

Asghar Azizi

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PERSONAL INFORMATION

Date of Birth: December 4, 1981.

Place of Birth: Arate, Ghaemshahr, Mazandaran, Iran.

Nationality: Iranian
Marital Status: Married

EDUCATION BACKGROUND

Ph.D., Mineral Processing Engineering, Shahrood University of Technology, Shahrood, Iran, (September 19) 2013.

Thesis title: "Electrochemical investigation of effective factors on grinding environment of copper sulfide minerals and modeling to control medium corrosion rate"

M.Sc., Mineral Processing Engineering, Yazd University, Yazd, Iran, (September 19) 2007.

Thesis title: "Optimizing the apatite flotation circuit of Esfordi phosphate mine"

B.Sc., Mine Exploration Engineering, Shahrood University of Technology, Shahrood, Iran, (July 22) 2005.

HONORS and AWARDS

- Selected as one of the top researchers at Faculty of Mining, Petroleum and Geophysics, Shahrood University of Technology (2018).
- Selected as one of the top academic members at Faculty of Mining, Petroleum and Geophysics, Shahrood University of Technology (2017).
- Selected as top researcher Student at Faculty of Mining, Petroleum and Geophysics, Shahrood University of Technology (2013).
- Selected as talented student at Faculty of Mining, Petroleum and Geophysics, Shahrood University of Technology (2011).
- Selected as the best M.Sc. Student at Department of Mining & Metallurgical Engineering, Yazd University (2006).

Research Interests

- ✓ Extraction of metals and removal of impurities from ores, mining tailings and secondary resources using leaching and bioleaching
- ✓ Separation of metals from leach liquor and aqueous solutions using solvent extraction, ion exchange, adsorption processes
- ✓ Minerals flotation
- ✓ Modeling, optimization and simulation of mineral processing systems including Grinding, Flotation and Hydrometallurgy

Teaching information

- ✓ Electrochemistry in mineral processing systems (Ph.D.)
- ✓ Advanced Control of Mineral Processing (Ph.D.)
- ✓ Hydrometallurgy (M.Sc.)
- ✓ Electrometallurgy (M.Sc.)
- ✓ Biotechnology in mineral processing (M.Sc.)
- ✓ Advanced Probability and Statistics (M.Sc.)
- ✓ Mineral processing (B.Sc.)
- ✓ Numerical analysis in mining engineering (B.Sc.)
- ✓ Physical chemistry and thermodynamics in mining engineering (B.Sc.)
- ✓ Engineering Probability and Statistics (B.Sc.)

Supervising (or counseling) Dr. Azizi has supervised and graduated about 17 M.Sc. and 20 B.Sc. students". Also, 5 Ph.D. and 5 M.Sc. students are currently under supervision.

PUBLICATIONS

Books

S.M. Seyyed Alizadeh Ganji, **A. Azizi**, (2016), *Gold Hydrometallurgy*, Lorestan University press, Iran.

Journal papers

- I. Nozari, A. Azizi, (2020), Experimental and Kinetic Modeling Investigation of Copper Dissolution Process from an Iranian Mixed Oxide/Sulfide Copper Ore, *Journal of Sustainable Metallurgy*, 6(3), 437-450
- S. Nazari, S.Z. Shafaei, A. Hassanzadeh, **A. Azizi**, M. Gharabaghi, R.Ahmadi, B. Shahbazi, (**2020**), Study of effective parameters on generating submicron (nano)-bubbles using the hydrodynamic cavitation, *Physicochemical Problems of Mineral Processing*, 56(5), 884-904.
- M. Forghani, A. Azizi, M. Jamal Livani, L. Asadi Kafshgari, (2020), Adsorption of lead(II) and chromium(VI) from aqueous environment onto metal-organic framework MIL-100(Fe): Synthesis, kinetics, equilibrium and thermodynamics, *Journal of Solid State Chemistry*, 291, 121636.

- **A. Azizi**, R. Rooki, N. Mollayi, (2020), Modeling and prediction of wear rate of grinding media in mineral processing industry using multiple kernel support vector machine, *SN Applied Sciences*, 2(1469), https://doi.org/10.1007/s42452-020-03212-0.
- I. Nozari, A. Azizi, (2020), An Investigation into the Extraction Behavior of Copper from Sulfate Leach Liquor Using Acorga M5640 Extractant: Mechanism, Equilibrium, and Thermodynamics, *Mining, Metallurgy & Exploration*, 37, 1673–1680.
- **A. Azizi**, M. Masdarian, A. Hassanzadeh, Z. Bahri, T. Niedoba, A. Surowiak, (**2020**), Parametric optimization in rougher flotation performance of a sulfidized mixed copper ore, *Minerals*, 10(8), 660. https://doi.org/10.3390/min10080660.
- **A. Azizi**, R.A. Nozhati, M. Sillanpää, (**2020**), Solvent Extraction of Copper and Zinc from Sulfate Leach Solution Derived from a Porcelain Stone Tailings Sample with Chemorex CP-150 and D2EHPA, *Journal of Sustainable Metallurgy*, 6, : 250–258.
- R.A. Nozhati, **A. Azizi**, (**2020**), Leaching of copper and zinc from the tailings sample obtained from a porcelain stone mine: feasibility, modeling, and optimization, *Environmental Science* and *Pollution Research*, 27(6): 6239-6252.
- R. Katal, **A. Azizi**, M. Gharabaghi, (**2020**), Investigating the Leaching Behavior of Copper from Chalcopyrite Concentrate in H₂SO₄/CuCl₂ Media, Iranian Journal of Materials Science and Engineering, 17(2), 66-76.
- A. Zare, A. Azizi, M. Karamoozian, (2020), An investigation into the recovery of oxide copper from a complex copper ore using sulphidisation technique and hydroxamate and potassium amyl xanthate collectors, *Geosystem Engineering*, 23(1): 43-50.
- M. Noroozi, S.E. Jalali, A. Azizi, (2020), Feed Distribution Probabilistic Estimation in Mineral Processing Units Using Markov Chains, *Journal of Mineral Resources Engineering*, 5(2), 105-118 (in persian). https://doi.org/10.30479/JMRE.2020.10200.1237.
- M. Masdarian, A. Azizi, Z. Bahri, (2019), Mechanochemical Sulfidization of a Mixed Oxide-Sulphide Copper Ore by Co-grinding with Sulfur and Its Effect on the Flotation Efficiency, *Chinese Journal of Chemical Engineering*, https://doi.org/10.1016/j.cjche.2019.10.005.
- A. Hassanzadeh, A. Azizi, S. Kouachi, M. Karimi, M.S. Celik, (2019), Estimation of flotation rate constant and particle-bubble interactions considering key hydrodynamic parameters and their interrelations, *Minerals Engineering*, 141: 105836.
- S.M. Seyed Alizadeh Ganji, **A. Azizi**, Mohammad Hayati, (**2019**), Copper leaching from waste printed circuit boards (PCBs) using sulphuric acid and hydrogen peroxide, *Research Journal of Chemistry and Environment*, 23(8): 1-9.
- L. Asadi Kafshgari, M. Ghorbani, A. Azizi, (2019), Synthesis and characterization of manganese ferrite nanostructure by co-precipitation, sol-gel, and hydrothermal methods, *Particulate Science and Technology*, 37(7): 904-910.
- M. Rasolizadeh, A. Azizi, M. Karamoozian, (2019), Investigating the extraction behaviour of lead from alkaline solution, *Research Journal of Chemistry and Environment*, 23(1): 32-37.
- A. Mojtahedi, **A. Azizi** and M. Karamoozian, (**2019**), Silver recovery from tailing dam of Ahangaran mine using leaching method, *Journal of Applied Research in Chemistry*, 12: 17-26 (in Persian)
- S.M. Seyed Ghasemi, **A. Azizi**, (**2018**), Alkaline leaching of lead and zinc by sodium hydroxide: kinetics modeling, *Journal of Materials Research and Technology*, 7(2): 118-125.
- R. Ghaedrahmati, M. Hayati, A. Azizi, (2018), Modeling and environmental risk assessment of eastern Alborz coal washing plant, *Iranian Journal of Earth Sciences*, 10(2): 99-108.

- F. Mahmoodi, **A. Azizi**, (**2018**), Optimizing the alkaline oxidation pretreatment of a refractory gold ore using taguchi orthogonal array method, *Materials Research Express*, DOI: 10.1088/2053-1591/aae196.
- S.M. Seyed Ghasemi, **A. Azizi**, (2018), Leaching of lead and zinc from a low-grade ore in citric acid media, *Iranian Journal of Chemistry and Chemical Engineering*, 37(5): 105-110.
- B.Bayati, A. Azizi, M. Karamoozian, (2018), A comprehensive study of the leaching behavior and dissolution kinetics of copper oxide ore in sulfuric acid lixiviant, *Scientia Iranica*, 25(3): 1412-1422.
- S. Feizollahi, **A. Azizi**, (**2018**), Solvent extraction of copper from an industrial sulfate liquor using Chemorex CP-150, *Journal of Mining & Environment*, 9(4): 905-916.
- S. Shahraki, M. Karamoozian, A. Azizi, (2018), Desulfurization of coal by HNO3 leaching: Optimization of influential factors using Box-Behnken design, *Journal of Mining & Environment*, 9(3): 657-665.
- S. Shahraki, M. Karamoozian, A. Azizi, (2018), Investigating the pyritic sulfur reduction and the coal ash content using nitric acid leaching, *Journal of Separation Science and Engineering*, 10(1), 67-76. (in Persian)
- T. Asadi, A. Azizi, J.C. Lee, M. Jahani, (2018), Solvent extraction of zinc from sulphate leaching solution of a sulphide-oxide sample using D2EHPA and Cyanex 272, *Journal of Dispersion Science and Technology*, 39(9): 1328-1324.
- B. Fadaei, **A. Azizi** and K. Seifpanahi, (**2018**) Adsorption of metal contaminants of lead and cobalt from aqueous solutions using graphite nanoparticles and the study of equilibrium and kinetics reactions, *Journal of Environmental Science and Technology (JEST)*, (DOI): 10.22034/jest.2018.24203.3323. (in Persian)
- S.M. Seyyed Alizadeh Ganji, **A. Azizi**, (**2017**), A Review of the Biooxidation Process and Neutralization of Wastewater for Gold Refractory Ores, *Iranian Chemical Engineering Journal*, 16(93): 54-64. (in Persian)
- R. Khosravi, **A. Azizi**, R. Ghaedrahmati, V.K. Gupta, S. Agarwal, (**2017**), Adsorption of gold from cyanide leaching solution onto activated carbon originating from coconut shell—Optimization, kinetics and equilibrium studies, *Journal of Industrial and Engineering Chemistry*, 54: 464-471.
- T. Asadi, **A. Azizi**, J.C. Lee, M. Jahani, (**2017**), Leaching of zinc from a lead-zinc flotation tailing sample using ferric sulphate and sulfuric acid media, *Journal of Environmental Chemical Engineering*, 5(5): 4769-4775.
- S.M. Seyed Alizadeh Ganji, S.Z. Shafaie, N. Goudarzi, A. Azizi, (2017), Modeling and evaluating the important factors affecting the solvent extraction of lanthanum and neodymium from nitric acid solution in D2EHPA+Cyanex272+Lactic acid system, *Journal of Chemical Technology and Metallurgy*, 52(5): 981-989.
- **A. Azizi**, S.M. Seyed Ghasemi, (**2017**), A comparative analysis of the dissolution kinetics of lead from low grade oxide ores in HCl, H₂SO₄, HNO₃ and citric acid solutions, *Metallurgical Research & Technology*, 114(4), 12 pages.
- L. Asadi Kafshgari, M. Ghorbani, **A. Azizi**, S. Agarwal, V.K. Gupta, (**2017**), Modeling and optimization of Direct Red 16 adsorption from aqueous solutions using nanocomposite of MnFe₂O₄/MWCNTs: RSM-CCRD model, *Journal of Molecular Liquids*, 233: 370-377.
- L. Asadi Kafshgari, M. Ghorbani, **A. Azizi**, (2017), Fabrication and investigation of MnFe₂O₄/MWCNTs nanocomposite by hydrothermal technique and adsorption of cationic and anionic dyes, *Applied Surface Science*, 419: 70-83.

- S.M. Seyed Ghasemi and **A. Azizi**, (**2017**), Investigation of leaching kinetics of zinc from a low-grade ore in organic and inorganic acids, *Journal of Mining & Environment*, 8(4): 579-591.
- **A. Azizi** and S.M. Seyyed Alizade Ganji, (2017), Relative Floatability as a Criterion for Evaluating the Separation Performance of Phosphate from Iron, *International Journal of Mining Science and Technology*, 27(3): 451-458.
- **A. Azizi**, (2017), A Study on the Modified Flotation Parameters and Selectivity Index in Copper Flotation, *Particulate Science And Technology*, 35(1): 38-44.
- **A. Azizi**, S.Z. Shafaei and R. Rooki, (**2016**), Wear rate prediction of grinding media using BPNN and MLR models in grinding of sulphide ores, *Iranian Journal of Materials Science and Engineering*, 13(2): 73-84.
- S.M. Seyed Alizadeh Ganji, S.Z. Shafaei, N. Goudarzi and **A. Azizi**, (**2016**), Investigating the best mixture extraction systems in the separation of rare earth elements from nitric acid solution using Cyanex272, D2EHPA, and 8-Hydroxyquinoline, *Geosystem Engineering*, 19(1): 32-38.
- **A. Aazizi**, R. Ghaedrahmati, N. Ghahramani and R. Rooki, (**2016**), Modeling and simulation of the cyanidation process of Aghdareh gold ore using artificial neural network and multiple linear regression, *International Journal of Mining and Mineral Engineering*, 7(2): 139-154.
- S.M. Seyed Alizadeh Ganji, **A. Azizi** and M. Hayati, (**2016**), Investigating the removal methods of cyanide from tailing and cyanidation process residues, *Journal of Iranian Mining Engineering Organization*, 36: 3-10. (in persian)
- **A. Azizi** and R. Ghaedrahmati, (2015), Optimizing and evaluating the operational factors affecting the cyanide leaching circuit of the Aghdareh gold processing plant using a CCD model, *Proceedings of The Royal Society A Mathematical Physical and Engineering Sciences*, 471(2184): 14 pages.
- **A. Azizi**, S.Z. Shafaei, (**2015**), Mohammad Noaparast and Mohammad Karamoozian, An investigation of the corrosive wear of steel balls in grinding of sulphide ores, *Int. Journal of Mining & Geo-Engineering*, 49(1), 83-91.
- **A. Azizi**, A. Hassanzadeh and B. Fadaei, (2015), Investigating the first-order flotation kinetics models for Sarcheshmeh copper sulphide ore, *International Journal of Mining Science and Technology*, 25(5): 849-854.
- **A. Azizi**, (2015), Investigating the Controllable Factors Influencing the Weight Loss of Grinding Ball Using SEM/EDX Analysis and RSM Model, *Engineering Science and Technology*, 18(2): 278-285.
- **A.** Azizi, (2015), Optimization of Rougher Flotation Parameters of the Sarcheshmeh Copper Ore Using a Statistical Technique, *Journal of Dispersion Science and Technology*, 36(8): 1066-1072.
- **A. Azizi**, (2014), Influence of collector dosage and pulp chemistry on copper flotation, *Geosystem Engineering*, 17 (6): 311-316.
- **A. Azizi**, S. Z. Shafaei, M. Noparast, M. Karamoozian, C. J.Greet, M. Yarahmadi, M. Jabbari Behjat, (**2014**), A Study on the Corrosive and Abrasive Wear of Grinding Media in Grinding of Minerals Using Fuzzy Analytical Hierarchy Delphi Method, *Arabian Journal for Science and Engineering*, 39(5): 3373-3382.
- A. Abbasi Gharaei, B. Rezai, A. Azizi and K. Seifpanahi Shabani, (2014), The Role of pH and Solid Content of Ball Grinding Environment on Rougher Flotation, *Research Journal of Applied Sciences, Engineering and Technology*, 8(2): 272-276.

- **A. Azizi**, S.Z. Shafaei, M. Noaparast and M. Karamoozian, (**2013**), Investigation of the electrochemical behavior of factors affecting the grinding environment of a porphyry copper sulphide ore, *Journal of Mining and Metallurgy*, 49 A (1): 45–55.
- **A. Azizi**, S. Z. Shafaei, M. Noparast, M. Karamoozian, (2013), Galvanic interaction between chalcopyrite and pyrite with grinding media in grinding a porphyry copper sulphide ore, *Journal of Chemistry*, Article ID 817218, 9 pages.
- **A. Azizi**, S. Z. Shafaei, M. Noparast, M. Karamoozian, (2013), Modeling and optimizing the corrosive wear of steel balls in ball grinding mill, *Iranian Journal of Materials Science & Engineering*, 10(4): 1-14.
- **A. Azizi**, S. Z. Shafaei, M. Noparast, M. Karamoozian, (2013), The effect of pH, solid content, water chemistry and ore mineralogy on the galvanic interactions between chalcopyrite and pyrite and steel balls, *Frontiers of Chemical Science and Engineering*, 7(4): 464-471.
- **A. Azizi**, A. Dehghani, S.Z. Shafaei, (2013), Influence of Operating Parameters on the Apatite Flotation Kinetics, *Journal of Mining and Environment*, 4(1): 45-55.
- **A. Azizi**, S.Z. Shafaei, R. Rooki, A. Hasanzadeh, M. Paymard, (**2012**), Estimating of gold recovery by using back propagation neural network and multiple linear regression methods in cyanide leaching process, *Materials Science: An Indian Journal*, 8(11): 443-453.
- A. Dehghani, A. Azizi, S. H. Mojtahedzadeh and Kh. Gharibi, (2012), Optimizing Rougher Flotation Parameters of the Esfordi Phosphate Ore, *Mineral Processing and Extractive Metallurgy Review*, 33(3): 260-268.

Conference papers

- M. Masdarian, A. Azizi and Z. Bahri, (2018), Investigating the mechanochemical sulfidization of copper oxide using sulfur and its influence on copper oxide recovery by flotation method, *First National Conference on Applied Chemistry and Nanochemistry*, Gonabad, Iran.
- O. Raeiszadeh, A. Abedi, A. Azizi, (2018), Investigating the influence of particle size and degree of freedom of galena and sphalerite minerals on lead and zinc flotation of Goshfil mine, 5th International Conference on Applied Research in Chemistry and Chemical Engineering focusing on local technologies, Tehran, Iran.
- F. Mahmoodi, A. Azizi, (2018), The Effect of pH and oxidation time on the recovery of gold from the refractory ores of gold, *International Congress Chemistry and Nanotechnology from Research to Technology*, Tehran, Iran.
- R. Sheikhi, **A. Azizi**, (2018), Coal fly ash as a promising source of valuable metals: an investigation on recovery methods, 4nd National Iranian Coal Congress, Tabass, Iran.
- T. Asadi, A. Azizi, M. Jahani, (2017), Modeling the leaching behavior of zinc from zinc oxide-sulfide ore, 2nd Iranian Applied Chemistry Seminar.
- S.M. Seyed Alizadeh Ganji, M. Hayati, A. Azizi, (2017), Investigating the hydrometallurgical methods of valuable metals from Recycled materials, *Conference on New Research in Science and Engineering*, Qazvin, Iran.
- R. Khosravi, R. Ghaedrahmati and A. Azizi, (2016), Modeling of adsorption process of gold from cyanide solutions onto activated carbon using mathematical models, *The 6th National and 1st International Conference on Applications of Chemistry in Advanced Technologies*, Isfahan, Iran.

- S.M. Seyed ghasemi and A. azizi, (2016), The role of leaching agents in the recovery of lead and zinc from low grade zinc oxide ores, *The International Conference on New Research in Engineering Sciences*, Tehran, Iran.
- B. Fadaei, A. Azizi and K. Seifpanahi, (2016), Removal of Methylene Blue dye from aqueous solution using graphite nanoadsorbent, *Second International Conference in New Research on chemistry & chemical engineering*, Tehran, Iran.
- B. Fadaei, **Asghar Azizi** and K. Seifpanahi, (2016), Removal of crystal violet dye from aqueous solution using graphite nanoadsorbent, *Second International Conference in New Research on chemistry & chemical engineering*, Tehran, Iran.
- S. Shahraki, Mohammad Karamoozian, **Asghar Azizi**, (**2016**), Determination of the effective factors of Eastern Alborz coal in nitric acid leaching process, 3nd National Iranian Coal Congress, Shahrood, Iran.
- L. Asadi Kafshgari, Mohsen Ghorbani, **Asghar Azizi**, (**2016**), Investigating the charactrizations of manganese ferrite nanostructure synthesized by co-precipitation method, 3rd International Congress of Chemistry and Chemical Engineering, Tehran, Iran.
- S. Shahraki, M. Karamoozian, A. Azizi, (2015), Reducing the coal ash from Sharghi Alborz coal by using leaching methods, *International Conference on Mining*, *Metals and Materials*, Tehran, Iran.
- A. Hassanzadeh, A. Azizi, (2015), Flotation circuit efficiency enhancement regarding increase of rougher cells throughput, 24th International Mining Congress and Exhibition of Turkey, Antalya, Turkey.
- A. Hassanzadeh, E. Farhadi and **A. Azizi**, (2015), Modeling and analysis of residence time distribution in industrial mechanical flotation cells, 24th International Mining Congress and Exhibition of Turkey, Antalya, Turkey.
- A. Hassanzadeh, M.J. Rahimdel, M. Karamoozian, A. Azizi, S. Hassanzadeh, (2015), An optimization of Azurite flotation of Miduk copper complex by design experiment method, *Applied Research in Engineering and Basic Sciences Conference*, Tehran, Iran.
- **A. Azizi**, S.Z. Shafaei, (2014), Influence of size distribution of particle and ball and quality of ball on corrosion rate of steel balls in grinding of copper sulphide ore, 5th Iranian Mining Engineering Conference, Tehran, Iran.
- **A. Azizi**, S.Z. Shafaei, (**2014**), Influence of pH, solid percentage and water chemistry on pulp potential and dissolved oxygen concentration in grinding of copper sulphide ore, 5th *Iranian Mining Engineering Conference*, Tehran, Iran.
- **A. Azizi**, M. Dastjerdi and B. Fadaei, (2014), Investigating the water quality of flotation on copper recovery, *National Conference on Mineral Sciences*, Sari, Mazandaran, Iran.
- **A. Azizi**, B. Fadaei, and M. Dastjerdi, (2014), Investigating the first order flotation kinetic models on copper recovery, *National Conference on Mineral Sciences*, Sari, Mazandaran, Iran.
- **A. Azizi**, S.Z. Shafaei, M. Noaparast, M. Karamoozian and M. Jabbari Behjat, (2014), Investigating the influence of mill speed, throughout, ball charge weight and grinding time on the corrosive wear of grinding media, *National Conference on Mineral Sciences*, Sari, Mazandaran, Iran.
- **A. Azizi**, S.Z. Shafaei, M. Noaparast, M. Karamoozian and M. Jabbari Behjat, (2014), Investigating the electrochemical behavior of grinding environment of sulphide copper ore by pulp potential and open circuit potential, *National Conference on Mineral Sciences*, Sari, Mazandaran, Iran.

- **A. Azizi**, S. Z. Shafaei, M. Noaparast, M. Karamoozian, M. Yarahmadi, M. Jabbari Behjat, (2013), Effect of galvanic interactions between minerals and steel balls on copper recovery, *The First International Conference on Mining, Mineral Processing, Metallurgical and Environmental Engineering*, Zanjan, Iran.
- **A. Azizi**, S. Z. Shafaei, M. Noaparast, M. Karamoozian, M. Yarahmadi, M. Jabbari Behjat, (2013), Influence of pulp chemistry on corrosive wear of steel balls, *The First International Conference on Mining, Mineral Processing, Metallurgical and Environmental Engineering*, Zanjan, Iran.
- M. Kor, KH. Gharibi, H. Asadian and A. Azizi, (2010), An Investigation into the effects of operational parameters in phosphate processing using column flotation method, 3th Iranian Mining Engineering Conference, Yazd, Iran.

Reviewer for Journals

Journal of Mining and Environment, Chemical Engineering Communication, Geosystem Engineering, Particulate Science and Technology, Iranian Journal of Earth Science, Mineral Processing and Extractive Metallurgy Review, Iranian Journal of Materials Science and Engineering, Journal of Rare Earths, Materials Research Express, Amirkabir Journal of Civil Engineering, Journal of Modeling in Engineering, Journal of Mineral Resources Engineering, Chemical Papers

Software and computer skills

Microsoft Office Full Pack (MS Word, MS Excel, MS Power Point), SPSS, Mini Tab, Design Expert (DX), MATLAB, Mathematica and **Artificial intelligence techniques** such as Neural Networks