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Educational Background

B.Sc.

Mining Engineering, Kerman University, Iran, 2000

M.Sc.

Mineral Processing, University of Tehran, Iran, 2002

Ph.D.

Mineral Processing, University of Tehran, Iran, 2008

Research Interests

Modeling and Simulation of Mineral Processing Systems

Machine Vision-based Monitoring and Control of Flotation and Comminution Circuits

Gas Dispersion Properties in Flotation Systems

Mixing Characterization and Modeling

Resource Recovery from Waste Streams

Courses

Advanced Mineral Processing

Advanced Flotation

Control and Modeling of Mineral Processing Systems

Advanced Comminution

Introduction to Mineral Processing

Engineering Probability and Statistics

Analytical Geochemistry

Publications

Journal Papers:

Massinaei, M, Oliazadeh, M., Seyed Bagheri, A., 2006. Biological copper extraction from melting furnaces dust of Sarcheshmeh Copper Mine. *Int. J. Miner. Process.* 81, 58–62.

Massinaei, M, Oliazadeh, M. and Seyed Bagheri, A., Shahverdi, A.R., 2006. Recovery of copper from melting furnaces dust by microorganisms. *Minerals Engineering* 19, 209–210.

Oliazadeh, M. and Massinaie, M., July 2006. Comparison between shaking flasks and agitating bioreactors in recovery of copper from smelting furnaces dust. *Journal of Engineering College, Tehran University.*

Massinaei, M., Kolahdoozan, M., Noaparast, M., Oliazadeh, M., Sahafipour, M., Finch, J.A., 2007. Mixing characteristics of Industrial columns in rougher circuit. *Minerals Engineering* , 20,1360–1367.

Massinaei, M., Kolahdoozan, M., Noaparast, M., Oliazadeh, M., Yianatos, J., Shamsadini, R and Yarahmadi, M., 2009. Hydrodynamic and metallurgical characteristics of industrial and pilot columns in rougher circuit. *Minerals Engineering* 22, 96–99. 574

Massinaei, M., Kolahdoozan, M., Noaparast, M., Oliazadeh, M., Yianatos, J., Shamsadini, R and Yarahmadi, M., 2009. Hydrodynamic and kinetic characterization of industrial columns in rougher circuit. *Minerals Engineering* 22,357–365.

Massinaei, M., Kolahdoozan, M., Noaparast, M., Oliazadeh, M., Yianatos, J., Shamsadini, R and Yarahmadi, M., 2009. Froth zone characterization of an industrial flotation column in rougher circuit. *Minerals Engineering* 22, 272–278. 576

Massinaei, M. and Doostmohammadi, R., 2010. Modeling of bubble surface area flux in an industrial rougher column using artificial neural network and statistical Techniques. *Minerals Engineering* 23 (2), 83–90.

Mehrshad, N. and Massinaei, M., 2011. New image processing algorithm for measurement of bubble size distribution from flotation froth images. *Minerals and Metallurgical Processing Journal* 28 (3), 146–150.

Massinaei, M., Falaghi, H., Izadi, H. 2013. Optimization of the metallurgical performance of an industrial flotation column using neural network and GSA (Gravitational Search Algorithm), *Canadian Metallurgical Quarterly*, Vol. 52, No. 2, 115-122.

Hamzeloo, E., Massinaei, M. and Mehrshad, N., 2013. Evaluation of various size measures for estimation of particle size distribution using PCA and neural network, *Iranian Journal of Mining Engineering* 8 (18), 1-9.

Saravani, A. J., Mehrshad, N. and Massinaei, M., 2014. Fuzzy-based Modeling and Control of an Industrial Flotation Column, *Chemical Engineering Communications* Vol. 201, No. 7, 896-908.

Massinaei, M., Sedaghati, M.R., Rezvani, R., Mohammadzadeh, A.A., 2014. Using data mining to assess and model the metallurgical efficiency of a copper concentrator, *Chemical Engineering Communications* 201 (10), 1314-1326.

Jahedsaravani, A., Marhaban, M.H., Massinaei, M., Saripan, M.I., Mehrshad, N., 2014. Development of a new algorithm for segmentation of flotation froth images. *Minerals & Metallurgical Processing* 31 (1), 66-72.

Hamzeloo, E., Massinaei, M. and Mehrshad, N., 2014. Estimation of particle size distribution on an industrial conveyor belt using image analysis and neural networks. *Powder Technology* 261, 185–190.

Jahedsaravani, A., Marhaban, M.H., Massinaei, M., 2014. Prediction of the metallurgical performances of a batch flotation system by image analysis and neural networks, *Minerals Engineering* 69, 137–145.

Mehrabi, A., Mehrshad, N., Massinaei, M., 2014. Machine vision based monitoring of an industrial flotation cell in an iron flotation plant. *International Journal of Mineral Processing* 133, 60–66.

Hosseini, M.R., Haji Amin Shirazi, H., Massinaei, M., Mehrshad, N., 2015. Modeling the relationship between froth bubble size and flotation performance using image analysis and neural networks, *Chemical Engineering Communications* 202 (7), 911-919.

Sadeghi, S., Zeraatkar Moghaddama A., Massinaei, M., 2015. Novel tunable composites based on bentonite and modified tragacanth gum for removal of acid dyes from aqueous solutions. *RSC Advances* 5, 55731–55745.

Massinaei, M., 2015. Estimation of metallurgical parameters of flotation process from froth visual features. *International Journal of Mining and Geo-Engineering (IJMGE)* 49 (1), 75-81.

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Jahedsaravani, A., Marhaban, M.H., Massinaei, M., Noor, S.B., 2016. Application of image processing and adaptive neuro-fuzzy system for estimation of the metallurgical parameters of flotation process. *Chemical Engineering Communications* 203 (10), 1395-1402.

Jahedsaravani, A., Massinaei, M., Marhaban, M.H., 2017. An image segmentation algorithm for measurement of flotation froth bubble size distributions. *Measurement* 111, 29–37.

Jahedsaravani, A., Massinaei, M., Marhaban, M.H., 2017. Development of a machine vision system for real-time monitoring and control of batch flotation process. *International Journal of Mineral Processing* 167, 16–26.

Khefajeh, E., Behnamfard, A. Massinaei, M., 2017. Performance evaluation of magnetic separators of units 2 and 6 at Sangan iron concentrator. *Journal of Mineral Resources Engineering (JMRE)* 2, 13-20 (in Persian).

Rezaei, R., Massinaei, M., Zeraatkar Moghaddam, A., 2018. Removal of the residual xanthate from flotation plant tailings using modified bentonite. Minerals Engineering 119, 1–10.

Javanshir, S. Massinaei, M., Tavakoli, M., 2018. Improvement of metallurgical performance of flotation circuit at Sangan iron concentrator. Journal of Mineral Resources Engineering (JMRE) 3(3), 77-86 (in Persian).

Massinaei, M., Jahedsaravani, A., Taheri, E., Khalilpour, J., 2019. Machine vision based monitoring and analysis of a coal column flotation circuit. Powder Technology 343, 330-341.

Amrollahi, A., Massinaei, M., Zeraatkar Moghaddam, A., 2019. Removal of the residual xanthate from flotation plant tailings using bentonite modified by magnetic nano-particles. Minerals Engineering 134, 142-155.

Arjmand, R., Massinaei M., Behnamfard, A., 2019. Improving flocculation and dewatering performance of iron tailings thickeners. Journal of Water Process Engineering 31, 1-8.

Jahedsaravani, A., Massinaei, M., Khalilpour, J., 2019. Application of froth images classification and clustering based on visual features in flotation cell performance. Journal of Mineral Resource Engineering 4(2), 129-137 (in Persian).

Zarie, M., Jahedsaravani, A., Massinaei, M., 2020. Flotation froth image classification using convolutional neural networks. Minerals Engineering 155, 106443.

Massinaei, M., Jahedsaravani, A., Mohseni, H., 2022. Recognition of process conditions of a coal column flotation circuit using computer vision and machine learning. International Journal of Coal Preparation and Utilization 42 (7), 2204–2218.

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Massinaei M., Namvar, F., 2022. Effect of Galvanic Interactions between Grinding Media and Sulfide Minerals on the Performance of Grinding and Flotation Processes. Journal of Mineral Resource Engineering 7 (2), 123-138.

Massinaei, M., Fanaee, S.A., Hedayatifrad, M., 2021. Simulation of Flow in Single Phase Hydrocyclone using Computational Fluid Dynamic. Journal of Mineral Resource Engineering 6(3),139-155.

Shadman, S., Massinaei, M., Zeraatkar Moghaddam, A., 2021. Removal of cyanide from the gold cyanidation plant tailings using graphene-based magnetic nanocomposites. Chemical Papers 75(10), 5543–5560.

Conference Papers:

Oliazadeh, M., Massinaie, M. and Seyed Bagheri, A., 2006. Biological copper extraction from melting furnaces dust of Sarcheshmeh copper mine. IMPC 2006, Turkey.

Massinaei, M., Oliazadeh, M., Kolahdoozan, M. and Noaparast, M., 2007. Optimization of froth washing system of columns in rougher circuit of Miduk copper concentrator. Cu 2007, Toronto, Ontario, Canada, Volume II, 233–240.

Massinaei, M., Mehrshad, N., 2010. Review of image analysis based control approaches for flotation circuits. Mining Engineering Conference, Yazd University, 27–29 January 2010, 2128–2136. 582

Massinaei, M., R. Doostmohammadi, A. Aryafar, 2010. Collection rate constant modeling in a full-scale flotation column. SGEM 2010, 20–26 June, Bulgaria, Conference Proceeding Vol. I, 631–638.

Mehrshad, N., Massinaei, M., Daneshmand, F., 2010. An adaptive approach for bubble size measurement from flotation froth images. SGEM 2010, 20–26 June, Bulgaria, Conference Proceeding Vol. I, 619–624.

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Aryafar, A., Ardejani, F.D., Massinaei, M., 2010. The study of Sarcheshmeh copper ore impact on water quality of Shoor river, Sarcheshmeh Mine, Kerman Province, Iran. IMPS 2010, 6–8 October 2010, 1073–1078.

Sedaghati Mokhtari, M.R., Massinaei, M., Mohammad Zadeh, A.A., 2010. Study of input variables influence on metallurgical performance of a copper concentrator using data mining technique, The 4th Data Mining Conference (IDMC 10), 1 December 2010, Tehran, Iran, 759–763.

Sedaghati Mokhtari, M.R., Massinaei, M., Zamanipour, M., 2010. Using data mining to predict feed grade of a magnesia processing plant, The 4th Data Mining Conference (IDMC 10), 1 December 2010, Tehran, Iran, 764–767.

Massinaei, M., Oliazadeh, M., Zeidabadi, S., Yarahmadi, M.R., A review of flotation columns application in rougher circuits, 43rd Annual Meeting of the Canadian Mineral Processors, January 18–20, 2011, Ottawa, Ontario, Canada, 257–268.

Hamzeloo, E., Massinaei, M. Mehrshad, N., 2011. A machine vision-based approach for measuring different equivalent diameters of particles, 22nd World Mining Congress, 11–16 Sep., Istanbul, 749–753.

Massinaei, M., Falaghi, H., Izadi, H., 2011. Optimization of an industrial flotation column performance using GSA: Gravitational Search Algorithm, 22nd World Mining Congress, 11–16 Sep., Istanbul, 251–255.

Hamzeloo, E., Masinaei, M., Mehrshad, N., 2011. A machine vision approach for particle size estimation, The 7th Iranian Machine Vision & Image Processing Conference, IUST, 16–17 Nov. 2011.

Hosseini, M.R. Haji Amin Shirazi, H., Masinaei, M., Mehrshad, N. Garmsiri, M.R., 2012. Monitoring froth flotation using image analysis and neural network. IMPC 2012, New Delhi, India, 24–28 Sep. 2012. 2095–2101.

Hamzeloo, E., Masinaei, M., Mehrshad, N., 2012. Estimation of particle size distribution on a conveyor belt using image analysis and neural network. IMPC 2012, New Delhi, India, 24–28 Sep. 2012, 3298–3305.

Massinaei, M., Mehrshad, N., Hosseini, M.R., 2013. Image processing-based monitoring of a batch flotation process. The First Iranian Conference on Pattern Recognition and Image Analysis (PRIA 2013), University of Birjand, Iran, 6-8 March 2013, 460-463.

Daneshmand, F., Mehrshad, N., Massinaei, M., 2013. A new approach for froth image segmentation using fuzzy logic. The First Iranian Conference on Pattern Recognition and Image Analysis (PRIA 2013), University of Birjand, Iran, 6-8 March 2013, 464-469.

Sadeghi, S., Zeraatkar, A., Massinaei, M. and Alavi Rada, F., 2013. A novel modified bentonite adsorbent using grafted gum for removal of acid blue 113 from textile wastewaters and optimization by central composite design, 19th Iranian Seminar of Analytical Chemistry, Ferdowsi University of Mashhad, 26-28 Feb. 2013.

Gholami, H., Massinaei, M., Jabari, M., 2014. The performance of empirical models in simulating of industrial hydrocyclones. 5th Mining Engineering Conference, 14 October 2014, Tehran, Iran, 1374-1381.

Heidari, H., Massinaei, M., Mehrshad, N., Mohammadi, M.A., Hosseini, M., 2014. Estimation of particle size distribution of SAG mill feed at Sarcheshmeh copper concentrator by image analysis. 5th Mining Engineering Conference, 14 October 2014, Tehran, Iran, 1417-1423.

NejadAria, M., Massinaie, M., Hoseini Ramesheh, M., Mousavi, M., 2015. Simulation of secondary grinding circuit at Miduk copper concentrator using USIM PAC. 4th International Conference on Metallurgical & Materials Engineering, Iran University of Science & Technology, Tehran, Iran, 10-11 Nov. 2015.

Karimpour, M., Massinaei, M., Bagherian, A., 2015. Evaluation of different copper sulfide depressants for using in Sungun molybdenite flotation plant. 4th International Conference on Metallurgical & Materials Engineering, Iran University of Science & Technology, Tehran, Iran, 10-11 Nov. 2015.

Gholami, H., Massinaei, M., Jabari, M., 2015. Simulation-based design of a hydrocyclone unit for primary grinding circuit at Sarcheshmeh pilot plant. 4th International Conference on Metallurgical & Materials Engineering, Iran University of Science & Technology, Tehran, Iran, 10-11 Nov. 2015.

Babayi, Z., Massinaei, M., Hekmati, M., Shamsadini, M.R., Mousavi, M., 2015. Improving copper recovery in rougher circuit of Miduk copper concentrator. 4th International Conference on Metallurgical & Materials Engineering, Iran University of Science & Technology, Tehran, Iran, 10-11 Nov. 2015.

NejadAria, M., Massinaei, M., Hosseini Ramesheh, M., Mousavi, M., 2016. Simulation of SAG Mill circuit at Miduk copper concentrator by USIM PAC. The 34th National & International Geosciences Congress, 22-24 February 2016, Tehran, Iran.

Heidari, H., Massinaei, M., Mehrshad, N., Mohammadi, M.A., Hosseini, M., 2016. Modeling the relationship between feed particle size and SAG mill performance at Sarcheshmeh Copper Concentrator. The 34th National & International Geosciences Congress, 22-24 February 2016, Tehran, Iran.

Pordel, M., Massinaei, M., Mehrshad, N., Arjmand, R., Ghaghazanian, S., 2016. AG mill liner wear Rate measurement at Sangan iron concentrator. The 34th National & International Geosciences Congress, 22-24 February 2016, Tehran, Iran.

Saravani, A.J., Mehrshad, N., Massinaei, M., 2016. Modeling and control of an industrial flotation column using fuzzy logic. 1st International Conference on New Research Achievements in Electrical and Computer Engineering, AmirKabir University of Technology, 13 May 2016.

Pordel, M., Massinaei, M., Heidari, H., Arjmand, R., 2016. Effect of feed particle size distribution on AG mill performance at Sangan iron concentrator. 6th Iranian Mining Engineering Conference, 6-8 Nov. 2016, Tehran, Iran.

NejadAria, M., Massinaei, M., Hoseini, M, Mousavi, M., 2016. Simulation of grinding circuit at Miduk copper concentrator. 6th Iranian Mining Engineering Conference, 6-8 Nov. 2016, Tehran, Iran.

Tajdar, M., Massinaei, M., Arjmand, R., Ghaghazani, S., 2016. Tower mill liner wear profile measurement at Sangan iron concentrator. 6th Iranian Mining Engineering Conference, 6-8 Nov. 2016, Tehran, Iran.

Namvar, F., Massinaei, M., Hosseini Ramsheh, M., Moosavi, M., 2017. Effect of grinding media on media wear rate and flotation performance (Case study: Miduk copper concentrator). 35th International Geosciences Conference. Geological Survey & Mineral Explorations of Iran (GSI). 19-21 Feb. 2017.

Amrollahi, A., Massinaei, M., Zeraatkar Moghaddama A., 2017. Removal of residual xanthate from mineral processing tailings using bentonite modified by MnFe₂O₄ nanoparticles. 8th National Seminar of Chemistry and Environment, 6-7 Sep. 2017, Kharazmi University, Tehran, Iran.

Amrollahi, A., Massinaei, M., Zeraatkar Moghaddama A., 2017. Using bentonite modified by CuFe₂O₄ for removal of residual xanthate from mineral processing tailings. Chemistry and Nano-chemistry from Research to National Development, 18-19 Oct. 2017, University of Tehran, Tehran, Iran.

Taheri, E., Massinaei, M., Noori, M., Alidokht, M., 2018. Evaluation of error in level control system of flotation columns at Tabas coal preparation plant. 4th National Iranian Coal Congress, 16-18 April 2018, Tabas Coal Mines Complex, Tabas, Iran.

Taheri, E., Massinaei, M., Noori, M., Sabeghi, M., 2018. Evaluation of aeration system of flotation columns at Tabas coal preparation plant. 4th National Iranian Coal Congress, 16-18 April 2018, Tabas Coal Mines Complex, Tabas, Iran.

Massinaei, M., Jahedsaravani, A., 2019. Application of intelligent techniques for prediction of the metallurgical performance of a batch flotation process. 16th Iranian National Congress of Chemical Engineering, Amirkabir University of Technology, 19-21 Jan. 2019.

Jahedsaravani, A., Massinaei, M., Teimoori, S., 2019. Modeling of the metallurgical performance of an industrial flotation column using principal component analysis and artificial neural networks. 16th Iranian National Congress of Chemical Engineering, Amirkabir University of Technology, 19-21 Jan. 2019.

Golami, H., Massinaei, M., Abdollahzadeh, A.A., Behjat Jabari, M., 2019. Evaluation of empirical models in estimating the performance factors of industrial hydrocyclons. 2nd National Conference on Materials Engineering, Metallurgy and Mine of Iran, Shahid Chamran University of Ahvaz, 20 January 2019.

Massinaei, M., Yazdanpanah, A.R., 2020. Measurement of Magnetic Gradient and Force Profiles Around the Cobber Magnetic Separators at Sangan Iron Concentrator. 8th Iranian Mining Engineering Conference, University of Birjand, 19-20 February 2020.

Massinaei, M., Abasi Meimand, S., 2020. Evaluation of level control system of cleaner flotation columns at Miduk copper concentrator. 8th Iranian Mining Engineering Conference, University of Birjand, 19-20 February 2020.

Massinaei, M., Abasi Meimand, S., 2020. Effect of operating parameters on metallurgical performance of cleaner flotation columns at Miduk copper concentrator. 8th Iranian Mining Engineering Conference, University of Birjand, 19-20 February 2020.