

Iterams project. Scientific production

List of publications, papers sent for review, articles and posters in conferences and PhD and MSc theses.

Date: Jan 18th 2021

1. Auranen, I. J. Raatikainen (2020) ON-LINE SENSORS IN PRE-CONCENTRATION – 25 YEARS OF EXPERIENCE. AUSSim: 2020 Preconcentration Digital Conference Aus: Preconcentration and ore processing by on-line sensors.
2. Can, I.B, Bıçak, Ö., Özçelik, S., Can, N.M., Ekmekçi, Z. (2020) Sulphate Removal from Flotation Process Water using Ion Exchange Resin Column System. Minerals, 23, 10 (8), 655, <https://doi.org/10.3390/min10080655>
3. Blanc, P., A. Lach, A. Lassin, M. Falah, R. Obenaus-Emler, S. Guignot, Modeling hydration of mine tailings: Production of hydraulic binders from alkali-activated materials, Cem. Concr. Res. 137 (2020) 106216. doi:10.1016/j.cemconres.2020.106216.
<https://www.sciencedirect.com/science/article/pii/S0008884620303215#ec0005>
4. Bomberg, M., Hanna Miettinen , Benjamin Musuku , Päivi Kinnunen (2020) First insights to the microbial communities in the plant process water of the multi-metal Kevitsa mine. Research in Microbiology <https://doi.org/10.1016/j.resmic.2020.07.001>
5. Bomberg, M., Hanna Miettinen (2020) Data on the optimization of an archaea-specific probe-based qPCR assay. Data in Brief. Accepted.
6. Bomberg M., Miettinen H., Musuku B., Kinnunen P. 2019. First insight to the microbial communities in the plant process water of the multi-metal Kevitsa mine. Proceedings of International Biohydrometallurgy Symposium 2019. Fukuoka, Japan.
7. Di Noi, C., A. Ciroth (2018) The Importance of a Three-dimension Approach in LCA. A Screening Study on Mining addressing Environmental, Social and Cost Aspects LCA XVIII Conference (ACLCA) Fort Collins, Colorado, September 25th-27th 2018.
8. Di Noi, C., A. Ciroth, M. Rääkönen, S. Horn, R. Molarius (2019) The experience of two European projects on how to combine social, environmental, and economic values in mining. SETAC EUROPE 29th ANNUAL MEETING 26-30 May 2019 | Helsinki, Finland
9. Di Noi, C., Franziska Eisfeldt , Andreas Ciroth (2018) Sustainable mining: how to quantify social issues in the mining industry and metals supply chain. 70th LCA Discussion Forum , ETH Zürich Social LCA – Challenges and solutions in application and implementation. November 22, 2018.
10. Dzingai, M (2019) The effect of ion accumulation owing to water recycling on flotation performance, Mathew Dzingai, MSc Thesis Univ. Cape Town.
(<https://open.uct.ac.za/handle/11427/31601>)

11. Falah, M; Obenaus-Emler, R; Ohenoja K; Kinnunen, P; Illikainen, M; New Composites of Alkali Activated Mine Tailings using Sub-Micron Mine Tailings, 2020, Construction and Building Materials
<https://www.sciencedirect.com/science/article/pii/S0950061820306644>
12. Falah, M; Obenaus-Emler, R; Kinnunen, P; Illikainen, M; Alkali Activating of Low-Alumina Mine Tailings for more Sustainable Raw Material Supply, 2020, International Journal of Mining and Mineral Engineering, 2019
<https://www.inderscienceonline.com/doi/pdf/10.1504/IJMME.2019.104450>.
13. Falah M, Obenaus-Emler R, Kinnunen P, Illikainen M. Effects of Activator Properties and Curing Conditions on Alkali-Activation of Low-Alumina Mine Tailings. Waste and Biomass Valorization, 2019.
<https://doi.org/10.1007/s12649-019-00781-z>.
14. Falaha, M., Robert Obenaus-Emlerb, Paivo Kinnunena, Mirja Illikainen (2019) Alkali activation of low-alumina mine tailings for more sustainable raw material supply. Proceedings of the 14th International Symposium of Continuous Surface Mining, ISCSM2018
15. Gafiullina, A., Vehmaanperä, P., Kinarinnen, T., Häkkinen, A. (2020). Pressure filtration properties of sludge generated in the electrochemical treatment of mining waters. Water Research, 115992, available on-line.
<https://doi.org/10.1016/j.watres.2020.115922>
16. Hugo, P., Venter, O., Charikinya, E., Bradshaw, D., Broadhurst, J (2018) An assessment and comparison of water accounting tools for primary mineral beneficiation operations: A phosphate case study. Resources for Future Generations (RFG 2018), Vancouver, Canada, 16-21 June 2018.
17. Hugo, De Waal and Broadhurst, Jennifer (2019) Developing a water accounting and assessment protocol for water management of mining and minerals processing. SAIMM Minerals research showcase, Cape Town, South Africa, 11-12 November 2019.
18. Huttunen-Saarivirta E, Karhu M, Kinnunen P, Pinomaa T and Kivikytö-Reponen P. 2020. Redesign mineral and metal loops. Materia 2/2020: 26-29. (in Finnish)
19. İlkay Bengü Can, Özlem Bıçak, Seda Özçelik, Metin Can, Zafir Ekmekçi (2020) USE OF ION EXCHANGE RESIN FOR PROCESS WATER TREATMENT. SME Annual Conference & Expo 2020. Phoenix, Arizona, 23-26th February.
<https://www.smeannualconference.com/>
20. Kinnunen, P., J. Raatikainen, R. Emler, S. Guignot, A. Ciroth, J. Guimerà, M. Paajanen, K. Heiskanen (2018) TOWARDS CLOSED WATER LOOPS, ADVANCED SORTING AND TAILINGS VALORIZATION FOR MORE SUSTAINABLE RAW MATERIAL SUPPLY. Sustainable Minerals conference, Namibia 2018.
21. Kinnunen, P. R. Obenaus-Emler, J. Raatikainen, S. Guignot, J. Guimerà, A. Ciroth, K. Heiskanen (2020) Review of closed water loops with ore sorting and tailings valorisation for a more sustainable mining industry. Journal of Cleaner Production 278 (2021) 123237. <https://doi.org/10.1016/j.jclepro.2020.123237>

22. Kinnunen, P., Miettinen, H. and Bomberg, M., 2020. Review of Potential Microbial Effects on Flotation. *Minerals*, 10(6), p.533. <https://doi.org/10.3390/min10060533>
23. Kinnunen P. and Miettinen V. Akkumetallit talteen kestävästi. 2020. Submitted to *Materia* (in Finnish).
24. Lassin, A.; D. Thiéry, P. Blanc and S. Guignot Estimating potential emissions from mine tailings: insights from reactive transport modelling. Submitted to *Applied Geochemistry* (Nov 2020).
25. Le, T.M.K., Mikko Mäkelä, Nóra Schreithofer, Olli Dahl, A multivariate approach for evaluation and monitoring of water quality in mining and minerals processing industry, *Minerals Engineering*, Volume 157, 2020, 106582, ISSN 0892-6875, <https://doi.org/10.1016/j.mineng.2020.106582>.
26. Le, T.M.K., M. Mäkelä, N. Schreithofer, O. Dahl Dissolution Test Protocol for Estimating Water Quality Changes in Minerals Processing Plants Operating With Closed Water Circulation *Minerals* 2020, 10(8), 653; <https://doi.org/10.3390/min10080653>
27. Le, T.M.K., Miettinen, H.; Bomberg, M.; Schreithofer, N.; Dahl, O. Challenges in the Assessment of Mining Process Water Quality. *Minerals* 2020, 10(11), 940; <https://doi.org/10.3390/min10110940>.
28. Mamelkina, M. (2020), Treatment of mining waters by electrocoagulation. PhD in Chemical and Process Engineering. LUT School of Engineering Science. LUT UNIVERSITY
29. Mamelkina, M.A, ITERAMS project “Waste Valorisation and Water Treatment?”, MineExchange 2019, Aberystwyth University, 28th – 29th November 2019, Wales
30. Mamelkina, M.A., Vasilyev, F., Tuunila, R., Sillanpää, M., Häkkinen, A. (2019). Investigation of the parameters affecting the treatment of mining waters by electrocoagulation. *Journal of Water Process Engineering*. 32, 100929. <https://doi.org/10.1016/j.jwpe.2019.100929>
31. Mamelkina, M.A., Vehmaanperä, P., Tuunila, R., Sillanpää, M., Häkkinen, A. (2019). Electrochemical treatment of mining waters. International Mine Water Association Conference 2019, July 15-19, Perm, Russia. Conference article. In: Wolkersdorfer, C., Khayrulina, E., Polyakova, S., Bogush, A., ed., Proceedings of a Conference – open access. pp. 212-216, https://www.imwa.info/docs/imwa_2019/IMWA2019_Mamelkina_212.pdf
32. Mamelkina, M.A., Tuunila, R., Häkkinen, A. (2020). Scale-up of Electrochemical Units for Mining Waters Treatment. International Mine Water Association Congress 2020, New Zealand. Conference article. In: Pope, J., Wolkersdorfer, C., Sartz, L., Weber, A., Wolkersdorfer, K., ed., Proceedings of a Conference –open access. pp. 163-168, https://www.imwa.info/docs/imwa_2020/IMWA_2020_proceedings.pdf
33. Mhonde, N. P., N. Schreithofer, K. C. Corin, M. Mäkelä (2019) Assessing the combined effect of water temperature and complex water matrices on xanthate adsorption on chalcopyrite and pentlandite. Flotation 19 conference.
34. Mhonde, N. P., M. Smart, K. Corin, N. Schreithofer Investigating the Electrochemical Interaction of a Thiol Collector with Chalcopyrite and Galena in the Presence of a

- Mixed Microbial Community. *Minerals* 2020, 10(6), 553;
<https://doi.org/10.3390/min10060553>
35. Mhonde, N. P., N. Schreithofer, K. C. Corin, M. Mäkelä Assessing the Combined Effect of Water Temperature and Complex Water Matrices on Xanthate Adsorption Using Multiple Linear Regression. *Minerals*, 2020, 10(9), 733;
<https://doi.org/10.3390/min10090733>
 36. Mhonde, N., L. Pitkänen, K. Corin, N. Schreithofer (2021) The solution interaction of tetrathionate ions and sodium isobutyl xanthate and its effect on the flotation of galena and chalcopyrite. Submitted to *Minerals* in Jan 2021.
 37. Miettinen, H., Bomberg, M., Le, T. M. K., Kinnunen, P., 2020. Identification and metabolism of naturally prevailing microorganisms in zinc and copper minerals processing. *Minerals*, Submitted in December 2020.
 38. Obenaus-Emler, R., M. Falah, M. Illikainen (2019) Assessment of mine tailings as precursors for alkali-activated materials for on-site applications. ICSBM 2019 2nd International Conference of Sustainable Building Materials 12-15 August, Eindhoven The Netherlands.
 39. Obenaus-Emler, R, Falah, M, Illikainen, M, 2020, Assessment of mine tailings as precursors for alkali-activated materials for on-site applications. 2020, Paper selected for special issue in *Construction and Building Materials*.
<https://www.sciencedirect.com/science/article/pii/S095006182030475X>.
 40. October, L.L. K.C. Corin, M.S. Manono, N. Schreithofer and J.G. Wiese (2019) Fundamental and Flotation Techniques Assessing the Effect of Water Quality on Bubble-Particle Attachment of Chalcopyrite and Galena. MEI Flotation 19 conference.
 41. October, L.L., K.C. Corin, M.S. Manono, N. Schreithofer, J.G. Wiese, A fundamental study considering specific ion effects on the attachment of sulfide minerals to air bubbles, *Minerals Engineering*, Volume 151, 2020, 106313, ISSN 0892-6875,
<https://doi.org/10.1016/j.mineng.2020.106313>.
 42. Öztürk, Y. and Zafir Ekmekçi, "Removal of sulfate ions from process water by ion exchange resins", *Minerals Engineering*, Vol 159, December 2020. 106613
 43. Raatikainen, J., R. Emler, S. Guignot, K. Heiskanen, A. Ciroth, J. Guimerà, M. Paajanen, Päivi Kinnunen (2018) Integrated mineral technologies for more sustainable raw material supply (ITERAMS) Watercongress Santiago de Chile, 9-11 May.
 44. Raatikainen, J., R. Emler, S. Guignot, K. Heiskanen, A. Ciroth, J. Guimerà, M. Paajanen, Päivi Kinnunen (2018) Integrated mineral technologies for more sustainable raw material supply (ITERAMS) EU-LA Mining & Exploration Convention and Trade Show, Madrid, April 2018.
 45. Raatikainen, J., N. Pérez (2020) Ore sorting automation for copper mining with advanced XRF technology: From theory to case study. *Automining 2020 Chile - virtual event* in November-December 2020

46. Saari, E., K. Jansson, B. Musuku (2020) The effect of plant process water quality on the flotation of sulphide ore. Submitted to IMPC 2020 conference.
47. Sánchez-Ortega, C., (2019) SOLIDS AND SULFATE IONS REMOVAL FROM MINE WATER BY DISSOLVED AIR FLOTATION. Master's Degree in Chemical and Process Engineering. 87 Pages, 22 Tables and 26 Figures. LUT School of Engineering Science. LUT UNIVERSITY.
48. Tetlow, S. 2020 Considering the effect of degrading water quality on the froth, Sarah Tetlow, MSc Univ Cap Town. (<https://open.uct.ac.za/handle/11427/32375>)

PhD Theses under examination:

October, L. Water quality effects on bubbles and their attachment to sulphide minerals, University of Cape Town.

PhD Theses on-going:

Pieter De Waal, H. Developing a water accounting approach for water management of mining and minerals operations, University of Cape Town.

MSc Theses on-going:

Ndamase, N. Considering the action of degrading water quality on the electrochemical response of sulphide minerals, University of Cape Town.

Charamba, A. Water Quality Impact on flotation Response: A focus on specific ions and temperature, University of Cape Town.

Wabatagore, V. Microbial action in mining water, (co-supervised with Mariette Smart and Sue Harrison) University of Cape Town.