

Ulrich K Krieger

List of Publications by Year in descending order

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80
papers

4,893
citations

109137

35
h-index

106150

65
g-index

114
all docs

114
docs citations

114
times ranked

3159
citing authors

| # | ARTICLE | IF | CITATIONS |
|----|--|------|-----------|
| 1 | New and extended parameterization of the thermodynamic model AIOMFAC: calculation of activity coefficients for organic-inorganic mixtures containing carboxyl, hydroxyl, carbonyl, ether, ester, alkenyl, alkyl, and aromatic functional groups. <i>Atmospheric Chemistry and Physics</i> , 2011, 11, 9155-9206. | 1.9 | 317 |
| 2 | Exploring the complexity of aerosol particle properties and processes using single particle techniques. <i>Chemical Society Reviews</i> , 2012, 41, 6631. | 18.7 | 294 |
| 3 | Ultra-slow water diffusion in aqueous sucrose glasses. <i>Physical Chemistry Chemical Physics</i> , 2011, 13, 3514. | 1.3 | 249 |
| 4 | Hygroscopic growth and water uptake kinetics of two-phase aerosol particles consisting of ammonium sulfate, adipic and humic acid mixtures. <i>Journal of Aerosol Science</i> , 2007, 38, 157-171. | 1.8 | 206 |
| 5 | Saturation Vapor Pressures and Transition Enthalpies of Low-Volatility Organic Molecules of Atmospheric Relevance: From Dicarboxylic Acids to Complex Mixtures. <i>Chemical Reviews</i> , 2015, 115, 4115-4156. | 23.0 | 196 |
| 6 | Revising the hygroscopicity of inorganic sea salt particles. <i>Nature Communications</i> , 2017, 8, 15883. | 5.8 | 173 |
| 7 | Phase Changes during Hygroscopic Cycles of Mixed Organic/Inorganic Model Systems of Tropospheric Aerosols. <i>Journal of Physical Chemistry A</i> , 2006, 110, 1881-1893. | 1.1 | 171 |
| 8 | Comparing the mechanism of water condensation and evaporation in glassy aerosol. <i>Proceedings of the National Academy of Sciences of the United States of America</i> , 2012, 109, 11613-11618. | 3.3 | 167 |
| 9 | Liquid-Liquid Phase Separation in Mixed Organic/Inorganic Aerosol Particles. <i>Journal of Physical Chemistry A</i> , 2009, 113, 10966-10978. | 1.1 | 163 |
| 10 | Liquid-liquid phase separation and morphology of internally mixed dicarboxylic acids/ammonium sulfate/water particles. <i>Atmospheric Chemistry and Physics</i> , 2012, 12, 2691-2712. | 1.9 | 161 |
| 11 | Measurements of the timescales for the mass transfer of water in glassy aerosol at low relative humidity and ambient temperature. <i>Atmospheric Chemistry and Physics</i> , 2011, 11, 4739-4754. | 1.9 | 149 |
| 12 | Size-dependent stratospheric droplet composition in Lee wave temperature fluctuations and their potential role in PSC freezing. <i>Geophysical Research Letters</i> , 1995, 22, 3031-3034. | 1.5 | 147 |
| 13 | A combined particle trap/HTDMA hygroscopicity study of mixed inorganic/organic aerosol particles. <i>Atmospheric Chemistry and Physics</i> , 2008, 8, 5589-5601. | 1.9 | 147 |
| 14 | Oxalic acid as a heterogeneous ice nucleus in the upper troposphere and its indirect aerosol effect. <i>Atmospheric Chemistry and Physics</i> , 2006, 6, 3115-3129. | 1.9 | 145 |
| 15 | Ozone uptake on glassy, semi-solid and liquid organic matter and the role of reactive oxygen intermediates in atmospheric aerosol chemistry. <i>Physical Chemistry Chemical Physics</i> , 2016, 18, 12662-12674. | 1.3 | 117 |
| 16 | Thermodynamic Dissociation Constant of the Bisulfate Ion from Raman and Ion Interaction Modeling Studies of Aqueous Sulfuric Acid at Low Temperatures. <i>Journal of Physical Chemistry A</i> , 2003, 107, 4322-4332. | 1.1 | 114 |
| 17 | Viscous organic aerosol particles in the upper troposphere: diffusivity-controlled water uptake and ice nucleation?. <i>Atmospheric Chemistry and Physics</i> , 2015, 15, 13599-13613. | 1.9 | 103 |
| 18 | Liquid-Liquid phase separation in aerosol particles: Dependence on O:C, organic functionalities, and compositional complexity. <i>Geophysical Research Letters</i> , 2012, 39, . | 1.5 | 95 |

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|----|---|-----|-----------|
| 19 | Morphologies of mixed organic/inorganic/aqueous aerosol droplets. <i>Faraday Discussions</i> , 2013, 165, 289. | 1.6 | 93 |
| 20 | Field assisted transport of Na ⁺ ions, Ca ²⁺ ions and electrons in commercial soda-lime glass I: Experimental. <i>Journal of Non-Crystalline Solids</i> , 1988, 102, 50-61. | 1.5 | 91 |
| 21 | Morphological Investigations of Single Levitated H ₂ SO ₄ /NH ₃ /H ₂ O Aerosol Particles during Deliquescence/Efflorescence Experiments. <i>Journal of Physical Chemistry A</i> , 2004, 108, 2700-2709. | 1.1 | 86 |
| 22 | White light Mie resonance spectroscopy used to measure very low vapor pressures of substances in aqueous solution aerosol particles. <i>Optics Express</i> , 2006, 14, 6951. | 1.7 | 83 |
| 23 | The vapor pressures and activities of dicarboxylic acids reconsidered: the impact of the physical state of the aerosol. <i>Atmospheric Chemistry and Physics</i> , 2010, 10, 11753-11767. | 1.9 | 67 |
| 24 | Liquid-Liquid Phase Separation in Mixed Organic/Inorganic Single Aqueous Aerosol Droplets. <i>Journal of Physical Chemistry A</i> , 2015, 119, 4177-4190. | 1.1 | 67 |
| 25 | Densities and refractive indices of H ₂ SO ₄ /HNO ₃ /H ₂ O solutions to stratospheric temperatures. <i>Geophysical Research Letters</i> , 1996, 23, 3707-3710. | 1.5 | 66 |
| 26 | Efflorescence of Ammonium Sulfate and Coated Ammonium Sulfate Particles: Evidence for Surface Nucleation. <i>Journal of Physical Chemistry A</i> , 2010, 114, 9486-9495. | 1.1 | 66 |
| 27 | Retrieving the translational diffusion coefficient of water from experiments on single levitated aerosol droplets. <i>Physical Chemistry Chemical Physics</i> , 2014, 16, 16677. | 1.3 | 64 |
| 28 | Measurements of Thermodynamic and Optical Properties of Selected Aqueous Organic and Organic-Inorganic Mixtures of Atmospheric Relevance. <i>Journal of Physical Chemistry A</i> , 2012, 116, 9954-9968. | 1.1 | 63 |
| 29 | Two-dimensional angular light-scattering in aqueous NaCl single aerosol particles during deliquescence and efflorescence. <i>Optics Express</i> , 2001, 8, 314. | 1.7 | 60 |
| 30 | Evidence of Quantum Correlation Effects of Protons and Deuterons in the Raman Spectra of Liquid H ₂ O-D ₂ O. <i>Physical Review Letters</i> , 1995, 75, 3008-3011. | 2.9 | 47 |
| 31 | Measurement of the refractive indices of H ₂ SO ₄ -HNO ₃ -H ₂ O solutions to stratospheric temperatures. <i>Applied Optics</i> , 2000, 39, 3691. | 2.1 | 45 |
| 32 | A method for extracting calibrated volatility information from the FIGAERO-HR-ToF-CIMS and its experimental application. <i>Atmospheric Measurement Techniques</i> , 2019, 12, 1429-1439. | 1.2 | 42 |
| 33 | Shikimic acid ozonolysis kinetics of the transition from liquid aqueous solution to highly viscous glass. <i>Physical Chemistry Chemical Physics</i> , 2015, 17, 31101-31109. | 1.3 | 41 |
| 34 | A reference data set for validating vapor pressure measurement techniques: homologous series of polyethylene glycols. <i>Atmospheric Measurement Techniques</i> , 2018, 11, 49-63. | 1.2 | 41 |
| 35 | Climatological and radiative properties of midlatitude cirrus clouds derived by automatic evaluation of lidar measurements. <i>Atmospheric Chemistry and Physics</i> , 2016, 16, 7605-7621. | 1.9 | 40 |
| 36 | Diffusivity measurements of volatile organics in levitated viscous aerosol particles. <i>Atmospheric Chemistry and Physics</i> , 2017, 17, 8453-8471. | 1.9 | 40 |

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|----|--|-----|-----------|
| 37 | Electrodynamic balance measurements of thermodynamic, kinetic, and optical aerosol properties inaccessible to bulk methods. <i>Atmospheric Measurement Techniques</i> , 2015, 8, 2397-2408. | 1.2 | 39 |
| 38 | Photolytic radical persistence due to anoxia in viscous aerosol particles. <i>Nature Communications</i> , 2021, 12, 1769. | 5.8 | 37 |
| 39 | Supercooling of single H ₂ SO ₄ /H ₂ O aerosols to 158 K: No evidence for the occurrence of the octahydrate. <i>Geophysical Research Letters</i> , 2000, 27, 2097-2100. | 1.5 | 33 |
| 40 | Technical note: Monte Carlo genetic algorithm (MCGA) for model analysis of multiphase chemical kinetics to determine transport and reaction rate coefficients using multiple experimental data sets. <i>Atmospheric Chemistry and Physics</i> , 2017, 17, 8021-8029. | 1.9 | 33 |
| 41 | Vapor pressures of substituted polycarboxylic acids are much lower than previously reported. <i>Atmospheric Chemistry and Physics</i> , 2013, 13, 6647-6662. | 1.9 | 32 |
| 42 | Balloon-borne match measurements of midlatitude cirrus clouds. <i>Atmospheric Chemistry and Physics</i> , 2014, 14, 7341-7365. | 1.9 | 28 |
| 43 | Evaporation kinetics of a non-spherical, levitated aerosol particle using optical resonance spectroscopy for precision sizing. <i>Optics Express</i> , 2009, 17, 4659. | 1.7 | 26 |
| 44 | Redistribution of black carbon in aerosol particles undergoing liquid-liquid phase separation. <i>Geophysical Research Letters</i> , 2015, 42, 2532-2539. | 1.5 | 25 |
| 45 | Ozonolysis of Oleic Acid Aerosol Revisited: Multiphase Chemical Kinetics and Reaction Mechanisms. <i>ACS Earth and Space Chemistry</i> , 2021, 5, 3313-3323. | 1.2 | 25 |
| 46 | Rutherford Backscattering to Study the Near-Surface Region of Volatile Liquids and Solids. <i>Science</i> , 2002, 295, 1048-1050. | 6.0 | 23 |
| 47 | Using dynamic light scattering to characterize mixed phase single particles levitated in a quasi-electrostatic balance. <i>Faraday Discussions</i> , 2008, 137, 377-388. | 1.6 | 22 |
| 48 | Kinetic Limitation to Inorganic Ion Diffusivity and to Coalescence of Inorganic Inclusions in Viscous Liquid-Liquid Phase-Separated Particles. <i>Journal of Physical Chemistry A</i> , 2017, 121, 9284-9296. | 1.1 | 22 |
| 49 | Electrodynamic balance-mass spectrometry of single particles as a new platform for atmospheric chemistry research. <i>Atmospheric Measurement Techniques</i> , 2018, 11, 33-47. | 1.2 | 22 |
| 50 | Experimental evidence for excess entropy discontinuities in glass-forming solutions. <i>Journal of Chemical Physics</i> , 2012, 136, 074515. | 1.2 | 21 |
| 51 | Experimental determination of the temperature dependence of water activities for a selection of aqueous organic solutions. <i>Atmospheric Chemistry and Physics</i> , 2014, 14, 9993-10012. | 1.9 | 20 |
| 52 | Photochemical degradation of iron(III) citrate/citric acid aerosol quantified with the combination of three complementary experimental techniques and a kinetic process model. <i>Atmospheric Chemistry and Physics</i> , 2021, 21, 315-338. | 1.9 | 20 |
| 53 | Light-scattering intensity fluctuations in single aerosol particles during deliquescence. <i>Journal of Quantitative Spectroscopy and Radiative Transfer</i> , 2001, 70, 545-554. | 1.1 | 19 |
| 54 | Bromine Enrichment in the Near-Surface Region of Br-Doped NaCl Single Crystals Diagnosed by Rutherford Backscattering Spectrometry. <i>Journal of Physical Chemistry A</i> , 2007, 111, 4312-4321. | 1.1 | 16 |

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|----|--|-----|-----------|
| 55 | Tracking Water Sorption in Glassy Aerosol Particles using Morphology-Dependent Resonances. <i>Journal of Physical Chemistry A</i> , 2017, 121, 8176-8184. | 1.1 | 16 |
| 56 | Relevance of Particle Morphology for Atmospheric Aerosol Processing. <i>Trends in Chemistry</i> , 2020, 2, 1-3. | 4.4 | 16 |
| 57 | Shortwave radiative impact of liquid-liquid phase separation in brown carbon aerosols. <i>Atmospheric Chemistry and Physics</i> , 2018, 18, 13511-13530. | 1.9 | 15 |
| 58 | Visualizing reaction and diffusion in xanthan gum aerosol particles exposed to ozone. <i>Physical Chemistry Chemical Physics</i> , 2019, 21, 20613-20627. | 1.3 | 15 |
| 59 | Reply to 'Comment on the Thermodynamic Dissociation Constant of the Bisulfate Ion from Raman and Ion Interaction Modeling Studies of Aqueous Sulfuric Acid at Low Temperatures'. <i>Journal of Physical Chemistry A</i> , 2005, 109, 2707-2709. | 1.1 | 12 |
| 60 | Technical Note: Organics-Induced Fluorescence in Raman Studies of Sulfuric Acid Aerosols. <i>Aerosol Science and Technology</i> , 2002, 36, 510-512. | 1.5 | 11 |
| 61 | Using photon-counting histograms to characterize levitated liquid aerosol particles with a single, solid inclusion. <i>Journal of Quantitative Spectroscopy and Radiative Transfer</i> , 2004, 89, 191-200. | 1.1 | 10 |
| 62 | Time evolution of steep diffusion fronts in highly viscous aerosol particles measured with Mie resonance spectroscopy. <i>Journal of Chemical Physics</i> , 2018, 149, 244506. | 1.2 | 10 |
| 63 | Extension of the AIOMFAC model by iodine and carbonate species: applications for aerosol acidity and cloud droplet activation. <i>Atmospheric Chemistry and Physics</i> , 2022, 22, 973-1013. | 1.9 | 8 |
| 64 | Improved inverted bubble method for measuring small contact angles at crystal-solution-vapor interfaces. <i>Applied Optics</i> , 2007, 46, 5835. | 2.1 | 6 |
| 65 | Observations and calculations of two-dimensional angular optical scattering (TAOS) patterns of a single levitated cluster of two and four microspheres. <i>Journal of Quantitative Spectroscopy and Radiative Transfer</i> , 2011, 112, 1761-1765. | 1.1 | 6 |
| 66 | Measured solid state and subcooled liquid vapour pressures of nitroaromatics using Knudsen effusion mass spectrometry. <i>Atmospheric Chemistry and Physics</i> , 2020, 20, 8293-8314. | 1.9 | 6 |
| 67 | An experimental examination of intensity fluctuations of a host droplet containing an inclusion. <i>Journal of Quantitative Spectroscopy and Radiative Transfer</i> , 2003, 79-80, 873-880. | 1.1 | 5 |
| 68 | Simultaneous Measurements of PM ₁₀ and PM ₁ using a single TEOM [#] . <i>Aerosol Science and Technology</i> , 2007, 41, 975-980. | 1.5 | 5 |
| 69 | Carbon Dioxide Diffusivity in Single, Levitated Organic Aerosol Particles. <i>Journal of Physical Chemistry Letters</i> , 2019, 10, 4484-4489. | 2.1 | 5 |
| 70 | Experimental evidence for nonclassical fourth-order interferences in the quasielastic light scattering of water. <i>Physical Review A</i> , 1995, 52, R1827-R1830. | 1.0 | 4 |
| 71 | Photophoretic spectroscopy in atmospheric chemistry – high-sensitivity measurements of light absorption by a single particle. <i>Atmospheric Measurement Techniques</i> , 2020, 13, 3191-3203. | 1.2 | 4 |
| 72 | RBS analysis of trace gas uptake on ice. <i>Nuclear Instruments & Methods in Physics Research B</i> , 2002, 190, 47-53. | 0.6 | 3 |

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|----|--|-----|-----------|
| 73 | Evaporation kinetics of a non-spherical, levitated aerosol particle using optical resonance spectroscopy for precision sizing: Errata. <i>Optics Express</i> , 2010, 18, 10760. | 1.7 | 2 |
| 74 | Ion Depletion Near a Solution Surface: Is Image-Charge Repulsion Sufficient?. <i>Physical Review Letters</i> , 2013, 111, 266102. | 2.9 | 2 |
| 75 | Grazing angle 2MeV RBS on the surface of a liquid with atomic layer depth resolution. <i>Nuclear Instruments & Methods in Physics Research B</i> , 2010, 268, 1711-1713. | 0.6 | 1 |
| 76 | Uptake of nitric acid on NaCl single crystals measured by backscattering spectrometry. <i>Nuclear Instruments & Methods in Physics Research B</i> , 2010, 268, 2202-2204. | 0.6 | 1 |
| 77 | The Application of RBS To Investigate The Diffusion of HCl Into The Near Surface Region Of Ice. <i>AIP Conference Proceedings</i> , 2003, , . | 0.3 | 0 |
| 78 | Diffusion constants of Br in NaCl measured by Rutherford backscattering spectroscopy. <i>Journal of Applied Physics</i> , 2009, 105, 124910. | 1.1 | 0 |
| 79 | Response to "Comment on "Experimental evidence for excess entropy discontinuities in glass-forming solutions" [J. Chem. Phys. 139, 047101 (2013)]. <i>Journal of Chemical Physics</i> , 2013, 139, 047102. | 1.2 | 0 |
| 80 | Imaging Molecular Reaction and Diffusion in Organic Aerosol Particles. <i>Microscopy and Microanalysis</i> , 2018, 24, 496-497. | 0.2 | 0 |