David Owen Topping

List of Publications by Year
in descending order

88 papers	4,860 citations	109137 35 h-index	123241 61 g-index
131 all docs	131 docs citations	131 times ranked	3983 citing authors

#	Article	IF	Citations
1	Hygroscopic properties of submicrometer atmospheric aerosol particles measured with H-TDMA instruments in various environmentsâ€"a review. Tellus, Series B: Chemical and Physical Meteorology, 2022, 60, 432.	0.8	401
2	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. Atmospheric Chemistry and Physics, 2011, 11, 9155-9206.	1.9	317
3	General overview: European Integrated project on Aerosol Cloud Climate and Air Quality interactions (EUCAARI) â€" integrating aerosol research from nano to global scales. Atmospheric Chemistry and Physics, 2011, 11, 13061-13143.	1.9	278
4	Closure study between chemical composition and hygroscopic growth of aerosol particles during TORCH2. Atmospheric Chemistry and Physics, 2007, 7, 6131-6144.	1.9	273
5	The viscosity of atmospherically relevant organic particles. Nature Communications, 2018, 9, 956.	5.8	252
6	Secondary organic aerosol reduced by mixture of atmospheric vapours. Nature, 2019, 565, 587-593.	13.7	222
7	Saturation Vapor Pressures and Transition Enthalpies of Low-Volatility Organic Molecules of Atmospheric Relevance: From Dicarboxylic Acids to Complex Mixtures. Chemical Reviews, 2015, 115, 4115-4156.	23.0	196
8	Ubiquity of organic nitrates from nighttime chemistry in the European submicron aerosol. Geophysical Research Letters, 2016, 43, 7735-7744.	1.5	182
9	Real-time sensing of bioaerosols: Review and current perspectives. Aerosol Science and Technology, 2020, 54, 465-495.	1.5	144
10	Simplification of the representation of the organic component of atmospheric particulates. Faraday Discussions, 2005, 130, 341.	1.6	118
11	Consistency between parameterisations of aerosol hygroscopicity and CCN activity during the RHaMBLe discovery cruise. Atmospheric Chemistry and Physics, 2010, 10, 3189-3203.	1.9	112
12	Cloud droplet number enhanced by co-condensation of organic vapours. Nature Geoscience, 2013, 6, 443-446.	5.4	105
13	Regional and global impacts of Criegee intermediates on atmospheric sulphuric acid concentrations and first steps of aerosol formation. Faraday Discussions, 2013, 165, 45.	1.6	103
14	Measurements and Predictions of Binary Component Aerosol Particle Viscosity. Journal of Physical Chemistry A, 2016, 120, 8123-8137.	1.1	92
15	Aerosol chemical characteristics from sampling conducted on the Island of Jeju, Korea during ACE Asia. Atmospheric Environment, 2004, 38, 2111-2123.	1.9	91
16	Surface tensions of multi-component mixed inorganic/organic aqueous systems of atmospheric significance: measurements, model predictions and importance for cloud activation predictions. Atmospheric Chemistry and Physics, 2007, 7, 2371-2398.	1.9	85
17	Solid state and sub-cooled liquid vapour pressures of substituted dicarboxylic acids using Knudsen Effusion Mass Spectrometry (KEMS) and Differential Scanning Calorimetry. Atmospheric Chemistry and Physics, 2010, 10, 4879-4892.	1.9	79
18	Tight coupling of particle size, number and composition in atmospheric cloud droplet activation. Atmospheric Chemistry and Physics, 2012, 12, 3253-3260.	1.9	78

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19	UManSysProp v1.0: an online and open-source facility for molecular property prediction and atmospheric aerosol calculations. Geoscientific Model Development, 2016, 9, 899-914.	1.3	78
20	Microphysical explanation of the RHâ€dependent water affinity of biogenic organic aerosol and its importance for climate. Geophysical Research Letters, 2017, 44, 5167-5177.	1.5	74
21	An assessment of vapour pressure estimation methods. Physical Chemistry Chemical Physics, 2014, 16, 19453-19469.	1.3	63
22	Online gas- and particle-phase measurements of organosulfates, organosulfonates and nitrooxy organosulfates in Beijing utilizing a FIGAERO ToF-CIMS. Atmospheric Chemistry and Physics, 2018, 18, 10355-10371.	1.9	62
23	Widening the gap between measurement and modelling of secondary organic aerosol properties?. Atmospheric Chemistry and Physics, 2010, 10, 2577-2593.	1.9	60
24	Composition and properties of atmospheric particles in the eastern Atlantic and impacts on gas phase uptake rates. Atmospheric Chemistry and Physics, 2009, 9, 9299-9314.	1.9	58
25	Comparative Thermodynamic Studies of Aqueous Glutaric Acid, Ammonium Sulfate and Sodium Chloride Aerosol at High Humidity. Journal of Physical Chemistry A, 2008, 112, 9413-9422.	1.1	56
26	The Kelvin versus the Raoult Term in the KÃ¶hler Equation. Journals of the Atmospheric Sciences, 2008, 65, 4004-4016.	0.6	55
27	Design and construction of a simple Knudsen Effusion Mass Spectrometer (KEMS) system for vapour pressure measurements of low volatility organics. Atmospheric Measurement Techniques, 2009, 2, 355-361.	1.2	54
28	Evaluation of machine learning algorithms for classification of primary biological aerosol using a new UV-LIF spectrometer. Atmospheric Measurement Techniques, 2017, 10, 695-708.	1.2	54
29	Surfactant effects in global simulations of cloud droplet activation. Geophysical Research Letters, 2012, 39, .	1.5	51
30	Surface tension of mixed inorganic and dicarboxylic acid aqueous solutions at 298.15 K and their importance for cloud activation predictions. Physical Chemistry Chemical Physics, 2009, 11, 8021.	1.3	50
31	Sensitivities of the absorptive partitioning model of secondary organic aerosol formation to the inclusion of water. Atmospheric Chemistry and Physics, 2009, 9, 2919-2932.	1.9	50
32	Connecting Bulk Viscosity Measurements to Kinetic Limitations on Attaining Equilibrium for a Model Aerosol Composition. Environmental Science & Technology, 2014, 48, 9298-9305.	4.6	50
33	Solid state and sub-cooled liquid vapour pressures of cyclic aliphatic dicarboxylic acids. Atmospheric Chemistry and Physics, 2011, 11, 655-665.	1.9	48
34	Evaluation of hierarchical agglomerative cluster analysis methods for discrimination of primary biological aerosol. Atmospheric Measurement Techniques, 2015, 8, 4979-4991.	1.2	46
35	The sensitivity of secondary organic aerosol component partitioning to the predictions of component properties â€“ Part 1: A systematic evaluation of some available estimation techniques. Atmospheric Chemistry and Physics, 2010, 10, 10255-10272.	1.9	45
36	Cloud condensation nucleus (CCN) behavior of organic aerosol particles generated by atomization of water and methanol solutions. Atmospheric Chemistry and Physics, 2007, 7, 2949-2971.	1.9	44

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37	A reference data set for validating vapor pressure measurement techniques: homologous series of polyethylene glycols. Atmospheric Measurement Techniques, 2018, 11, 49-63.	1.2	41
38	Direct Comparison of the Hygroscopic Properties of Ammonium Sulfate and Sodium Chloride Aerosol at Relative Humidities Approaching Saturation. Journal of Physical Chemistry A, 2010, 114, 12682-12691.	1.1	36
39	The rate of equilibration of viscous aerosol particles. Atmospheric Chemistry and Physics, 2016, 16, 5299-5313.	1.9	35
40	A predictive group-contribution model for the viscosity of aqueous organic aerosol. Atmospheric Chemistry and Physics, 2020, 20, 2987-3008.	1.9	34
41	An analytical solution to calculate bulk mole fractions for any number of components in aerosol droplets after considering partitioning to a surface layer. Geoscientific Model Development, 2010, 3, 635-642.	1.3	33
42	Comparison of Approaches for Measuring and Predicting the Viscosity of Ternary Component Aerosol Particles. Analytical Chemistry, 2019, 91, 5074-5082.	3.2	33
43	The sensitivity of Secondary Organic Aerosol component partitioning to the predictions of component properties â€“ Part 2: Determination of particle hygroscopicity and its dependence on "apparent" volatility. Atmospheric Chemistry and Physics, 2011, 11, 7767-7779.	1.9	30
44	Including phase separation in a unified model to calculate partitioning of vapours to mixed inorganicâ€“organic aerosol particles. Faraday Discussions, 2013, 165, 273.	1.6	26
45	Modelling multi-phase halogen chemistry in the remote marine boundary layer: investigation of the influence of aerosol size resolution on predicted gas- and condensed-phase chemistry. Atmospheric Chemistry and Physics, 2009, 9, 4559-4573.	1.9	25
46	The role of ortho, meta, para isomerism in measured solid state and derived sub-cooled liquid vapour pressures of substituted benzoic acids. RSC Advances, 2012, 2, 4430.	1.7	23
47	Accurate representations of the physicochemical properties of atmospheric aerosols: when are laboratory measurements of value?. Faraday Discussions, 2017, 200, 639-661.	1.6	23
48	Machine learning for improved data analysis of biological aerosol using the WIBS. Atmospheric Measurement Techniques, 2018, 11, 6203-6230.	1.2	23
49	Characterising the evaporation kinetics of water and semi-volatile organic compounds from viscous multicomponent organic aerosol particles. Physical Chemistry Chemical Physics, 2017, 19, 31634-31646.	1.3	21
50	The sensitivity of secondary organic aerosol (SOA) component partitioning to the predictions of component properties â€“ Part 3: Investigation of condensed compounds generated by a near-explicit model of VOC oxidation. Atmospheric Chemistry and Physics, 2011, 11, 13145-13159.	1.9	20
51	Measured Saturation Vapor Pressures of Phenolic and Nitro-aromatic Compounds. Environmental Science & Technology, 2017, 51, 3922-3928.	4.6	19
52	Characterisation and source identification of biofluorescent aerosol emissions over winter and summer periods in the United Kingdom. Atmospheric Chemistry and Physics, 2019, 19, 1665-1684.	1.9	19
53	Partial Derivative Fitted Taylor Expansion: An efficient method for calculating gasâ€liquid equilibria in atmospheric aerosol particles: 1. Inorganic compounds. Journal of Geophysical Research, 2009, 114, .	3.3	18
54	Critical Assessment of Liquid Density Estimation Methods for Multifunctional Organic Compounds and Their Use in Atmospheric Science. Journal of Physical Chemistry A, 2013, 117, 3428-3441.	1.1	16

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55	Maxwellâ€“Stefan diffusion: a framework for predicting condensed phase diffusion and phase separation in atmospheric aerosol. Atmospheric Chemistry and Physics, 2018, 18, 1629-1642.	1.9	16
56	The effect of structure and isomerism on the vapor pressures of organic molecules and its potential atmospheric relevance. Aerosol Science and Technology, 2019, 53, 1040-1055.	1.5	16
57	Partial Derivative Fitted Taylor Expansion: an efficient method for calculating gas/liquid equilibria in atmospheric aerosol particles â€“ Part 2: Organic compounds. Geoscientific Model Development, 2012, 5, 1-13.	1.3	14
58	Modelling the effect of condensed-phase diffusion on the homogeneous nucleation of ice in ultra-viscous particles. Atmospheric Chemistry and Physics, 2020, 20, 683-698.	1.9	14
59	Intercomparison of Multiple UV-LIF Spectrometers Using the Aerosol Challenge Simulator. Atmosphere, 2019, 10, 797.	1.0	13
60	Accurate Prediction of Organic Aerosol Evaporation Using Kinetic Multilayer Modeling and the Stokesâ€“Einstein Equation. Journal of Physical Chemistry A, 2021, 125, 3444-3456.	1.1	13
61	PyBox: An automated box-model generator for atmospheric chemistry and aerosol simulations.. Journal of Open Source Software, 2018, 3, 755.	2.0	13
62	Inverse modelling of KÃ¶hler theory â€“ Part 1: A response surface analysis of CCN spectra with respect to surface-active organic species. Atmospheric Chemistry and Physics, 2016, 16, 10941-10963.	1.9	12
63	A Large Source of Atomic Chlorine From ClNO₂ Photolysis at a U.K. Landfill Site. Geophysical Research Letters, 2019, 46, 8508-8516.	1.5	11
64	New Approach Combining Molecular Fingerprints and Machine Learning to Estimate Relative Ionization Efficiency in Electrospray Ionization. ACS Omega, 2020, 5, 9510-9516.	1.6	11
65	PyCHAM (v2.1.1): a Python box model for simulating aerosol chambers. Geoscientific Model Development, 2021, 14, 675-702.	1.3	9
66	A parameterisation for the activation of cloud drops including the effects of semi-volatile organics. Atmospheric Chemistry and Physics, 2014, 14, 2289-2302.	1.9	8
67	Size-resolved simulations of the aerosol inorganic composition with the new hybrid dissolution solver HyDiS-1.0: description, evaluation and first global modelling results. Geoscientific Model Development, 2016, 9, 3875-3906.	1.3	8
68	Measured particle water uptake enhanced by co-condensing vapours. Atmospheric Chemistry and Physics, 2018, 18, 14925-14937.	1.9	7
69	Detection of Airborne Biological Particles in Indoor Air Using a Real-Time Advanced Morphological Parameter UV-LIF Spectrometer and Gradient Boosting Ensemble Decision Tree Classifiers. Atmosphere, 2020, 11, 1039.	1.0	7
70	Transient cavity dynamics and divergence from the Stokesâ€“Einstein equation in organic aerosol. Chemical Science, 2020, 11, 2999-3006.	3.7	7
71	JlBox v1.1: a Julia-based multi-phase atmospheric chemistry box model. Geoscientific Model Development, 2021, 14, 2187-2203.	1.3	7
72	Description and evaluation of the community aerosol dynamics model MAFOR v2.0. Geoscientific Model Development, 2022, 15, 3969-4026.	1.3	7

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73	An efficient approach for treating composition-dependent diffusion within organic particles. Atmospheric Chemistry and Physics, 2017, 17, 10477-10494.	1.9	6
74	Measured solid state and subcooled liquid vapour pressures of nitroaromatics using Knudsen effusion mass spectrometry. Atmospheric Chemistry and Physics, 2020, 20, 8293-8314.	1.9	6
75	Solid-State Competitive Destabilization of Caffeine Malonic Acid Cocrystal: Mechanistic and Kinetic Investigations. Crystal Growth and Design, 2020, 20, 7598-7605.	1.4	5
76	PyCHAM: CHemistry with Aerosol Microphysics in Python. Journal of Open Source Software, 2020, 5, 1918.	2.0	5
77	Development of lithium attachment mass spectrometry â€“ knudsen effusion and chemical ionisation mass spectrometry (KEMS, CIMS). Analyst, The, 2017, 142, 3666-3673.	1.7	4
78	Monitoring and Understanding Urban Transformation: A Mixed Method Approach. Frontiers in Sustainable Cities, 2022, 3, .	1.2	4
79	Airborne Bacterial and Eukaryotic Community Structure across the United Kingdom Revealed by High-Throughput Sequencing. Atmosphere, 2020, 11, 802.	1.0	3
80	Quantifying bioaerosol concentrations in dust clouds through online UV-LIF and mass spectrometry measurements at the Cape Verde Atmospheric Observatory. Atmospheric Chemistry and Physics, 2020, 20, 14473-14490.	1.9	3
81	The Observation and Characterisation of Fluorescent Bioaerosols Using Real-Time UV-LIF Spectrometry in Hong Kong from June to November 2018. Atmosphere, 2020, 11, 944.	1.0	2
82	Thermodynamics of Aqueous Systems. , 0, , 141-191.		1
83	STRAPS v1.0: evaluating a methodology for predicting electron impact ionisation mass spectra for the aerosol mass spectrometer. Geoscientific Model Development, 2017, 10, 2365-2377.	1.3	1
84	Measured Solid State and Sub-Cooled Liquid Vapour Pressures of Benzaldehydes Using Knudsen Effusion Mass Spectrometry. Atmosphere, 2021, 12, 397.	1.0	1
85	Response to Comment on â€œMeasured Saturation Vapor Pressures of Phenolic and Nitro-Aromatic Compoundsâ€• Environmental Science & Technology, 2017, 51, 7744-7745.	4.6	1
86	Equilibrium absorptive partitioning theory between multiple aerosol particle modes. Geoscientific Model Development, 2016, 9, 3617-3637.	1.3	0
87	In silico screening for early hazard assessment: A case study on organic aerosol compounds. Toxicology Letters, 2016, 258, S139.	0.4	0
88	Evaluating the mutagenic potential of aerosol organic compounds using informatics-based screening. Atmospheric Chemistry and Physics, 2018, 18, 2329-2340.	1.9	0