# Steven R Higgins

List of Publications by Year
in descending order



| | | | |
|---|---|---|---|
| 40 papers | 1,938 citations | 331670 21 h-index | 315739 38 g-index |
| 42 all docs | 42 docs citations | 42 times ranked | 2247 citing authors |

| # | Article | IF | Citations |
|---|---|---|---|
| 1 | Thermal decomposition (pyrolysis) of urea in an open reaction vessel. Thermochimica Acta, 2004, 424, 131-142. | 2.7 | 688 |
| 2 | The structure of hematite (Î±-Fe2O3) (001) surfaces in aqueous media: scanning tunneling microscopy and resonant tunneling calculations of coexisting O and Fe terminations. Geochimica Et Cosmochimica Acta, 2003, 67, 985-1000. | 3.9 | 125 |
| 3 | Dissolution kinetics of magnesite in acidic aqueous solution, a hydrothermal atomic force microscopy (HAFM) study: step orientation and kink dynamics. Geochimica Et Cosmochimica Acta, 2001, 65, 4257-4266. | 3.9 | 81 |
| 4 | Point of zero charge of a corundum-water interface probed with optical second harmonic generation (SHG) and atomic force microscopy (AFM): New approaches to oxide surface charge. Geochimica Et Cosmochimica Acta, 2001, 65, 3055-3063. | 3.9 | 77 |
| 5 | A hydrothermal atomic force microscope for imaging in aqueous solution up to 150â€‰Â°C. Review of Scientific Instruments, 1998, 69, 2994-2998. | 1.3 | 72 |
| 6 | Acidic dissolution of plagioclase: in-situ observations by hydrothermal atomic force microscopy. Geochimica Et Cosmochimica Acta, 1999, 63, 3183-3191. | 3.9 | 72 |
| 7 | Chemical Force Spectroscopy Evidence Supporting the Layer-by-Layer Model of Organic Matter Binding to Iron (oxy)Hydroxide Mineral Surfaces. Environmental Science & Technology, 2015, 49, 9733-9741. | 10.0 | 68 |
| 8 | Self-limiting growth on dolomite: Experimental observations with in situ atomic force microscopy. Geochimica Et Cosmochimica Acta, 2005, 69, 2085-2094. | 3.9 | 56 |
| 9 | Dissolution kinetics of magnesite in acidic aqueous solution: a hydrothermal atomic force microscopy study assessing step kinetics and dissolution flux. Geochimica Et Cosmochimica Acta, 2002, 66, 3201-3210. | 3.9 | 54 |
| 10 | Kink Dynamics and Step Growth on Barium Sulfate (001):Â A Hydrothermal Scanning Probe Microscopy Study. Journal of Physical Chemistry B, 2000, 104, 6978-6982. | 2.6 | 53 |
| 11 | Dissolution Kinetics of the Barium Sulfate (001) Surface by Hydrothermal Atomic Force Microscopy. Langmuir, 1998, 14, 4967-4971. | 3.5 | 49 |
| 12 | Effects of crystal orientation on the dissolution of calcite by chemical and microscopic analysis. Chemical Geology, 2013, 360-361, 10-21. | 3.3 | 48 |
| 13 | Dissolution kinetics of calcite at 50â€“70Â°C: An atomic force microscopic study under near-equilibrium conditions. Geochimica Et Cosmochimica Acta, 2010, 74, 4285-4297. | 3.9 | 47 |
| 14 | Dissolution of the periclase (001) surface; a scanning force microscope study. American Mineralogist, 1999, 84, 144-151. | 1.9 | 39 |
| 15 | Effects of magnesium ions on near-equilibrium calcite dissolution: Step kinetics and morphology. Geochimica Et Cosmochimica Acta, 2011, 75, 719-733. | 3.9 | 36 |
| 16 | Hydrothermal atomic force microscopy observations of barite step growth rates as a function of the aqueous barium-to-sulfate ratio. Geochimica Et Cosmochimica Acta, 2016, 183, 1-13. | 3.9 | 33 |
| 17 | Growth and dissolution kinetics at the dolomite-water interface: An in-situ scanning probe microscopy study. American Mineralogist, 2005, 90, 963-968. | 1.9 | 31 |
| 18 | Magnesite Step Growth Rates as a Function of the Aqueous Magnesium:Carbonate Ratio. Crystal Growth and Design, 2014, 14, 6033-6040. | 3.0 | 28 |

| # | Article | IF | Citations |
|---|---|---|---|
| 19 | Chemical dissolution of the galena (001) surface observed using electrochemical scanning tunneling microscopy. Geochimica Et Cosmochimica Acta, 1996, 60, 3067-3073. | 3.9 | 25 |
| 20 | Unraveling the Effects of Strontium Incorporation on Barite Growthâ€"In Situ and Ex Situ Observations Using Multiscale Chemical Imaging. Crystal Growth and Design, 2018, 18, 5521-5533. | 3.0 | 23 |
| 21 | X-ray photoelectron spectroscopic studies of dolomite surfaces exposed to undersaturated and supersaturated aqueous solutions. Geochimica Et Cosmochimica Acta, 2006, 70, 3342-3350. | 3.9 | 21 |
| 22 | Dissolution Kinetics, Step and Surface Morphology of Magnesite (104) Surfaces in Acidic Aqueous Solution at 60 Â°C by Atomic Force Microscopy under Defined Hydrodynamic Conditions. Journal of Physical Chemistry B, 2002, 106, 6696-6705. | 2.6 | 20 |
| 23 | Friction characteristics of Cd-rich carbonate films on calcite surfaces: implications for compositional differentiation at the nanometer scale. Geochemical Transactions, 2009, 10, 7. | 0.7 | 19 |
| 24 | Dissolution Kinetics and Mechanisms at Dolomiteâ€"Water Interfaces: Effects of Electrolyte Specific Ionic Strength. Environmental Science & Technology, 2013, 47, 110-118. | 10.0 | 18 |
| 25 | Growth kinetics of step edges on celestite (0 0 1) surfaces as a function of temperature, saturation state, ionic strength, and aqueous strontium:sulfate ratio: An in-situ atomic force microscopy study. Geochimica Et Cosmochimica Acta, 2016, 175, 222-238. | 3.9 | 18 |
| 26 | Investigation of growth, coverage and effectiveness of plasma assisted nano-films of fluorocarbon. Applied Surface Science, 2006, 252, 5676-5686. | 6.1 | 17 |
| 27 | Near molecular-scale growth of natural minerals: Experimental methods and errors in length-dependent step speeds with scanning probe microscopy. Journal of Electron Spectroscopy and Related Phenomena, 2006, 150, 235-247. | 1.7 | 15 |
| 28 | Dissolution kinetics and topographic relaxation on celestite (001) surfaces: The effect of solution saturation state studied using Atomic Force Microscopy. Geochimica Et Cosmochimica Acta, 2008, 72, 759-770. | 3.9 | 15 |
| 29 | Specific surface area of hierarchical graphitic substrates suitable for multi-functional applications. Materials Letters, 2012, 88, 160-163. | 2.6 | 15 |
| 30 | Measuring the Silver Composition of Nanocolloids by Inductively Coupled Plasmaâ€"Optical Emission Spectroscopy: A Laboratory Experiment for Chemistry and Engineering Students. Journal of Chemical Education, 2015, 92, 1061-1065. | 2.3 | 12 |
| 31 | Model nucleation and growth studies of nanoscale oxide coatings suitable for modification of microcellular and nano-structured carbon. Surface and Coatings Technology, 2008, 203, 65-72. | 4.8 | 10 |
| 32 | Using atomic force spectroscopy to study oil/mineral interactions at reservoir temperatures and pressures. Fuel, 2020, 259, 116194. | 6.4 | 10 |
| 33 | Quantitative Lateral Force Microscopy Study of the Dolomite (104)â^'Water Interface. Langmuir, 2007, 23, 8909-8915. | 3.5 | 9 |
| 34 | Response to comment on â€œPoint of zero charge of a corundum-water interface probed with optical second harmonic generation (SHG) and atomic force microscopy (AFM): new approaches to oxide surface chargeâ€• Geochimica Et Cosmochimica Acta, 2003, 67, 321-322. | 3.9 | 8 |
| 35 | Properties of Ca-Rich and Mg-Rich Carbonate Films on Dolomite: Implications for Compositional Surface Mapping with Scanning Force Microscopy. Langmuir, 2010, 26, 4769-4775. | 3.5 | 7 |
| 36 | Hydrothermal Atomic Force Microscopy Investigation of Barite Growth: Role of Spectator Ions in Elementary Step Edge Growth Kinetics and Hillock Morphology. Crystal Growth and Design, 2017, 17, 6085-6095. | 3.0 | 7 |

| # | Article | IF | Citations |
|---|---|---|---|
| 37 | A Raman-Based Imaging Method for Characterizing the Molecular Adsorption and Spatial Distribution of Silver Nanoparticles on Hydrated Mineral Surfaces. Environmental Science & Technology, 2018, 52, 2854-2862. | 10.0 | 7 |
| 38 | Strontium incorporation during calcite growth: Implications for chemical mapping using friction force microscopy. Chemical Geology, 2015, 411, 274-282. | 3.3 | 4 |
| 39 | A computer program for automated step edge motion analysis from scanning probe microscopy images. Surface Science, 2009, 603, 1034-1040. | 1.9 | 1 |
| 40 | Experimental Nanomaterials and Nanoscience - An Interdisciplinary Laboratory Course. , 0, , . | | 0 |