# Andreas Luttge

List of Publications by Year
in descending order

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|---|---|---|---|
| 95 papers | 6,956 citations | 71061 41 h-index | 58549 82 g-index |
| 101 all docs | 101 docs citations | 101 times ranked | 6925 citing authors |

| # | Article | IF | Citations |
|---|---|---|---|
| 1 | Calcium Carbonate Formation and Dissolution. Chemical Reviews, 2007, 107, 342-381. | 23.0 | 862 |
| 2 | Reduction of Graphene Oxide via Bacterial Respiration. ACS Nano, 2010, 4, 4852-4856. | 7.3 | 539 |
| 3 | Variation of Crystal Dissolution Rate Based on a Dissolution Stepwave Model. Science, 2001, 291, 2400-2404. | 6.0 | 425 |
| 4 | Modeling and simulation of cement hydration kinetics and microstructure development. Cement and Concrete Research, 2011, 41, 1257-1278. | 4.6 | 328 |
| 5 | Variation in calcite dissolution rates:. Geochimica Et Cosmochimica Acta, 2003, 67, 1623-1634. | 1.6 | 317 |
| 6 | Arsenic removal by perilla leaf biochar in aqueous solutions and groundwater: An integrated spectroscopic and microscopic examination. Environmental Pollution, 2018, 232, 31-41. | 3.7 | 297 |
| 7 | Inhibitive Properties and Surface Morphology of a Group of Heterocyclic Diazoles as Inhibitors for Acidic Iron Corrosion. Langmuir, 2005, 21, 12187-12196. | 1.6 | 184 |
| 8 | Arsenic removal by Japanese oak wood biochar in aqueous solutions and well water: Investigating arsenic fate using integrated spectroscopic and microscopic techniques. Science of the Total Environment, 2018, 621, 1642-1651. | 3.9 | 175 |
| 9 | How predictable are dissolution rates of crystalline material?. Geochimica Et Cosmochimica Acta, 2012, 98, 177-185. | 1.6 | 169 |
| 10 | Plasmonic Nature of the Terahertz Conductivity Peak in Single-Wall Carbon Nanotubes. Nano Letters, 2013, 13, 5991-5996. | 4.5 | 143 |
| 11 | Interferometric study of the dolomite dissolution: a new conceptual model for mineral dissolution. Geochimica Et Cosmochimica Acta, 2003, 67, 1099-1116. | 1.6 | 140 |
| 12 | Crystal dissolution kinetics and Gibbs free energy. Journal of Electron Spectroscopy and Related Phenomena, 2006, 150, 248-259. | 0.8 | 139 |
| 13 | A Stochastic Treatment of Crystal Dissolution Kinetics. Elements, 2013, 9, 183-188. | 0.5 | 131 |
| 14 | A model for crystal dissolution. European Journal of Mineralogy, 2003, 15, 603-615. | 0.4 | 130 |
| 15 | Variability of crystal surface reactivity: What do we know?. Applied Geochemistry, 2014, 43, 132-157. | 1.4 | 125 |
| 16 | Albite dissolution kinetics as a function of distance from equilibrium: Implications for natural feldspar weathering. Geochimica Et Cosmochimica Acta, 2006, 70, 1402-1420. | 1.6 | 122 |
| 17 | The evaluation of arsenic contamination potential, speciation and hydrogeochemical behaviour in aquifers of Punjab, Pakistan. Chemosphere, 2018, 199, 737-746. | 4.2 | 119 |
| 18 | Mineral dissolution kinetics as a function of distance from equilibrium â€“ New experimental results. Chemical Geology, 2010, 269, 79-88. | 1.4 | 103 |

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|---|---|---|---|
| 19 | Magnesium inhibition of calcite dissolution kinetics. Geochimica Et Cosmochimica Acta, 2006, 70, 583-594. | 1.6 | 98 |
| 20 | Etch pit formation on iron silicate surfaces during siderophore-promoted dissolution. Chemical Geology, 2007, 240, 326-342. | 1.4 | 98 |
| 21 | Manganese(II) Oxide Nanohexapods:â€‰ Insight into Controlling the Form of Nanocrystals. Chemistry of Materials, 2006, 18, 1821-1829. | 3.2 | 88 |
| 22 | Iron Phosphide Nanostructures Produced from a Single-Source Organometallic Precursor:â€‰ Nanorods, Bundles, Crosses, and Spherulites. Nano Letters, 2007, 7, 2920-2925. | 4.5 | 87 |
| 23 | Mineralogical approaches to fundamental crystal dissolution kinetics. American Mineralogist, 2004, 89, 527-540. | 0.9 | 84 |
| 24 | Etch pit coalescence, surface area, and overall mineral dissolution rates. American Mineralogist, 2005, 90, 1776-1783. | 0.9 | 75 |
| 25 | Direct Observation of Microbial Inhibition of Calcite Dissolution. Applied and Environmental Microbiology, 2004, 70, 1627-1632. | 1.4 | 73 |
| 26 | A comparison of vertical scanning interferometry (VSI) and atomic force microscopy (AFM) for characterizing membrane surface topography. Journal of Membrane Science, 2006, 278, 410-417. | 4.1 | 70 |
| 27 | Kinetic Monte Carlo Approach To Study Carbonate Dissolution. Journal of Physical Chemistry C, 2016, 120, 6482-6492. | 1.5 | 70 |
| 28 | Nanoparticle Shape Conservation in the Conversion of MnO Nanocrosses into Mn3O4. Chemistry of Materials, 2007, 19, 1369-1375. | 3.2 | 64 |
| 29 | Multiple length-scale kinetics: an integrated study of calcite dissolution rates and strontium inhibition. Numerische Mathematik, 2005, 305, 119-146. | 0.7 | 57 |
| 30 | Beyond the conventional understanding of waterâ€“rock reactivity. Earth and Planetary Science Letters, 2017, 457, 100-105. | 1.8 | 57 |
| 31 | Theoretical approach to evaluating plagioclase dissolution mechanisms. Geochimica Et Cosmochimica Acta, 2009, 73, 2832-2849. | 1.6 | 54 |
| 32 | The effect of crystal size variation on the rate of dissolution â€“ A kinetic Monte Carlo study. Geochimica Et Cosmochimica Acta, 2017, 212, 167-175. | 1.6 | 53 |
| 33 | Single-crystal plagioclase feldspar dissolution rates measured by vertical scanning interferometry. American Mineralogist, 2004, 89, 51-56. | 0.9 | 49 |
| 34 | Converged surface roughness parameters A new tool to quantify rock surface morphology and reactivity alteration. Numerische Mathematik, 2007, 307, 955-973. | 0.7 | 48 |
| 35 | Retention of Latex Colloids on Calcite as a Function of Surface Roughness and Topography. Langmuir, 2010, 26, 4743-4752. | 1.6 | 48 |
| 36 | Direct Measurement of Surface Dissolution Rates in Potential Nuclear Waste Forms: The Example of Pyrochlore. ACS Applied Materials & Interfaces, 2015, 7, 17857-17865. | 4.0 | 48 |

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|---|---|---|---|
| 37 | Calcite and dolomite dissolution rates in the context of microbe?mineral surface interactions. Geobiology, 2007, 5, 191-205. | 1.1 | 47 |
| 38 | Shape control of new Fe<sub>x</sub>Oâ€“Fe<sub>3</sub>O<sub>4</sub>and Fe<sub>1â€“y</sub>Mn<sub>y</sub>Oâ€“Fe<sub>3â€“z</sub>Mn<sub>z</sub> nanostructures. Advanced Functional Materials, 2008, 18, 1661-1667. | 7.8 | 47 |
| 39 | A comprehensive stochastic model of phyllosilicate dissolution: Structure and kinematics of etch pits formed on muscovite basal face. Geochimica Et Cosmochimica Acta, 2013, 120, 545-560. | 1.6 | 47 |
| 40 | Kinetic inhibition of calcite (104) dissolution by aqueous manganese(II). Journal of Crystal Growth, 2007, 307, 116-125. | 0.7 | 44 |
| 41 | Reactions at Surfaces: A New Approach Integrating Interferometry and Kinetic Simulations. Journal of the American Ceramic Society, 2010, 93, 3519-3530. | 1.9 | 43 |
| 42 | Kinetic concepts for quantitative prediction of fluid-solid interactions. Chemical Geology, 2019, 504, 216-235. | 1.4 | 42 |
| 43 | Aluminosilicate Dissolution Kinetics:Â A General Stochastic Model. Journal of Physical Chemistry B, 2008, 112, 1736-1742. | 1.2 | 41 |
| 44 | Kinetic Monte Carlo Simulations of Silicate Dissolution: Model Complexity and Parametrization. Journal of Physical Chemistry C, 2013, 117, 24894-24906. | 1.5 | 38 |
| 45 | Variability of Zinc Oxide Dissolution Rates. Environmental Science & Technology, 2017, 51, 4297-4305. | 4.6 | 37 |
| 46 | Pulsating dissolution of crystalline matter. Proceedings of the National Academy of Sciences of the United States of America, 2018, 115, 897-902. | 3.3 | 37 |
| 47 | Inherited control of crystal surface reactivity. Applied Geochemistry, 2018, 91, 140-148. | 1.4 | 36 |
| 48 | Gypsum Precipitation under Saline Conditions: Thermodynamics, Kinetics, Morphology, and Size Distribution. Minerals (Basel, Switzerland), 2021, 11, 141. | 0.8 | 35 |
| 49 | Kinetic Justification of the Solubility Product:Â Application of a General Kinetic Dissolution Model. Journal of Physical Chemistry B, 2005, 109, 1635-1642. | 1.2 | 34 |
| 50 | Morphological evolution of dissolving feldspar particles with anisotropic surface kinetics and implications for dissolution rate normalization and grain size dependence: A kinetic modeling study. Geochimica Et Cosmochimica Acta, 2009, 73, 6757-6770. | 1.6 | 34 |
| 51 | Fluorite dissolution at acidic pH: In situ AFM and ex situ VSI experiments and Monte Carlo simulations. Geochimica Et Cosmochimica Acta, 2010, 74, 4298-4311. | 1.6 | 33 |
| 52 | Does the stepwave model predict mica dissolution kinetics?. Geochimica Et Cosmochimica Acta, 2012, 97, 120-130. | 1.6 | 32 |
| 53 | Incongruent dissolution of wollastonite measured with vertical scanning interferometry. American Mineralogist, 2006, 91, 430-434. | 0.9 | 31 |
| 54 | Temporal Evolution of Calcite Surface Dissolution Kinetics. Minerals (Basel, Switzerland), 2018, 8, 256. | 0.8 | 31 |

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| 55 | Mineralogical approaches to fundamental crystal dissolution kinetics - Dissolution of an A3B structure. European Journal of Mineralogy, 2004, 16, 713-729. | 0.4 | 29 |
| 56 | Mineral surfaces and their implications for microbial attachment: Results from Monte Carlo simulations and direct surface observations. Numerische Mathematik, 2005, 305, 766-790. | 0.7 | 29 |
| 57 | Al,Si order in albite and its effect on albite dissolution processes: A Monte Carlo study. American Mineralogist, 2007, 92, 1316-1324. | 0.9 | 27 |
| 58 | Mechanism and kinetics of the reaction: 1 dolomite + 2 quartz = 1 diopside + 2 CO2: a comparison of rock-sample and of powder experiments. Contributions To Mineralogy and Petrology, 1993, 115, 155-164. | 1.2 | 25 |
| 59 | Oxygen isotope fractionation between fluorphlogopite and calcite: an experimental investigation of temperature dependence and F-/OH- effects. European Journal of Mineralogy, 1994, 6, 53-66. | 0.4 | 25 |
| 60 | An experimental calibration of the temperature dependence of oxygen isotope fractionation between apatite and calcite at high temperatures (350â€“800Â°C). Chemical Geology, 1995, 125, 281-290. | 1.4 | 23 |
| 61 | Interferometric study of pyrite surface reactivity in acidic conditions. American Mineralogist, 2008, 93, 508-519. | 0.9 | 23 |
| 62 | A Statistical Approach for Analysis of Dissolution Rates Including Surface Morphology. Minerals (Basel, Switzerland), 2019, 9, 458. | 0.8 | 23 |
| 63 | A kinetic model of metamorphism: an application to siliceous dolomites. Contributions To Mineralogy and Petrology, 2004, 146, 546-565. | 1.2 | 21 |
| 64 | Melting experiments in the systems CaO-MgO-Al2O3-SiO2and MgO-SiO2at 3 to 15 GPa. American Mineralogist, 1998, 83, 491-500. | 0.9 | 20 |
| 65 | Quantifying the relationship between microbial attachment and mineral surface dynamics using vertical scanning interferometry (VSI). Numerische Mathematik, 2005, 305, 727-751. | 0.7 | 18 |
| 66 | Phosphonate mediated surface reaction and reorganization: implications for the mechanism controlling cement hydration inhibition. Chemical Communications, 2005, , 2354. | 2.2 | 18 |
| 67 | Development and validation of vertical scanning interferometry as a novel method for acquiring chondrocyte geometry. Journal of Biomedical Materials Research Part B, 2005, 72A, 83-90. | 3.0 | 17 |
| 68 | The role of crystal heterogeneity in alkali feldspar dissolution kinetics. Geochimica Et Cosmochimica Acta, 2021, 309, 329-351. | 1.6 | 17 |
| 69 | Calculation of fluid fluxes in Earthâ€™s crust. Geochimica Et Cosmochimica Acta, 2001, 65, 1161-1185. | 1.6 | 16 |
| 70 | Relationship between Micrometer to Submicrometer Surface Roughness and Topography Variations of Natural Iron Oxides and Trace Element Concentrations. Langmuir, 2008, 24, 3250-3266. | 1.6 | 16 |
| 71 | Fundamental Controls of Dissolution Rate Spectra: Comparisons of Model and Experimental Results. Procedia Earth and Planetary Science, 2013, 7, 537-540. | 0.6 | 16 |
| 72 | Lateral Resolution Enhancement of Vertical Scanning Interferometry by Sub-Pixel Sampling. Microscopy and Microanalysis, 2014, 20, 90-98. | 0.2 | 15 |

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| 73 | Crystal Dissolution Kinetics Studied by a Combination of Monte Carlo and Voronoi Methods. Minerals (Basel, Switzerland), 2018, 8, 133. | 0.8 | 14 |
| 74 | Interferometric observations and kinetic modeling of the chemical cleaning of humic materials deposited on membranes. Journal of Membrane Science, 2008, 313, 127-134. | 4.1 | 13 |
| 75 | Microorganisms, mineral surfaces, and aquatic environments: Learning from the past for future progress. Geobiology, 2008, 6, 201-213. | 1.1 | 12 |
| 76 | Calcite Dissolution Kinetics. Aquatic Geochemistry, 2015, 21, 415-422. | 1.5 | 12 |
| 77 | Towards a consistent rate law: glass corrosion kinetics near saturation. Geological Society Special Publication, 2004, 236, 579-594. | 0.8 | 11 |
| 78 | Correlation between sub-micron surface roughness of iron oxide encrustations and trace element concentrations. Science of the Total Environment, 2009, 407, 4703-4710. | 3.9 | 11 |
| 79 | Kinetics of pipeline steel corrosion studied by Raman spectroscopy-coupled vertical scanning interferometry. Npj Materials Degradation, 2018, 2, . | 2.6 | 11 |
| 80 | Characterization of fibroblast morphology on bioactive surfaces using vertical scanning interferometry. Matrix Biology, 2006, 25, 523-533. | 1.5 | 9 |
| 81 | In search of the microbe/mineral interface: quantitative analysis of bacteria on metal surfaces using vertical scanning interferometry. Geobiology, 2008, 6, 254-262. | 1.1 | 9 |
| 82 | Multiscale investigation of olivine (0 1 0) face dissolution from a surface control perspective. Applied Surface Science, 2021, 549, 149317. | 3.1 | 9 |
| 83 | Simultaneous Interferometric Measurement of Corrosive or Demineralizing Bacteria and Their Mineral Interfaces. Applied and Environmental Microbiology, 2009, 75, 1445-1449. | 1.4 | 8 |
| 84 | Mineral Dissolution Kinetics: Pathways to Equilibrium. ACS Earth and Space Chemistry, 2021, 5, 1657-1673. | 1.2 | 8 |
| 85 | Influence of chemical zoning on sandstone calcite cement dissolution: The case of manganese and iron. Chemical Geology, 2021, 559, 119952. | 1.4 | 7 |
| 86 | A modeling approach for unveiling adsorption of toxic ions on iron oxide nanocrystals. Journal of Hazardous Materials, 2021, 417, 126005. | 6.5 | 7 |
| 87 | Vertical Scanning Interferometry: Super-Resolution and in Situ Capabilities for the Studies of Gashydrates. Energy Exploration and Exploitation, 2003, 21, 329-332. | 1.1 | 6 |
| 88 | Midinfrared third-harmonic generation from macroscopically aligned ultralong single-wall carbon nanotubes. Physical Review B, 2013, 87, . | 1.1 | 6 |
| 89 | Discrimination of Ceramic Surface Finishing by Vertical Scanning Interferometry. Archaeometry, 2019, 61, 31-42. | 0.6 | 6 |
| 90 | Experimental techniques for cement hydration studies. Studia Universitatis Babes-Bolyai, Geologia, 2011, 56, 3-15. | 1.0 | 5 |

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| 91 | Influence of Processing Route on the Surface Reactivity of Cu47Ti33Zr11Ni6Sn2Si1 Metallic Glass. Metals, 2021, 11, 1173. | 1.0 | 5 |
| 92 | Crystal dissolution kinetics studied by vertical scanning interferometry and Monte Carlo simulations: A brief review and outlook. Nanostructure Science and Technology, 2004, , 209-247. | 0.1 | 5 |
| 93 | Influence of Muscovite (001) Surface Nanotopography on Radionuclide Adsorption Studied by Kinetic Monte Carlo Simulations. Minerals (Basel, Switzerland), 2021, 11, 468. | 0.8 | 4 |
| 94 | CO2-H2O fluid inclusions in forsterite: An experimental study. European Journal of Mineralogy, 1996, 8, 997-1014. | 0.4 | 4 |
| 95 | A Kinetic Monte Carlo Approach to Model Barite Dissolution: The Role of Reactive Site Geometry. Minerals (Basel, Switzerland), 2022, 12, 639. | 0.8 | 3 |