Scot T Martin

List of Publications by Year
in descending order

120 papers	8,180 citations	41323 49 h-index	54882 84 g-index
129 all docs	129 docs citations	129 times ranked	6339 citing authors

#	Article	IF	Citations
1	Phase Transitions of Aqueous Atmospheric Particles. Chemical Reviews, 2000, 100, 3403-3454.	23.0	661
2	Recent advances in understanding secondary organic aerosol: Implications for global climate forcing. Reviews of Geophysics, 2017, 55, 509-559.	9.0	548
3	Viscosity of <i>Î±</i> -pinene secondary organic material and implications for particle growth and reactivity. Proceedings of the National Academy of Sciences of the United States of America, 2013, 110, 8014-8019.	3.3	388
4	Substantial convection and precipitation enhancements by ultrafineaerosol particles. Science, 2018, 359, 411-418.	6.0	290
5	Sources and properties of Amazonian aerosol particles. Reviews of Geophysics, 2010, 48, .	9.0	283
6	Relative roles of biogenic emissions and Saharan dust as ice nuclei in the Amazon basin. Nature Geoscience, 2009, 2, 402-405.	5.4	282
7	The viscosity of atmospherically relevant organic particles. Nature Communications, 2018, 9, 956.	5.8	252
8	Atmospheric aerosols in Amazonia and land use change: from natural biogenic to biomass burning conditions. Faraday Discussions, 2013, 165, 203.	1.6	207
9	Phase of atmospheric secondary organic material affects its reactivity. Proceedings of the National Academy of Sciences of the United States of America, 2012, 109, 17354-17359.	3.3	182
10	Particle-Phase Chemistry of Secondary Organic Material: Modeled Compared to Measured O:C and H:C Elemental Ratios Provide Constraints. Environmental Science & Technology, 2011, 45, 4763-4770.	4.6	167
11	Fast sulfate formation from oxidation of SO2 by NO2 and HONO observed in Beijing haze. Nature Communications, 2020, 11, 2844.	5.8	161
12	Urban pollution greatly enhances formation of natural aerosols over the Amazon rainforest. Nature Communications, 2019, 10, 1046.	5.8	131
13	ACRIDICONâ€"CHUVA Campaign: Studying Tropical Deep Convective Clouds and Precipitation over Amazonia Using the New German Research Aircraft HALO. Bulletin of the American Meteorological Society, 2016, 97, 1885-1908.	1.7	124
14	Phase Transitions of Single Salt Particles Studied Using a Transmission Electron Microscope with an Environmental Cell. Aerosol Science and Technology, 2005, 39, 849-856.	1.5	118
15	Water diffusion in atmospherically relevant Î±-pinene secondary organic material. Chemical Science, 2015, 6, 4876-4883.	3.7	116
16	Hygroscopic Influence on the Semisolid-to-Liquid Transition of Secondary Organic Materials. Journal of Physical Chemistry A, 2015, 119, 4386-4395.	1.1	112
17	Amazon boundary layer aerosol concentration sustained by vertical transport during rainfall. Nature, 2016, 539, 416-419.	13.7	112
18	Increasing Isoprene Epoxydiol-to-Inorganic Sulfate Aerosol Ratio Results in Extensive Conversion of Inorganic Sulfate to Organosulfur Forms: Implications for Aerosol Physicochemical Properties. Environmental Science & Technology, 2019, 53, 8682-8694.	4.6	111

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19	Long-term observations of cloud condensation nuclei in the Amazon rain forest â€“ Part 1: Aerosol size distribution, hygroscopicity, and new model parametrizations for CCN prediction. Atmospheric Chemistry and Physics, 2016, 16, 15709-15740.	1.9	105
20	Sub-micrometre particulate matter is primarily in liquid form over Amazon rainforest. Nature Geoscience, 2016, 9, 34-37.	5.4	99
21	Relative humidity-dependent viscosity of secondary organic material from toluene photo-oxidation and possible implications for organic particulate matter over megacities. Atmospheric Chemistry and Physics, 2016, 16, 8817-8830.	1.9	95
22	Enhanced aerosol particle growth sustained by high continental chlorine emission in India. Nature Geoscience, 2021, 14, 77-84.	5.4	94
23	Lability of secondary organic particulate matter. Proceedings of the National Academy of Sciences of the United States of America, 2016, 113, 12643-12648.	3.3	93
24	Impactor Apparatus for the Study of Particle Rebound: Relative Humidity and Capillary Forces. Aerosol Science and Technology, 2014, 48, 42-52.	1.5	91
25	Deliquescence and Efflorescence of Potassium Salts Relevant to Biomass-Burning Aerosol Particles. Aerosol Science and Technology, 2009, 43, 799-807.	1.5	90
26	Satellite characterization of urban aerosols: Importance of including hygroscopicity and mixing state in the retrieval algorithms. Journal of Geophysical Research, 2007, 112, .	3.3	88
27	Complex Refractive Indices of Thin Films of Secondary Organic Materials by Spectroscopic Ellipsometry from 220 to 1200 nm. Environmental Science & Technology, 2013, 47, 13594-13601.	4.6	85
28	Isoprene photochemistry over the Amazon rainforest. Proceedings of the National Academy of Sciences of the United States of America, 2016, 113, 6125-6130.	3.3	85
29	Growth Kinetics and Size Distribution Dynamics of Viscous Secondary Organic Aerosol. Environmental Science & Technology, 2018, 52, 1191-1199.	4.6	85
30	Global distribution of solid and aqueous sulfate aerosols: Effect of the hysteresis of particle phase transitions. Journal of Geophysical Research, 2008, 113, .	3.3	84
31	Water Uptake by NaCl Particles Prior to Deliquescence and the Phase Rule. Aerosol Science and Technology, 2008, 42, 281-294.	1.5	84
32	Resolving the mechanisms of hygroscopic growth and cloud condensation nuclei activity for organic particulate matter. Nature Communications, 2018, 9, 4076.	5.8	84
33	Effect of varying experimental conditions on the viscosity of <i>Î±</i>-pinene derived secondary organic material. Atmospheric Chemistry and Physics, 2016, 16, 6027-6040.	1.9	79
34	Hygroscopic behavior of aerosol particles from biomass fires using environmental transmission electron microscopy. Journal of Atmospheric Chemistry, 2007, 56, 259-273.	1.4	76
35	Dissolution rates and pit morphologies of rhombohedral carbonate minerals. American Mineralogist, 2004, 89, 554-563.	0.9	75
36	Aqueous production of secondary organic aerosol from fossil-fuel emissions in winter Beijing haze. Proceedings of the National Academy of Sciences of the United States of America, 2021, 118, .	3.3	75

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37	Chemical Reactivity and Liquid/Nonliquid States of Secondary Organic Material. Environmental Science & Technology, 2015, 49, 13264-13274.	4.6	74
38	The Stove, Dome, and Umbrella Effects of Atmospheric Aerosol on the Development of the Planetary Boundary Layer in Hazy Regions. Geophysical Research Letters, 2020, 47, e2020GL087373.	1.5	73
39	Hygroscopic behavior of NaCl-bearing natural aerosol particles using environmental transmission electron microscopy. Journal of Geophysical Research, 2007, 112, .	3.3	72
40	CCN activity and organic hygroscopicity of aerosols downwind of an urban region in central Amazonia: seasonal and diel variations and impact of anthropogenic emissions. Atmospheric Chemistry and Physics, 2017, 17, 11779-11801.	1.9	71
41	Crystallization of atmospheric sulfate-nitrate-ammonium particles. Geophysical Research Letters, 2003, 30, .	1.5	69
42	Ambient Gas-Particle Partitioning of Tracers for Biogenic Oxidation. Environmental Science & Technology, 2016, 50, 9952-9962.	4.6	69
43	Cloud condensation nucleus activity of secondary organic aerosol particles mixed with sulfate. Geophysical Research Letters, 2007, 34, .	1.5	68
44	Sensitivity of sulfate direct climate forcing to the hysteresis of particle phase transitions. Journal of Geophysical Research, 2008, 113, .	3.3	67
45	Long-term observations of cloud condensation nuclei over the Amazon rain forest â€“ Part 2: Variability and characteristics of biomass burning, long-range transport, and pristine rain forest aerosols. Atmospheric Chemistry and Physics, 2018, 18, 10289-10331.	1.9	64
46	Secondary organic aerosol formation from ambient air in an oxidation flow reactor in central Amazonia. Atmospheric Chemistry and Physics, 2018, 18, 467-493.	1.9	63
47	Highly Viscous States Affect the Browning of Atmospheric Organic Particulate Matter. ACS Central Science, 2018, 4, 207-215.	5.3	60
48	Hygroscopic behavior and liquidâ€layer composition of aerosol particles generated from natural and artificial seawater. Journal of Geophysical Research, 2009, 114, .	3.3	54
49	Airborne observations reveal elevational gradient in tropical forest isoprene emissions. Nature Communications, 2017, 8, 15541.	5.8	53
50	Observations of sesquiterpenes and their oxidation products in central Amazonia during the wet and dry seasons. Atmospheric Chemistry and Physics, 2018, 18, 10433-10457.	1.9	53
51	Monoterpene â€˜<i>thermometer</i>â€™ of tropical forestâ€atmosphere response to climate warming. Plant, Cell and Environment, 2017, 40, 441-452.	2.8	52
52	Anthropogenic influences on the physical state of submicron particulate matter over a tropical forest. Atmospheric Chemistry and Physics, 2017, 17, 1759-1773.	1.9	52
53	The size effect of hematite and corundum inclusions on the efflorescence relative humidities of aqueous ammonium sulfate particles. Geophysical Research Letters, 2001, 28, 2601-2604.	1.5	50
54	Influence of urban pollution on the production of organic particulate matter from isoprene epoxydiols in central Amazonia. Atmospheric Chemistry and Physics, 2017, 17, 6611-6629.	1.9	45

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55	Liquidâ€"liquid phase separation in particles containing secondary organic material free of inorganic salts. Atmospheric Chemistry and Physics, 2017, 17, 11261-11271.	1.9	45
56	Radical Formation by Fine Particulate Matter Associated with Highly Oxygenated Molecules. Environmental Science & Technology, 2019, 53, 12506-12518.	4.6	45
57	Ice Nucleation Kinetics of Aerosols Containing Aqueous and Solid Ammonium Sulfate Particles. Journal of Physical Chemistry A, 2002, 106, 293-306.	1.1	40
58	Cloud Activation Potentials for Atmospheric Î±-Pinene and Î²-Caryophyllene Ozonolysis Products. ACS Central Science, 2017, 3, 715-725.	5.3	40
59	Organosulfates in aerosols downwind of an urban region in central Amazon. Environmental Sciences: Processes and Impacts, 2018, 20, 1546-1558.	1.7	40
60	A sampler for atmospheric volatile organic compounds by copter unmanned aerial vehicles. Atmospheric Measurement Techniques, 2019, 12, 3123-3135.	1.2	40
61	Aircraft-based observations of isoprene-epoxydiol-derived secondary organic aerosol (IEPOX-SOA) in the tropical upper troposphere over the Amazon region. Atmospheric Chemistry and Physics, 2018, 18, 14979-15001.	1.9	39
62	Vertical profiling of fine particulate matter and black carbon by using unmanned aerial vehicle in Macau, China. Science of the Total Environment, 2020, 709, 136109.	3.9	39
63	Contributions of biomass-burning, urban, and biogenic emissions to the concentrations and light-absorbing properties of particulate matter in central Amazonia during the dry season. Atmospheric Chemistry and Physics, 2019, 19, 7973-8001.	1.9	36
64	Aircraft observations of the chemical composition and aging of aerosol in the Manaus urban plume during GoAmazon 2014/5. Atmospheric Chemistry and Physics, 2018, 18, 10773-10797.	1.9	32
65	Size effect of hematite and corundum inclusions on the efflorescence relative humidities of aqueous ammonium nitrate particles. Journal of Geophysical Research, 2002, 107, AAC 3-1-AAC 3-9.	3.3	31
66	Elemental Mixing State of Aerosol Particles Collected in Central Amazonia during GoAmazon2014/15. Atmosphere, 2017, 8, 173.	1.0	30
67	Urban influence on the concentration and composition of submicron particulate matter in central Amazonia. Atmospheric Chemistry and Physics, 2018, 18, 12185-12206.	1.9	30
68	How do aerosols above the residual layer affect the planetary boundary layer height?. Science of the Total Environment, 2022, 814, 151953.	3.9	30
69	Oxaloacetate-to-malate conversion by mineral photoelectrochemistry: implications for the viability of the reductive tricarboxylic acid cycle in prebiotic chemistry. International Journal of Astrobiology, 2008, 7, 271-278.	0.9	29
70	Impacts of the Manaus pollution plume on the microphysical properties of Amazonian warm-phase clouds in the wet season. Atmospheric Chemistry and Physics, 2016, 16, 7029-7041.	1.9	29
71	Phase changes of ambient particles in the Southern Great Plains of Oklahoma. Geophysical Research Letters, 2008, 35, .	1.5	28
72	Power plant fuel switching and air quality in a tropical, forested environment. Atmospheric Chemistry and Physics, 2017, 17, 8987-8998.	1.9	28

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73	Isoprene photo-oxidation products quantify the effect of pollution on hydroxyl radicals over Amazonia. Science Advances, 2018, 4, eaar2547.	4.7	28
74	Intermediate-scale horizontal isoprene concentrations in the near-canopy forest atmosphere and implications for emission heterogeneity. Proceedings of the National Academy of Sciences of the United States of America, 2019, 116, 19318-19323.	3.3	28
75	Chemically Resolved Particle Fluxes Over Tropical and Temperate Forests. Aerosol Science and Technology, 2013, 47, 818-830.	1.5	27
76	Particle Size Distributions following Condensational Growth in Continuous Flow Aerosol Reactors as Derived from Residence Time Distributions: Theoretical Development and Application to Secondary Organic Aerosol. Aerosol Science and Technology, 2012, 46, 937-949.	1.5	22
77	Natural and Anthropogenically Influenced Isoprene Oxidation in Southeastern United States and Central Amazon. Environmental Science & Technology, 2020, 54, 5980-5991.	4.6	22
78	Observations of sesquiterpenes and their oxidation products in central Amazonia during the wet and dry seasons. Atmospheric Chemistry and Physics, 2018, 18, 10433-10457.	1.9	22
79	Vertical Profiles of Ozone Concentration Collected by an Unmanned Aerial Vehicle and the Mixing of the Nighttime Boundary Layer over an Amazonian Urban Area. Atmosphere, 2019, 10, 599.	1.0	21
80	Observations of particulate matter, NO2, SO2, O3, H2S and selected VOCs at a semi-urban environment in the Amazon region. Science of the Total Environment, 2019, 650, 996-1006.	3.9	21
81	Leaf isoprene and monoterpene emission distribution across hyperdominant tree genera in the Amazon basin. Phytochemistry, 2020, 175, 112366.	1.4	21
82	Unified Description of Diffusion Coefficients from Small to Large Molecules in Organicâ€“Water Mixtures. Journal of Physical Chemistry A, 2020, 124, 2301-2308.	1.1	19
83	Rapid growth of anthropogenic organic nanoparticles greatly alters cloud life cycle in the Amazon rainforest. Science Advances, 2022, 8, eabj0329.	4.7	19
84	Stereochemical transfer to atmospheric aerosol particles accompanying the oxidation of biogenic volatile organic compounds. Geophysical Research Letters, 2011, 38, n/a-n/a.	1.5	18
85	Fluorescence Aerosol Flow Tube Spectroscopy to Detect Liquidâ€“Liquid Phase Separation. ACS Earth and Space Chemistry, 2021, 5, 1223-1232.	1.2	18
86	Observations of Manaus urban plume evolution and interaction with biogenic emissions in GoAmazon 2014/5. Atmospheric Environment, 2018, 191, 513-524.	1.9	17
87	Solubility and freezing effects of Fe2+and Mg2+in H2SO4solutions representative of upper tropospheric and lower stratospheric sulfate particles. Journal of Geophysical Research, 2003, 108, .	3.3	16
88	Quantifying the Role of the Relative Humidity-Dependent Physical State of Organic Particulate Matter in the Uptake of Semivolatile Organic Molecules. Environmental Science & Technology, 2019, 53, 13209-13218.	4.6	16
89	Liquid-liquid phase separation reduces radiative absorption by aged black carbon aerosols. Communications Earth & Environment, 2022, 3, .	2.6	16
90	The influence that different urban development models has on PM2.5 elemental and bioaccessible profiles. Scientific Reports, 2019, 9, 14846.	1.6	15

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91	Humidity Dependence of the Condensational Growth of Î±-Pinene Secondary Organic Aerosol Particles. Environmental Science & Technology, 2021, 55, 14360-14369.	4.6	15
92	New SOA Treatments Within the Energy Exascale Earth System Model (E3SM): Strong Production and Sinks Govern Atmospheric SOA Distributions and Radiative Forcing. Journal of Advances in Modeling Earth Systems, 2020, 12, e2020MS002266.	1.3	15
93	Impact of biomass burning on a metropolitan area in the Amazon during the 2015ÂEl NiÃ±o: The enhancement of carbon monoxide and levoglucosan concentrations. Environmental Pollution, 2020, 260, 114029.	3.7	14
94	Vertical Profiles of Atmospheric Species Concentrations and Nighttime Boundary Layer Structure in the Dry Season over an Urban Environment in Central Amazon Collected by an Unmanned Aerial Vehicle. Atmosphere, 2020, 11, 1371.	1.0	13
95	Comparison of aircraft measurements during GoAmazon2014/5 and ACRIDICON-CHUVA. Atmospheric Measurement Techniques, 2020, 13, 661-684.	1.2	12
96	Chemical Characterization and Source Apportionment of Organic Aerosols in the Coastal City of Chennai, India: Impact of Marine Air Masses on Aerosol Chemical Composition and Potential for Secondary Organic Aerosol Formation. ACS Earth and Space Chemistry, 2021, 5, 3197-3209.	1.2	12
97	Phase Behavior of Internal Mixtures of Hydrocarbon-like Primary Organic Aerosol and Secondary Aerosol Based on Their Differences in Oxygen-to-Carbon Ratios. Environmental Science & Technology, 2022, 56, 3960-3973.	4.6	12
98	Influence of Particle Physical State on the Uptake of Medium-Sized Organic Molecules. Environmental Science & Technology, 2018, 52, 8381-8389.	4.6	11
99	Chemical composition of ultrafine aerosol particles in central Amazonia during the wet season. Atmospheric Chemistry and Physics, 2019, 19, 13053-13066.	1.9	11
100	Tight Coupling of Surface and In-Plant Biochemistry and Convection Governs Key Fine Particulate Components over the Amazon Rainforest. ACS Earth and Space Chemistry, 2022, 6, 380-390.	1.2	11
101	The Reactivity of Toluene-Derived Secondary Organic Material with Ammonia and the Influence of Water Vapor. Journal of Physical Chemistry A, 2018, 122, 7739-7747.	1.1	10
102	Atmospheric Î²-Caryophyllene-Derived Ozonolysis Products at Interfaces. ACS Earth and Space Chemistry, 2019, 3, 158-169.	1.2	10
103	Impact of the biomass burning on methane variability during dry years in the Amazon measured from an aircraft and the AIRS sensor. Science of the Total Environment, 2018, 624, 509-516.	3.9	9
104	Exploration of oxidative chemistry and secondary organic aerosol formation in the Amazon during the wet season: explicit modeling of the Manaus urban plume with GECKO-A. Atmospheric Chemistry and Physics, 2020, 20, 5995-6014.	1.9	9
105	Synthesis and surface spectroscopy of Î±-pinene isotopologues and their corresponding secondary organic material. Chemical Science, 2019, 10, 8390-8398.	3.7	8
106	Unmanned Aerial Vehicle Measurements of Volatile Organic Compounds over a Subtropical Forest in China and Implications for Emission Heterogeneity. ACS Earth and Space Chemistry, 2021, 5, 247-256.	1.2	8
107	Optimization and Representativeness of Atmospheric Chemical Sampling by Hovering Unmanned Aerial Vehicles Over Tropical Forests. Earth and Space Science, 2021, 8, e2020EA001335.	1.1	8
108	River winds and pollutant recirculation near the Manaus city in the central Amazon. Communications Earth & Environment, 2021, 2, .	2.6	8

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109	Assessing the Nonlinear Effect of Atmospheric Variables on Primary and Oxygenated Organic Aerosol Concentration Using Machine Learning. ACS Earth and Space Chemistry, 2022, 6, 1059-1066.	1.2	8
110	Reconciling Observed and Predicted Tropical Rainforest OH Concentrations. Journal of Geophysical Research D: Atmospheres, 2022, 127, .	1.2	6
111	An Analytic Equation for the Volume Fraction of Condensationally Grown Mixed Particles and Applications to Secondary Organic Material Produced in Continuously Mixed Flow Reactors. Aerosol Science and Technology, 2014, 48, 803-812.	1.5	5
112	Synergistic Uptake by Acidic Sulfate Particles of Gaseous Mixtures of Glyoxal and Pinanediol. Environmental Science & Technology, 2020, 54, 11762-11770.	4.6	5
113	Production and Measurement of Organic Particulate Matter in a Flow Tube Reactor. Journal of Visualized Experiments, 2018, , .	0.2	4
114	Influence of Particle Surface Area Concentration on the Production of Organic Particulate Matter in a Continuously Mixed Flow Reactor. Environmental Science & Technology, 2019, 53, 4968-4976.	4.6	4
115	Near-canopy horizontal concentration heterogeneity of semivolatile oxygenated organic compounds and implications for 2-methyltetrols primary emissions. Environmental Science Atmospheres, 2021, 1, 8-20.	0.9	4
116	Planetary Boundary Layer Height Modulates Aerosolâ€"Water Vapor Interactions During Winter in the Megacity of Delhi. Journal of Geophysical Research D: Atmospheres, 2021, 126, e2021JD035681.	1.2	4
117	Partitioning of Organonitrates in the Production of Secondary Organic Aerosols from Î±-Pinene Photo-Oxidation. Environmental Science & Technology, 2022, 56, 5421-5429.	4.6	4
118	River Winds and Transport of Forest Volatiles in the Amazonian Riparian Ecoregion. Environmental Science & Technology, 2022, 56, 12667-12677.	4.6	4
119	Production and Measurement of Organic Particulate Matter in the Harvard Environmental Chamber. Journal of Visualized Experiments, 2018, , .	0.2	3
120	Temperature-Dependent Viscosity of Organic Materials Characterized by Atomic Force Microscope. Atmosphere, 2021, 12, 1476.	1.0	3