

REFERENCES DR. RALF KAEGI

A. IN PREPARATION

Ralf Kaegi, Matthias Philipp, Thomas D. Bucheli: Detection of microplastic particles (1-10 μ m) in soil matrices. In preparation for Science of the total Environment

Serge Müller, Arnold Müller, Christof Vockenhuber, Hans-Arno Synal, Ralf Kaegi: Elastic recoil detection analysis (ERDA) to assess the photo-oxidation of polymer sheets. In preparation for Analytical Chemistry

Ville Nenonen, Ralf Kaegi, Stephan J. Hug, Jörg Luster, Jörg Göttlicher, Stefan Mangold, Lenny H.E. Winkel, Andreas Voegelin. Effects of organic ligands on structure, phosphate and organic carbon uptake, and colloidal properties of Fe(III)-precipitates formed by Fe(II) oxidation in water, in preparation for GCA

Sebastian Kuehr, Ralf Kaegi, Johannes Rath, Brian Sinnet, Marco Kipf, Matthias Philipp, Mark Rehkämper, Rebekah E. T. Moore, Gloria Young, Karl Andreas Jensen, Anastasia Georgantzopoulou. Time-Efficient Method for environmental transformation of Isotopically Enriched Nanoparticles to Increase the Environmental Relevance of Ecotoxicological Studies. In preparation for STOTEN

B. SUBMITTED

Steffen Kaiser, Hermann Nirschl, Frank Rhein, Ralf Kaegi: Probing surface properties of microplastic particles using magnetic seeded filtration. Submitted to STOTEN and received as back with 'major revisions'

Guillaume Crosset-Perrotin, Mark Wiesner, Michael Sander, Christoph Hueglin, Thomas D. Bucheli, Eberhard Morgenroth and Ralf Kaegi: The Formation of Heteroagglomerates in the Activated Sludge Process Facilitates the Removal of Microplastics, submitted to WR

Dylan Käser, Ralf Kägi, Bodo Hattendorf, Detlef Günther. Fundamental Studies on LA-ICP-MS using Helium, Argon and Nitrogen as Carrier Gas for Direct Introduction of Laser-Generated Aerosols. In preparation for JAAS

C. PEER-REVIEWED ARTICLES

1. Kuehr S, Kaegi R, Rath J, Sinnet B, Kipf M, Rehkämper M, et al. Reduced bioavailability of Au and isotopically enriched ¹⁰⁹Ag nanoparticles transformed through a pilot wastewater treatment plant in *Hyalella azteca* under environmentally relevant exposure scenarios. Sci Total Environ. 2024 Nov 1;949:174768.
2. Galgani F, Lusher AL, Strand J, Haarr ML, Vinci M, Jack EM, et al. Revisiting the strategy for marine litter monitoring within the European marine strategy framework directive (MSFD). Ocean Coastal Manage. 2024 Sep 1;255:107254.

3. Nopp-Mayr U, Layendecker S, Sittenthaler M, Philipp M, Kaegi R, Weinberger I. Microplastic loads in Eurasian otter (*Lutra lutra*) feces-targeting a standardized protocol and first results from an alpine stream, the River Inn. *Environ Monit Assess.* 2024 Aug;196(8):707.
4. Grigg ARC, Notini L, Kaegi R, Thomasarrigo LK, Kretzschmar R. Aluminium substitution affects jarosite transformation to iron oxyhydroxides in the presence of aqueous Fe(II). *Geochim Cosmochim Acta.* 2024 Jun 1;374:72–84.
5. Grigg ARC, Notini L, Kaegi R, Thomasarrigo LK, Kretzschmar R. Structural Effects of Aluminum and Iron Occupancy in Minerals of the Jarosite-Alunite Solid Solution. *ACS Earth Space Chem.* 2024 Jan 25;8(2):194–206.
6. Stetten L, Kaegi R, Hofmann T, von der Kammer F. Depth-dependent transformation of ZnO and Ag nanoparticles in sulfate-reducing sediments tracked using scanning transmission electron microscopy. *Environ Sci-Nano.* 2024 Jan 18;11(1):136–48.
7. la Cecilia D, Philipp M, Kaegi R, Schirmer M, Moeck C. Microplastics attenuation from surface water to drinking water: Impact of treatment and managed aquifer recharge - and identification uncertainties. *Sci Total Environ.* 2024 Jan 15;908:168378.
8. Xu J, Chen C, Hu X, Chen D, Bland G, Wielinski J, et al. Particle-Scale Understanding of Arsenic Interactions with Sulfidized Nanoscale Zerovalent Iron and Their Impacts on Dehalogenation Reactivity. *Environ Sci Technol.* 2023 Dec 13;57(51):21917–26.
9. Sodnikar K, Kaegi R, Christl I, Schroth MH, Sander M. Transport of double-stranded ribonucleic acids (dsRNA) and deoxyribonucleic acids (DNA) in sand and iron oxide-coated sand columns under varying solution chemistries. *Environ Sci-Process Impacts.* 2023 Dec 13;25(12):2067–80.
10. V. Nenonen V, Kaegi R, Hug SJ, Gottlicher J, Mangold S, Winkel LHE, et al. Formation and transformation of Fe(III)- and Ca-precipitates in aqueous solutions and effects on phosphate retention over time. *Geochim Cosmochim Acta.* 2023 Nov 1;360:207–30.
11. Kubeneck L, ThomasArrigo L, Rothwell K, Kaegi R, Kretzschmar R. Competitive incorporation of Mn and Mg in vivianite at varying salinity and effects on crystal structure and morphology. *GEOCHIMICA ET COSMOCHIMICA ACTA.* 2023 Apr 1;346:231–44.
12. Ballikaya P, Brunner I, Coccozza C, Grolimund D, Kaegi R, Murazzi M, et al. Nanoparticles Are Everywhere, Even Inside Trees. *CHIMIA.* 2023 Apr;77(4):256–256.
13. Ballikaya P, Brunner I, Coccozza C, Grolimund D, Kaegi R, Murazzi M, et al. First evidence of nanoparticle uptake through leaves and roots in beech (*Fagus sylvatica* L.) and pine (*Pinus sylvestris* L.). *TREE PHYSIOLOGY.* 2023 Feb 4;43(2):262–76.
14. Gottschalk F, Debray B, Klaessig F, Park B, Lacombe J, Vignes A, et al. Predicting accidental release of engineered nanomaterials to the environment. *NATURE NANOTECHNOLOGY.* 2023 Feb 2;
15. Rhein F, Nirschl H, Kaegi R. Separation of Microplastic Particles from Sewage Sludge Extracts Using Magnetic Seeded Filtration. *WATER RESEARCH X.* 2022 Dec 1;17.
16. Stetten L, Hofmann T, Proux O, Landrot G, Kaegi R, von der Kammer F. Transformation of zinc oxide nanoparticles in freshwater sediments under oxic and anoxic conditions. *ENVIRONMENTAL SCIENCE-NANO.* 2022 Nov 10;9(11):4255–67.

17. Grigg A, ThomasArrigo L, Schulz K, Rothwell K, Kaegi R, Kretzschmar R. Ferrihydrite transformations in flooded paddy soils: rates, pathways, and product spatial distributions. ENVIRONMENTAL SCIENCE-PROCESSES & IMPACTS. 2022 Oct 19;24(10):1867–82.
18. Notini L, ThomasArrigo L, Kaegi R, Kretzschmar R. Coexisting Goethite Promotes Fe(II)-Catalyzed Transformation of Ferrihydrite to Goethite. ENVIRONMENTAL SCIENCE & TECHNOLOGY. 2022 Sep 6;56(17):12723–33.
19. Philipp M, Bucheli TD, Kaegi R. The use of surrogate standards as a QA/QC tool for routine analysis of microplastics in sewage sludge. Science of The Total Environment. 2022 Aug 20;835:155485.
20. Pulido-Reyes G, Magherini L, Bianco C, Sethi R, von Gunten U, Kaegi R, et al. Nanoplastics removal during drinking water treatment: Laboratory- and pilot-scale experiments and modeling. JOURNAL OF HAZARDOUS MATERIALS. 2022 Aug 15;436.
21. Szakas S, Lancaster R, Kaegi R, Gundlach-Graham A. Quantification and classification of engineered, incidental, and natural cerium-containing particles by spICP-TOFMS. ENVIRONMENTAL SCIENCE-NANO. 2022 May 19;9(5):1627–38.
22. Schulz K, ThomasArrigo L, Kaegi R, Kretzschmar R. Stabilization of Ferrihydrite and Lepidocrocite by Silicate during Fe(II)-Catalyzed Mineral Transformation: Impact on Particle Morphology and Silicate Distribution. ENVIRONMENTAL SCIENCE & TECHNOLOGY. 2022 May 3;56(9):5929–38.
23. Murazzi M, Cherubini P, Brunner I, Kagi R, Saurer M, Ballikaya P, et al. Can forest trees take up and transport nanoplastics? IFOREST-BIOGEOSCIENCES AND FORESTRY. 2022 Apr;15:128–32.
24. Schwarzfischer M, Niechcial A, Lee SS, Sinnet B, Wawrzyniak M, Laimbacher A, et al. Ingested nano- and microsized polystyrene particles surpass the intestinal barrier and accumulate in the body. NanoImpact. 2022 Jan 1;25:100374.
25. Kuehr S, Diehle N, Kaegi R, Schlechtriem C. Ingestion of bivalve droppings by benthic invertebrates may lead to the transfer of nanomaterials in the aquatic food chain. Environ Sci Eur. 2021 Dec;33(1):35.
26. Wielinski J, Gogos A, Voegelin A, Müller CR, Morgenroth E, Kaegi R. Release of gold (Au), silver (Ag) and cerium dioxide (CeO₂) nanoparticles from sewage sludge incineration ash. Environ Sci: Nano. 2021 Nov 12;8(11):3220–32.
27. Mehrabi K, Kaegi R, Gunther D, Gundlach-Graham A. Quantification and Clustering of Inorganic Nanoparticles in Wastewater Treatment Plants across Switzerland#. CHIMIA. 2021 Aug;75(7–8):642–6.
28. Mehrabi K, Kaegi R, Günther D, Gundlach-Graham A. Emerging investigator series: automated single-nanoparticle quantification and classification: a holistic study of particles into and out of wastewater treatment plants in Switzerland. Environ Sci: Nano. 2021 May 20;8(5):1211–25.
29. Kaegi R, Gogos A, Voegelin A, Hug SJ, Winkel LHE, Buser AM, et al. Quantification of individual Rare Earth Elements from industrial sources in sewage sludge. Water Research X. 2021 May 1;11:100092.
30. Kuehr S, Kaegi R, Maletzki D, Schlechtriem C. Testing the bioaccumulation potential of manufactured nanomaterials in the freshwater amphipod *Hyalella azteca*. CHEMOSPHERE. 2021 Jan;263.

31. Wielinski J, Voegelin A, Grobety B, Mueller CR, Morgenroth E, Kaegi R. Transformation of TiO₂ (nano)particles during sewage sludge incineration. *Journal of Hazardous Materials*. 2021;accepted.
32. Kaegi R, Fierz M, Hattendorf B. Quantification of Nanoparticles in Dispersions using Transmission Electron Microscopy. *Microscopy and Microanalysis*. 2021;revisions submitted.
33. Etique M, Bouchet S, Byrne JM, Thomasarrigo LK, Kaegi R, Kretzschmar R. Mercury reduction by nanoparticulate vivianite. *Environ Sci Technol*. 2021;55(5):3399–407.
34. Al-Sid-Cheikh M, Rowland SJ, Kaegi R, Henry TB, Cormier MA, Thompson RC. Synthesis of 14 C-labelled polystyrene nanoplastics for environmental studies. *Communications Materials*. 2020 Dec 4;1(1):1–8.
35. Wigger H, Kagi R, Wiesner M, Nowack B. Exposure and Possible Risks of Engineered Nanomaterials in the Environment-Current Knowledge and Directions for the Future. *REVIEWS OF GEOPHYSICS*. 2020 Dec;58(4).
36. ThomasArrigo LK, Bouchet S, Kaegi R, Kretzschmar R. Organic matter influences transformation products of ferrihydrite exposed to sulfide. *Environ-Sci Nano*. 2020 Nov 1;7(11):3405–18.
37. Xu J, Avellan A, Li H, Clark E, Henkelman G, Kaegi R, et al. Iron and Sulfur Precursors Affect Crystalline Structure, Speciation, and Reactivity of Sulfidized Nanoscale Zerovalent Iron. *ENVIRONMENTAL SCIENCE & TECHNOLOGY*. 2020 Oct 20;54(20):13294–303.
38. Urstoeger A, Wimmer A, Kaegi R, Reiter S, Schuster M. Looking at Silver-Based Nanoparticles in Environmental Water Samples: Repetitive Cloud Point Extraction Bridges Gaps in Electron Microscopy for Naturally Occurring Nanoparticles. *ENVIRONMENTAL SCIENCE & TECHNOLOGY*. 2020 Oct 6;54(19):12063–71.
39. Svendsen C, Walker L, Matzke M, Lahive E, Harrison S, Crossley A, et al. Key principles and operational practices for improved nanotechnology environmental exposure assessment. *NATURE NANOTECHNOLOGY*. 2020 Sep;15(9):731–42.
40. Hagemann N, Schmidt H, Kagi R, Bohler M, Sigmund G, Maccagnan A, et al. Wood-based activated biochar to eliminate organic micropollutants from biologically treated wastewater. *SCIENCE OF THE TOTAL ENVIRONMENT*. 2020 Aug 15;730.
41. Velimirovic M, Wagner S, Monikh FA, Uusimaeki T, Kaegi R, Hofmann T, et al. Accurate quantification of TiO₂ nanoparticles in commercial sunscreens using standard materials and orthogonal particle sizing methods for verification. *Talanta*. 2020 Aug 1;215:120921.
42. Suess E, Berg M, Bouchet S, Cayo L, Hug S, Kaegi R, et al. Mercury loads and fluxes from wastewater: A nationwide survey in Switzerland. *WATER RESEARCH*. 2020 May 15;175.
43. Hoffmann K, Bouchet S, Christl I, Kaegi R, Kretzschmar R. Effect of NOM on copper sulfide nanoparticle growth, stability, and oxidative dissolution. *ENVIRONMENTAL SCIENCE-NANO*. 2020 Apr 1;7(4):1163–78.
44. Xu J, Avellan A, Li H, Liu X, Noel V, Lou Z, et al. Sulfur Loading and Speciation Control the Hydrophobicity, Electron Transfer, Reactivity, and Selectivity of Sulfidized Nanoscale Zerovalent Iron. *ADVANCED MATERIALS*. 2020 Apr;32(17).

45. Zeumer R, Hermsen L, Kaegi R, Kuehr S, Knopf B, Schlechtriem C. Bioavailability of silver from wastewater and planktonic food borne silver nanoparticles in the rainbow trout *Oncorhynchus mykiss*. *Sci Total Environ*. 2020 Mar 1;706:135695.
46. Wielinski J, Marafatto F, Gogos A, Scheidegger A, Voegelin A, Muller C, et al. Synchrotron hard X-ray chemical imaging of trace element speciation in heterogeneous samples: development of criteria for uncertainty analysis. *JOURNAL OF ANALYTICAL ATOMIC SPECTROMETRY*. 2020 Mar 1;35(3):567–79.
47. Geitner NK, Hendren CO, Cornelis G, Kaegi R, Lead JR, Lowry GV, et al. Harmonizing across environmental nanomaterial testing media for increased comparability of nanomaterial datasets. *Environ-Sci Nano*. 2020 Jan 1;7(1):13–36.
48. Mast J, Verleysen E, Hodoroaba V, Kaegi R. Characterization of nanomaterials by transmission electron microscopy: Measurement procedures. Hodoroaba V, Unger W, Shard A, editors. 2020. 29 p. (CHARACTERIZATION OF NANOPARTICLES: MEASUREMENT PROCESSES FOR NANOPARTICLES).
49. Hoffmann K, Christl I, Kaegi R, Kretzschmar R. Effects of natural organic matter (NOM), metal-to-sulfide ratio and Mn²⁺ on cadmium sulfide nanoparticle growth and colloidal stability. *Environ Sci Nano*. 2020;7(11):3385–404.
50. Gogos A, Wielinski J, Voegelin A, Kammer F von der, Kaegi R. Quantification of anthropogenic and geogenic Ce in sewage sludge based on Ce oxidation state and rare earth element patterns. *Waster Research X*. 2020;submitted.
51. Frehland S, Kaegi R, Hufenus R, Mitrano DM. Long-term assessment of nanoplastic particle and microplastic fiber flux through a pilot wastewater treatment plant using metal-doped plastics. submitted to *Waster Research*. 2020;
52. ThomasArrigo L, Kaegi R, Kretzschmar R. Ferrihydrite Growth and Transformation in the Presence of Ferrous Iron and Model Organic Ligands. *ENVIRONMENTAL SCIENCE & TECHNOLOGY*. 2019 Dec 3;53(23):13636–47.
53. Wielinski J, Gogos A, Voegelin A, Muller C, Morgenroth E, Kaegi R. Transformation of Nanoscale and Ionic Cu and Zn during the Incineration of Digested Sewage Sludge (Biosolids). *ENVIRONMENTAL SCIENCE & TECHNOLOGY*. 2019 Oct 15;53(20):11704–13.
54. Aeppli M, Vranic S, Kaegi R, Kretzschmar R, Brown A, Voegelin A, et al. Decreases in Iron Oxide Reducibility during Microbial Reductive Dissolution and Transformation of Ferrihydrite. *ENVIRONMENTAL SCIENCE & TECHNOLOGY*. 2019 Aug 6;53(15):8736–46.
55. Surette M, Nason J, Kaegi R. The influence of surface coating functionality on the aging of nanoparticles in wastewater. *ENVIRONMENTAL SCIENCE-NANO*. 2019 Aug 1;6(8):2470–83.
56. Gogos A, Wielinski J, Voegelin A, Emerich H, Kaegi R. Transformation of cerium dioxide nanoparticles during sewage sludge incineration. *ENVIRONMENTAL SCIENCE-NANO*. 2019 Jun 1;6(6):1765–76.
57. Uusimaeki T, Wagner T, Lipinski H, Kaegi R. AutoEM: a software for automated acquisition and analysis of nanoparticles. *JOURNAL OF NANOPARTICLE RESEARCH*. 2019 Jun;21(6).

58. Xu J, Wang Y, Weng C, Bai W, Jiao Y, Kaegi R, et al. Reactivity, Selectivity, and Long-Term Performance of Sulfidized Nanoscale Zerovalent Iron with Different Properties. ENVIRONMENTAL SCIENCE & TECHNOLOGY. 2019 May 21;53(10):5936–45.
59. Bakshi M, Line C, Bedolla D, Stein R, Kaegi R, Sarret G, et al. Assessing the impacts of sewage sludge amendment containing nano-TiO₂ on tomato plants: A life cycle study. JOURNAL OF HAZARDOUS MATERIALS. 2019 May 5;369:191–8.
60. Aeppli M, Kaegi R, Kretzschmar R, Voegelin A, Hofstetter T, Sander M. Electrochemical Analysis of Changes in Iron Oxide Reducibility during Abiotic Ferrihydrite Transformation into Goethite and Magnetite. ENVIRONMENTAL SCIENCE & TECHNOLOGY. 2019 Apr 2;53(7):3568–78.
61. Zheng Y, Mutzner L, Ort C, Kaegi R, Gottschalk F. Modelling engineered nanomaterials in wet-weather discharges. NANOIMPACT. 2019 Apr;16.
62. Voegelin A, Senn A, Kaegi R, Hug S. Reductive dissolution of As(V)-bearing Fe(III)-precipitates formed by Fe(II) oxidation in aqueous solutions. GEOCHEMICAL TRANSACTIONS. 2019 Mar 22;20.
63. Hoppe M, Schlich K, Wielinski J, Koser J, Ruckamp D, Kaegi R, et al. Long-term outdoor lysimeter study with cerium dioxide nanomaterial. NANOIMPACT. 2019 Feb;14.
64. Pradas del Real A, Castillo-Michel H, Kaegi R, Larue C, de Nolf W, Reyes-Herrera J, et al. Searching for relevant criteria to distinguish natural vs. anthropogenic TiO₂ nanoparticles in soils. ENVIRONMENTAL SCIENCE-NANO. 2018 Dec 1;5(12):2853–63.
65. Gogos A, Voegelin A, Kaegi R. Influence of organic compounds on the sulfidation of copper oxide nanoparticles. ENVIRONMENTAL SCIENCE-NANO. 2018 Nov 1;5(11):2560–9.
66. Wielinski J, Muller C, Voegelin A, Morgenroth E, Kaegi R. Combustion of Sewage Sludge: Kinetics and Speciation of the Combustible. ENERGY & FUELS. 2018 Oct;32(10):10656–67.
67. Kampe S, Kaegi R, Schlich K, Wasmuth C, Hollert H, Schlechtriem C. Silver nanoparticles in sewage sludge: Bioavailability of sulfidized silver to the terrestrial isopod *Porcellio scaber*. ENVIRONMENTAL TOXICOLOGY AND CHEMISTRY. 2018 Jun;37(6):1606–13.
68. Thalmann B, von Gunten U, Kaegi R. Ozonation of municipal wastewater effluent containing metal sulfides and metal complexes: Kinetics and mechanisms. WATER RESEARCH. 2018 May 1;134:170–80.
69. Nowack B, Wiesner M, Kaegi R. State of science in nano and environment. NANOIMPACT. 2018 Apr;10.
70. Senn A, Hug S, Kaegi R, Hering J, Voegelin A. Arsenate co-precipitation with Fe(II) oxidation products and retention or release during precipitate aging. WATER RESEARCH. 2018 Mar 15;131:334–45.
71. Neidhardt H, Winkel L, Kaegi R, Stengel C, Trang P, Lan V, et al. Insights into arsenic retention dynamics of Pleistocene aquifer sediments by in situ sorption experiments. WATER RESEARCH. 2018 Feb 1;129:123–32.
72. Gondikas A, von der Kammer F, Kaegi R, Borovinskaya O, Neubauer E, Navratilova J, et al. Where is the nano? Analytical approaches for the detection and quantification of TiO₂

- engineered nanoparticles in surface waters. ENVIRONMENTAL SCIENCE-NANO. 2018 Feb;5(2):313–26.
73. Giese B, Klaessig F, Park B, Kaegi R, Steinfeldt M, Wigger H, et al. Risks, Release and Concentrations of Engineered Nanomaterial in the Environment. SCIENTIFIC REPORTS. 2018 Jan 25;8.
 74. Ulmer P, Kaegi R, Muntener O. Experimentally Derived Intermediate to Silica-rich Arc Magmas by Fractional and Equilibrium Crystallization at 1.0 GPa: an Evaluation of Phase Relationships, Compositions, Liquid Lines of Descent and Oxygen Fugacity. JOURNAL OF PETROLOGY. 2018 Jan;59(1):11–58.
 75. Vriens B, Voegelin A, Hug S, Kaegi R, Winkel L, Buser A, et al. Quantification of Element Fluxes in Wastewaters: A Nationwide Survey in Switzerland. ENVIRONMENTAL SCIENCE & TECHNOLOGY. 2017 Oct 3;51(19):10943–53.
 76. Kaegi R, Englert A, Gondikas A, Sinnet B, von der Kammer F, Burkhardt M. Release of TiO₂ - (Nano) particles from construction and demolition landfills. NANOIMPACT. 2017 Oct;8:73–9.
 77. Gogos A, Thalmann B, Voegelin A, Kaegi R. Sulfidation kinetics of copper oxide nanoparticles. ENVIRONMENTAL SCIENCE-NANO. 2017 Aug 1;4(8):1733–41.
 78. Senn A, Kaegi R, Hug S, Hering J, Mangold S, Voegelin A. Effect of aging on the structure and phosphate retention of Fe(III)-precipitates formed by Fe(II) oxidation in water. GEOCHIMICA ET COSMOCHIMICA ACTA. 2017 Apr 1;202:341–60.
 79. Auvinen H, Kaegi R, Rousseau D, Du Laing G. Fate of Silver Nanoparticles in Constructed Wetlands-a Microcosm Study. WATER AIR AND SOIL POLLUTION. 2017 Mar;228(3).
 80. Praetorius A, Gundlach-Graham A, Goldberg E, Fabienke W, Navratilova J, Gondikas A, et al. Single-particle multi-element fingerprinting (spMEF) using inductively-coupled plasma time-of-flight mass spectrometry (ICP-TOFMS) to identify engineered nanoparticles against the elevated natural background in soils. ENVIRONMENTAL SCIENCE-NANO. 2017 Feb 1;4(2):307–14.
 81. Meier C, Voegelin A, Pradas del Real A, Sarret G, Mueller C, Kaegi R. Transformation of Silver Nanoparticles in Sewage Sludge during Incineration. ENVIRONMENTAL SCIENCE & TECHNOLOGY. 2016 Apr 5;50(7):3503–10.
 82. Pradas del Real A, Castillo-Michel H, Kaegi R, Sinnet B, Magnin V, Findling N, et al. Fate of Ag-NPs in Sewage Sludge after Application on Agricultural Soils. ENVIRONMENTAL SCIENCE & TECHNOLOGY. 2016 Feb 16;50(4):1759–68.
 83. Thalmann B, Voegelin A, Morgenroth E, Kaegi R. Effect of humic acid on the kinetics of silver nanoparticle sulfidation. ENVIRONMENTAL SCIENCE-NANO. 2016;3(1):203–12.
 84. Kaegi R, Voegelin A, Sinnet B, Zuleeg S, Siegrist H, Burkhardt M. Transformation of AgCl nanoparticles in a sewer system - A field study. SCIENCE OF THE TOTAL ENVIRONMENT. 2015 Dec 1;535:20–7.
 85. Thalmann B, Voegelin A, von Gunten U, Behra R, Morgenroth E, Kaegi R. Effect of Ozone Treatment on Nano-Sized Silver Sulfide in Wastewater Effluent. ENVIRONMENTAL SCIENCE & TECHNOLOGY. 2015 Sep 15;49(18):10911–9.

86. Senn A, Kaegi R, Hug S, Hering J, Mangold S, Voegelin A. Composition and structure of Fe(III)-precipitates formed by Fe(II) oxidation in water at near-neutral pH: Interdependent effects of phosphate, silicate and Ca. *GEOCHIMICA ET COSMOCHIMICA ACTA*. 2015 Aug 1;162:220–46.
87. Hofacker A, Behrens S, Voegelin A, Kaegi R, Losekann-Behrens T, Kappler A, et al. Clostridium Species as Metallic Copper-Forming Bacteria in Soil under Reducing Conditions. *GEOMICROBIOLOGY JOURNAL*. 2015 Feb 7;32(2):130–9.
88. Fedotova N, Kaegi R, Koch J, Gunther D. Influence of dispersion agents on particle size and concentration determined by laser-induced breakdown detection. *SPECTROCHIMICA ACTA PART B-ATOMIC SPECTROSCOPY*. 2015 Jan;103:92–8.
89. Studer C, Aicher L, Gasic B, von Goetz N, Hoet P, Huwylar J, et al. Scientific Basis for Regulatory Decision-Making of Nanomaterials Report on the Workshop, 20-21 January 2014, Center of Applied Ecotoxicology, Dubendorf. *CHIMIA*. 2015;69(1–2):52–6.
90. Grass R, Schalchli J, Paunescu D, Soellner J, Kaegi R, Stark W. Tracking Trace Amounts of Submicrometer Silica Particles in Wastewaters and Activated Sludge Using Silica-Encapsulated DNA Barcodes. *ENVIRONMENTAL SCIENCE & TECHNOLOGY LETTERS*. 2014 Dec;1(12):484–9.
91. Gogos A, Kaegi R, Zenobi R, Bucheli T. Capabilities of asymmetric flow field-flow fractionation coupled to multi-angle light scattering to detect carbon nanotubes in soot and soil. *ENVIRONMENTAL SCIENCE-NANO*. 2014 Dec;1(6):584–94.
92. Kroll A, Behra R, Kaegi R, Sigg L. Extracellular Polymeric Substances (EPS) of Freshwater Biofilms Stabilize and Modify CeO₂ and Ag Nanoparticles. *PLOS ONE*. 2014 Oct 21;9(10).
93. Yang Y, Doudrick K, Bi X, Hristovski K, Herckes P, Westerhoff P, et al. Characterization of Food-Grade Titanium Dioxide: The Presence of Nanosized Particles. *ENVIRONMENTAL SCIENCE & TECHNOLOGY*. 2014 Jun 3;48(11):6391–400.
94. Thalmann B, Voegelin A, Sinnet B, Morgenroth E, Kaegi R. Sulfidation Kinetics of Silver Nanoparticles Reacted with Metal Sulfides. *ENVIRONMENTAL SCIENCE & TECHNOLOGY*. 2014 May 6;48(9):4885–92.
95. Wenk C, Kaegi R, Hug S. Factors affecting arsenic and uranium removal with zerovalent iron: laboratory tests with Kanchan-type iron nail filter columns with different groundwaters. *ENVIRONMENTAL CHEMISTRY*. 2014;11(5):547–57.
96. Voegelin A, Kaegi R, Berg M, Nitzsche K, Kappler A, Lan V, et al. Solid-phase characterisation of an effective household sand filter for As, Fe and Mn removal from groundwater in Vietnam. *ENVIRONMENTAL CHEMISTRY*. 2014;11(5):566–78.
97. Duester L, Burkhardt M, Gutleb A, Kaegi R, Macken A, Meermann B, et al. Toward a comprehensive and realistic risk evaluation of engineered nanomaterials in the urban water system. *FRONTIERS IN CHEMISTRY*. 2014;2.
98. Voegelin A, Senn A, Kaegi R, Hug S, Mangold S. Dynamic Fe-precipitate formation induced by Fe(II) oxidation in aerated phosphate-containing water. *GEOCHIMICA ET COSMOCHIMICA ACTA*. 2013 Sep 15;117:216–31.
99. Wiesner M, Li Q, Burgess J, Kaegi R, Dixon D. Progress towards the responsible application of nanotechnology for water treatment. *WATER RESEARCH*. 2013 Aug 1;47(12):3865–3865.

100. Schwyzer I, Kaegi R, Sigg L, Nowack B. Colloidal stability of suspended and agglomerate structures of settled carbon nanotubes in different aqueous matrices. *WATER RESEARCH*. 2013 Aug 1;47(12):3910–20.
101. Kaegi R, Voegelin A, Ort C, Sinnet B, Thalmann B, Krismer J, et al. Fate and transformation of silver nanoparticles in urban wastewater systems. *WATER RESEARCH*. 2013 Aug 1;47(12):3866–77.
102. Hofacker A, Voegelin A, Kaegi R, Kretzschmar R. Mercury Mobilization in a Flooded Soil by Incorporation into Metallic Copper and Metal Sulfide Nanoparticles. *ENVIRONMENTAL SCIENCE & TECHNOLOGY*. 2013 Jul 16;47(14):7739–46.
103. Neumann A, Kaegi R, Voegelin A, Hussam A, Munir A, Hug S. Arsenic Removal with Composite Iron Matrix Filters in Bangladesh: A Field and Laboratory Study. *ENVIRONMENTAL SCIENCE & TECHNOLOGY*. 2013 May 7;47(9):4544–54.
104. Hofacker A, Voegelin A, Kaegi R, Weber F, Kretzschmar R. Temperature-dependent formation of metallic copper and metal sulfide nanoparticles during flooding of a contaminated soil. *GEOCHIMICA ET COSMOCHIMICA ACTA*. 2013 Feb 15;103:316–32.
105. Schwyzer I, Kaegi R, Sigg L, Smajda R, Magrez A, Nowack B. Long-term colloidal stability of 10 carbon nanotube types in the absence/presence of humic acid and calcium. *ENVIRONMENTAL POLLUTION*. 2012 Oct;169:64–73.
106. Mertens J, Rose J, Kagi R, Chaurand P, Plotze M, Wehrli B, et al. Adsorption of Arsenic on Polyaluminum Granulate. *ENVIRONMENTAL SCIENCE & TECHNOLOGY*. 2012 Jul 3;46(13):7310–7.
107. Hagendorfer H, Kaegi R, Parlinska M, Sinnet B, Ludwig C, Ulrich A. Characterization of Silver Nanoparticle Products Using Asymmetric Flow Field Flow Fractionation with a Multidetector Approach - a Comparison to Transmission Electron Microscopy and Batch Dynamic Light Scattering. *ANALYTICAL CHEMISTRY*. 2012 Mar 20;84(6):2678–85.
108. Sternitzke V, Kaegi R, Audinot J, Lewin E, Hering J, Johnson C. Uptake of Fluoride from Aqueous Solution on Nano-Sized Hydroxyapatite: Examination of a Fluoridated Surface Layer. *ENVIRONMENTAL SCIENCE & TECHNOLOGY*. 2012 Jan 17;46(2):802–9.
109. Hagendorfer H, Kaegi R, Traber J, Mertens S, Scherrers R, Ludwig C, et al. Application of an asymmetric flow field flow fractionation multi-detector approach for metallic engineered nanoparticle characterization - Prospects and limitations demonstrated on Au nanoparticles. *ANALYTICA CHIMICA ACTA*. 2011 Nov 14;706(2):367–78.
110. Bonalumi M, Anselmetti F, Kaegi R, Wuest A. Particle dynamics in high-Alpine proglacial reservoirs modified by pumped-storage operation. *WATER RESOURCES RESEARCH*. 2011 Sep 27;47.
111. Lorenz C, Hagendorfer H, von Goetz N, Kaegi R, Gehrig R, Ulrich A, et al. Nanosized aerosols from consumer sprays: experimental analysis and exposure modeling for four commercial products. *JOURNAL OF NANOPARTICLE RESEARCH*. 2011 Aug;13(8):3377–91.
112. Schwyzer I, Kaegi R, Sigg L, Magrez A, Nowack B. Influence of the initial state of carbon nanotubes on their colloidal stability under natural conditions. *ENVIRONMENTAL POLLUTION*. 2011 Jun;159(6):1641–8.

113. Kaegi R, Voegelin A, Sinnet B, Zuleeg S, Hagendorfer H, Burkhardt M, et al. Behavior of Metallic Silver Nanoparticles in a Pilot Wastewater Treatment Plant. *ENVIRONMENTAL SCIENCE & TECHNOLOGY*. 2011 May 1;45(9):3902–8.
114. Bukowiecki N, Zieger P, Weingartner E, Juranyi Z, Gysel M, Neiningner B, et al. Ground-based and airborne in-situ measurements of the Eyjafjallajökull volcanic aerosol plume in Switzerland in spring 2010. *ATMOSPHERIC CHEMISTRY AND PHYSICS*. 2011;11(19):10011–30.
115. Boller M, Kaegi R. Characterization of Aquatic Particles. VanNieuwenhuijzen A, VanDerGraaf J, editors. 2011. 15 p. (HANDBOOK ON PARTICLE SEPARATION PROCESSES).
116. Kaegi R, Voegelin A, Folini D, Hug S. Effect of phosphate, silicate, and Ca on the morphology, structure and elemental composition of Fe(III)-precipitates formed in aerated Fe(II) and As(III) containing water. *GEOCHIMICA ET COSMOCHIMICA ACTA*. 2010 Oct 15;74(20):5798–816.
117. Mikutta C, Frommer J, Voegelin A, Kaegi R, Kretzschmar R. Effect of citrate on the local Fe coordination in ferrihydrite, arsenate binding, and ternary arsenate complex formation. *GEOCHIMICA ET COSMOCHIMICA ACTA*. 2010 Oct 1;74(19):5574–92.
118. Kaegi R, Sinnet B, Zuleeg S, Hagendorfer H, Mueller E, Vonbank R, et al. Release of silver nanoparticles from outdoor facades. *ENVIRONMENTAL POLLUTION*. 2010 Sep;158(9):2900–5.
119. Hagendorfer H, Lorenz C, Kaegi R, Sinnet B, Gehrig R, Goetz N, et al. Size-fractionated characterization and quantification of nanoparticle release rates from a consumer spray product containing engineered nanoparticles. *JOURNAL OF NANOPARTICLE RESEARCH*. 2010 Sep;12(7):2481–94.
120. Glaus R, Kaegi R, Krumeich F, Gunther D. Phenomenological studies on structure and elemental composition of nanosecond and femtosecond laser-generated aerosols with implications on laser ablation inductively coupled plasma mass spectrometry. *SPECTROCHIMICA ACTA PART B-ATOMIC SPECTROSCOPY*. 2010 Sep;65(9–10):812–22.
121. Voegelin A, Kaegi R, Hug S. Formation of short-range-ordered Fe(III)-precipitates by Fe(II) oxidation in water. *GEOCHIMICA ET COSMOCHIMICA ACTA*. 2010 Jun;74(12):A1085–A1085.
122. Mikutta C, Frommer J, Voegelin A, Kaegi R, Kretzschmar R. Effect of citrate on the structure of ferrihydrite, arsenate binding, and ternary complex formation. *GEOCHIMICA ET COSMOCHIMICA ACTA*. 2010 Jun;74(12):A709–A709.
123. Voegelin A, Kaegi R, Frommer J, Vantelon D, Hug S. Effect of phosphate, silicate, and Ca on Fe(III)-precipitates formed in aerated Fe(II)- and As(III)-containing water studied by X-ray absorption spectroscopy. *GEOCHIMICA ET COSMOCHIMICA ACTA*. 2010 Jan 1;74(1):164–86.
124. Latkoczy C, Kagi R, Fierz M, Ritzmann M, Gunther D, Boller M. Development of a mobile fast-screening laser-induced breakdown detection (LIBD) system for field-based measurements of nanometre sized particles in aqueous solutions. *JOURNAL OF ENVIRONMENTAL MONITORING*. 2010;12(7):1422–9.
125. Vernooij M, Mohr M, Tzvetkov G, Zelenay V, Huthwelker T, Kaegi R, et al. On Source Identification and Alteration of Single Diesel and Wood Smoke Soot Particles in the Atmosphere; An X-Ray Microspectroscopy Study. *ENVIRONMENTAL SCIENCE & TECHNOLOGY*. 2009 Jul 15;43(14):5339–44.

126. Weber F, Voegelin A, Kaegi R, Kretzschmar R. Contaminant mobilization by metallic copper and metal sulphide colloids in flooded soil. *NATURE GEOSCIENCE*. 2009 Apr;2(4):267–71.
127. Godoi R, Aerts K, Harlay J, Kaegi R, Ro C, Chou L, et al. Organic surface coating on Coccolithophores - *Emiliana huxleyi*: Its determination and implication in the marine carbon cycle. *MICROCHEMICAL JOURNAL*. 2009 Mar;91(2):266–71.
128. Kirchner U, Scheer V, Vogt R, Kagi R. TEM study on volatility and potential presence of solid cores in nucleation mode particles from diesel powered passenger cars. *JOURNAL OF AEROSOL SCIENCE*. 2009 Jan;40(1):55–64.
129. Navarro E, Piccapietra F, Wagner B, Marconi F, Kaegi R, Odzak N, et al. Toxicity of Silver Nanoparticles to *Chlamydomonas reinhardtii*. *ENVIRONMENTAL SCIENCE & TECHNOLOGY*. 2008 Dec 1;42(23):8959–64.
130. Kaegi R, Ulrich A, Sinnet B, Vonbank R, Wichser A, Zuleeg S, et al. Synthetic TiO₂ nanoparticle emission from exterior facades into the aquatic environment. *ENVIRONMENTAL POLLUTION*. 2008 Nov;156(2):233–9.
131. Jermann D, Pronk W, Kagi R, Halbeisen M, Boller M. Influence of interactions between NOM and particles on UF fouling mechanisms. *WATER RESEARCH*. 2008 Aug;42(14):3870–8.
132. Kaegi R, Wagner T, Hetzer B, Sinnet B, Tzuetkov G, Boller M. Size, number and chemical composition of nanosized particles in drinking water determined by analytical microscopy and LIBD. *WATER RESEARCH*. 2008 May;42(10–11):2778–86.
133. Yang T, Holzer L, Kagi R, Winnefeld F, Keller B. In situ nanomanipulators as a tool to separate individual tobermorite crystals for AFM studies. *ULTRAMICROSCOPY*. 2007 Oct;107(10–11):1068–77.
134. Fierz M, Kaegi R, Burtscher H. Theoretical and experimental evaluation of a portable electrostatic TEM sampler. *AEROSOL SCIENCE AND TECHNOLOGY*. 2007 May;41(5):520–8.
135. Lorenzo R, Kaegi R, Gehrig R, Scherrer L, Grobety B, Burtscher H. A thermophoretic precipitator for the representative collection of atmospheric ultrafine particles for microscopic analysis. *AEROSOL SCIENCE AND TECHNOLOGY*. 2007;41(10):934–43.
136. Lorenzo R, Kaegi R, Gehrig R, Grobety B. Particle emissions of a railway line determined by detailed single particle analysis. *ATMOSPHERIC ENVIRONMENT*. 2006 Dec;40(40):7831–41.
137. Kaegi R, Gasser P. Application of the focused ion beam technique in aerosol science: detailed investigation of selected, airborne particles. *JOURNAL OF MICROSCOPY-OXFORD*. 2006 Nov;224:140–5.
138. Godoi R, Potgieter-Vermaak S, De Hoog J, Kaegi R, Grieken R. Substrate selection for optimum qualitative and quantitative single atmospheric particles analysis using nano-manipulation, sequential thin-window electron probe X-ray microanalysis and micro-Raman spectrometry. *SPECTROCHIMICA ACTA PART B-ATOMIC SPECTROSCOPY*. 2006 Apr;61(4):375–88.
139. Mathis U, Mohr M, Kaegi R, Bertola A, Boulouchos K. Influence of diesel engine combustion parameters on primary soot particle diameter. *ENVIRONMENTAL SCIENCE & TECHNOLOGY*. 2005 Mar 15;39(6):1887–92.

140. Mathis U, Kaegi R, Mohr M, Zenobi R. TEM analysis of volatile nanoparticles from particle trap equipped diesel and direct-injection spark-ignition vehicles. *ATMOSPHERIC ENVIRONMENT*. 2004 Aug;38(26):4347–55.
141. Kaegi R. Chemical and morphological analysis of airborne particles at a tunnel construction site. *JOURNAL OF AEROSOL SCIENCE*. 2004 May;35(5):621–32.
142. Fischer S, Lemster K, Kaegi R, Kuebler J, Grobety B. In situ ESEM observation of melting silver and Inconel on an Al₂O₃ powder bed. *JOURNAL OF ELECTRON MICROSCOPY*. 2004;53(4):393–6.
143. Kaegi R, Holzer L. Transfer of a single particle for combined ESEM and TEM analyses. *ATMOSPHERIC ENVIRONMENT*. 2003 Oct;37(31):4353–9.
144. Mavrocordatos D, Kaegi R, Schmatloch V. Fractal analysis of wood combustion aggregates by contact mode atomic force microscopy. *ATMOSPHERIC ENVIRONMENT*. 2002 Dec;36(36–37):5653–60.

D. BOOK CONTRIBUTIONS

Mast, J., Verleysen, E., Hodoroaba, V.-D., and Kaegi, R. (2020) “Chapter 2.1.2 - Characterization of nanomaterials by transmission electron microscopy: Measurement procedures” in V.-D. Hodoroaba, W. E. S. Unger, and A. G. Shard (eds.), *Characterization of Nanoparticles. Micro and Nano Technologies*. Elsevier, 29–48. [online] <http://www.sciencedirect.com/science/article/pii/B9780128141823000043>.

Kaegi, R. (2016) “Chapter 4: Separation and analysis of NP in environmental aqueous samples.” In Xing, B., Vecitis, C., and Senesi, N. (Eds.), *Engineered NP and the Environment, Biophysical Processes and Toxicity*. Hoboken, New Jersey, John Wiley & Sons.