing
- Simulation, modeling and control methods in mineral processing
- Processing of non-metallic minerals

- Fluid mechanics
- Flotation
- Crushing and granulation of minerals
- Physical concentration methods in mineral processing
- Processing of metallic minerals
- Processing of industrial minerals
- Coal processing

Course Topics

- Application of nanomaterials as chemical agents in mineral concentration
- Molecular simulation (molecular dynamics and quantum mechanics) of concentration and dewatering environments
- Intelligent control systems in mineral processing units
- Surface phenomena in mineral processing processes

Papers in Conferences

1. Zamzami, Mabudi, Ebrahimi،Investigating and optimizing the performance of dust filters in reducing environmental pollution،The Third Iranian Mining and Green Mineral Industries Conference،۲۰۲۳،زنجان.
2. Hashemi, Noparst, Mabudi،A molecular dynamics study on the adsorption of NaOL on the haematite ۰۰۱ surface and its effect on the wettability of the surface،The Second national conference on the application of experimental and numerical methods in the chemical and mining industries،۲۰۲۳،کرمان.
3. Mabudi, Fathi, Nezhadshahmohammad،Study of sediments and brines on the shores of Lake Urmia from the perspective of economic efficiency and reducing destructive environmental impacts،۷th National Conference on Mining Engineering and Earth Sciences S،۲۰۲۲.
4. Mabudi،Effect of adsorped polystyerene nanoparticles on the wettability properties of quartz surface a molecular dynamics study،The first national conference on the application of experimental and numerical methods in the chemical and mining industries،۲۰۲۱،کرمان.
5. Mabudi،Design of a predictive algorithm based on neural network to determine the working index of a mineral bond by its mineralogical composition،The first national conference on the application of experimental and numerical methods in the chemical and mining industries،۲۰۲۱،کرمان.
6. Esmaeli, Chehrehgani, Fathi, Mabudi, Danesh،Predicting the recovery of copper concentrate of the phase ۱ concentration plant of Sungon copper complex using intelligent artificial neural network modeling،۱۱th Iranian Mining Engineering Conference and ۷th International Mine & Mining Industries Congress،۲۰۲۱.
7. Alsi, Shafaei, Noaparst, Mabudi،Effect of Mg and Mn ions on chadormaloo Flotation،۳th Iranian Mining Engineering Conference،۲۰۱۰.
8. Zamzami, Mabudi, Karami،The importance of fine dust, dirt, and their removal from factory exhaust gases using wet scrubbers،The Fourth National Conference on Iranian Mining Technologies،۱۴۰۴/۰۲،یزد.
9. Mabudi ,Enhancing Flotation Performance of Zinc-Oxide Minerals Using a Mixed Collector System ,IMPRS2025 ,Tehran ,2025/05.
10. Mabudi ,Optimization of the Hematite Concentration Stage at the Chadormalu Complex: A Case Study on High-Gradient Magnetic Separation and Flotation ,4th International Conference & 8th National Conference on Materials, Metallurgy, Mining ,Ahvaz ,2025.
11. Mabudi ,Investigating the Potential for Producing Ultrapure Silica: A Case Study on Bonab Silica Samples ,4th International Conference & 8th National Conference on Materials, Metallurgy, Mining ,Ahvaz ,2025.

12. Mabudi ,Leaching of Malecite and Azurite from Sedimentary Copper Deposits A Case Study of Sorkheh Copper Mine ,13th Iranian Mining Engineering Conference 8th International Mine & Mining Industries Congress ,Tehran ,2025.
13. Mabudi ,Designing a Predictive Algorithm Based on Fuzzy Logic to Determine the Bond Work Index of Iron Ore from its Mineralogical Composition ,13th Iranian Mining Engineering Conference 8th International Mine & Mining Industries Congress ,Tehran ,2025.
14. Hashemi, Noparst, Mabudi ,Investigating the collector adsorption and its effects on the wettability of quartz surface using molecular dynamics ,12th Iranian Mining Engineering Conference ,Kashan ,2024.
15. Hashemi, Noparst, Mabudi ,A molecular dynamics study on coating of hydrophilic quartz (001) surface with hydrophobic graphene nanoparticles and its effect on the wettability behavior of quartz surface ,3th International Conference on Mechanic, Metallurgy, and Miningg ,2022.
16. Kharazian, Mabudi, Atyabi, Dinarvand ,Investigation of the Interaction of Liposome and Gemcitabine Using Molecular Dynamic Simulation ,2nd International Conference on Nanotechnology and Nanoscience ,Tehran ,2021.
17. Mabudi, Mozaffari, Asli, Hajisolimani ,Deinking of Wastepaer using Froth Flotation ,BLACKSEA INTERNATIONAL ENVIRONMENTAL SYMPOSIUM ,GIRESUN–TURKEY ,2008.

Papers in Journals

1. Mabudi, Zamzami, Pashayi،Modeling the factors affecting compressive strength and dry density of block (AAC) using RSM method،Journal of Modeling in Engineering،۲۰۲۵.
2. Hashemi, Noparast, Mabudi،Comparison of NaOL Adsorption on the Hematite ۰۰۱ Surface with Water Molecules Adsorption on the Hydrophilic Hematite Surface Using Molecular Dynamics Simulation،Journal of Mineral Resources Engineering،۲۰۲۴.
3. Fathi, Mabudi, Nezhadshahmohammad،A molecular dynamics study on the wettability property of modified hydrophilic quartz (۰۰۱) surface with hydrophobic nanoparticles،Journal of Modeling in Engineering،۲۰۲۳.
4. Mabudi, Naseri, Zamzami, Khosravi,Enhanced wastewater treatment using metal-based nanoparticles: A comprehensive study,International Journal of Mining and Geo-Engineering,2025.
5. Amir Mabudi,Optimized Flotation of Zinc Oxide Ores: Synergistic Effects of Mixed Collectors and Desliming,Journal of Environment and Sustainable Mining,Vol. 4,pp. 1-15,2025.
6. Mabudi, Ahmadi,Functionalized activated carbon for fluoride removal and purification of zinc enriched leach solution: An experimental and MD study,Molecular liquids,2025.
7. Mabudi,Synergistic Effects of PAX and Armac C on the Flotation Behavior of Smithsonite and Hemimorphite,International Journal of Mining and Geo-Engineering,2025.
8. Mabudi, Ahmadi,Challenging the Positive Role of Calcium Ions in Pyrite Flocculation: Evidence of Adverse Effects from Acrylamide Flocculant Adsorption Studies and Molecular Simulations,Arabian Journal for Science and Engineering,2025.
9. Mabudi, Ahmadi,Mechanistic Interpretation of Thioglycolic Acid as a Depressant in the Differential Flotation of Molybdenite from Chalcopyrite,MATERIALS CHEMISTRY AND PHYSICS,2025.
10. Ghaffari, Mabudi, Riyahi,Molecular insights into the role of external magnetic field on asphaltene deposition: Implications for green approaches to asphaltene management,Feul,2025.
11. Javedanitabar. Gharabaghi, Abdollahi, Mabudi, Ojaghi,Mixed anionic/cationic collectors for pyrite flotation: An experimental and theoretical study,Mineral Processing and Extractive Metallurgy Review,2025.
12. Hashemi, Noparast, Mabudi,Dodecyl Amine Adsorption on the TiO2 (0 0 1) Surface and its Effect on the Surface Wettability: A molecular Dynamics Study,Molecular liquids,2025.
13. kharazian, Ahmad, Mabudi,A molecular dynamics study on the binding of gemcitabine to human serum albumin,Molecular liquids,2023.

14. Rezaee, Shafaei, Abdollahi, Mohammadnejad, Mabudi,An experimental and DFT study on using the thiosulfate–glycine complex as an alternative agent of cyanide in the gold leaching process,Journal of Sustainable Metallurgy,2023.
15. Gowdini, Ahmad, Mabudi, Hadipour, Kharazian,A molecular dynamics study on the thermal properties of carbon-based gold nanoparticles,Journal of Molecular Modeling,2020.
16. Mabudi, Noparast, Gharabaghi, Vasquez,A molecular dynamics study on the wettability of graphene-based silicon dioxide (glass) surface,Colloids and Surfaces A: Physicochemical and Engineering Aspects,2019.
17. Mabudi, Noparast, Gharabaghi, Vasquez,Polystyrene nanoparticles as a flotation collector: A molecular dynamics study,Molecular liquids,2019.

Thesis

1. Optimizing the hydrometallurgical process of ultrapure silica production
2. Dissolution of refractory Zarshouran gold in cyanide under atmospheric conditions
3. Assessment of the zeta potential of oxide minerals in a flotation context utilizing molecular dynamics
4. Investigating the Effect of tHydrophobic Copper Nanoparticles as a Collector of Pyrite in Froth Flotation
5. An investigation on gold resources and its processing methods
6. Rare earth elements, economical minerals, and common methods of their processing
7. Investigation of external magnetic field effect on the oil detachment and wettability behavior of silicate reservoir rock using molecular dynamics simulation
8. A DEM-based designing of the liner and lifter for ball mills using LIGHHHTS open source code
9. A review study on the simulation of flotation environment with molecular dynamics
10. A comprehensive review of the various common methods used in wastewater treatment plants
11. A comprehensive review on the harmful effect of clays on the efficiency of copper minerals' floatation
12. Use of an intelligent algorithm for predicting and controlling the quality of copper output concentrate of Songun Copper Processing Plant from the combined input feed of the concentrate plant
13. Investigation of mixing and homogenization pattern of minerals in stock pile of Sungun copper complex concentration unit and its complication detection
14. Use of Mix Collector in Halimond flotation of Pyrite
15. Silver recovery from spent catalysts of petrochemical industries using hydrometallurgical methods
16. A molecular scale study on the effect of calcium ion on the mechanism of pyrite flocculation
17. Feasibility study of fluorine removal by adsorption on activated carbon and analysis of its results using molecular simulation
18. Feasibility study of copper reduction from the final molybdenum concentrate of the flotation circuit of the Songun Copper Complex
19. An overview on the available tails in zinc ores and their effects on the efficiency of zinc electro-winning operations
20. Investigation of different common methods in neutralizing drainage structures of processing plants
21. An investigation on common simulation and modeling methods in mineral processing