Michael W I Schmidt

List of Publications by Year
in descending order

103	14,376	44069 48	30922 102
papers	citations	h-index	g-index

132	132	132	12475
all docs	docs citations	times ranked	citing authors

#	Article	IF	Citations
1	Persistence of soil organic matter as an ecosystem property. Nature, 2011, 478, 49-56.	27.8	4,243
2	Black carbon in soils and sediments: Analysis, distribution, implications, and current challenges. Global Biogeochemical Cycles, 2000, 14, 777-793.	4.9	1,044
3	How relevant is recalcitrance for the stabilization of organic matter in soils?. Journal of Plant Nutrition and Soil Science, 2008, 171, 91-110.	1.9	586
4	Black (pyrogenic) carbon: a synthesis of current knowledge and uncertainties with special consideration of boreal regions. Biogeosciences, 2006, 3, 397-420.	3.3	559
5	Comparison of quantification methods to measure fireâ€derived (black/elemental) carbon in soils and sediments using reference materials from soil, water, sediment and the atmosphere. Global Biogeochemical Cycles, 2007, 21, .	4.9	483
6	Dissolved carbon leaching from soil is a crucial component of the net ecosystem carbon balance. Global Change Biology, 2011, 17, 1167-1185.	9.5	374
7	Measured soil organic matter fractions can be related to pools in the RothC model. European Journal of Soil Science, 2007, 58, 658-667.	3.9	343
8	Improvement of 13 C and 15 N CPMAS NMR spectra of bulk soils, particle size fractions and organic material by treatment with 10% hydrofluoric acid. European Journal of Soil Science, 1997, 48, 319-328.	3.9	333
9	Charred organic carbon in German chernozemic soils. European Journal of Soil Science, 1999, 50, 351-365.	3.9	293
10	Comparative analysis of black carbon in soils. Global Biogeochemical Cycles, 2001, 15, 163-167.	4.9	267
11	Effects of charring on mass, organic carbon, and stable carbon isotope composition of wood. Organic Geochemistry, 2002, 33, 1207-1223.	1.8	237
12	Aromaticity and degree of aromatic condensation of char. Organic Geochemistry, 2015, 78, 135-143.	1.8	207
13	Evaluation of an ultrasonic dispersion procedure to isolate primary organomineral complexes from soils. European Journal of Soil Science, 1999, 50, 87-94.	3.9	199
14	Fire-derived organic carbon in soil turns over on a centennial scale. Biogeosciences, 2012, 9, 2847-2857.	3.3	190
15	Synthesis and characterisation of laboratory-charred grass straw (Oryza sativa) and chestnut wood (Castanea sativa) as reference materials for black carbon quantification. Organic Geochemistry, 2006, 37, 1629-1633.	1.8	187
16	Determination of the aromaticity and the degree of aromatic condensation of a thermosequence of wood charcoal using NMR. Organic Geochemistry, 2011, 42, 1194-1202.	1.8	186
17	Carbon isotope geochemistry and nanomorphology of soil black carbon: Black chernozemic soils in central Europe originate from ancient biomass burning. Global Biogeochemical Cycles, 2002, 16, 70-1-70-8.	4.9	165
18	How surface fire in Siberian Scots pine forests affects soil organic carbon in the forest floor: Stocks, molecular structure, and conversion to black carbon (charcoal). Global Biogeochemical Cycles, 2003, 17, .	4.9	157

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19	Centennial black carbon turnover observed in a Russian steppe soil. Biogeosciences, 2008, 5, 1339-1350.	3.3	154
20	Pyrogenic Carbon in Soils: A Literature-Based Inventory and a Global Estimation of Its Content in Soil Organic Carbon and Stocks. Frontiers in Earth Science, 2016, 4, .	1.8	152
21	The benzene polycarboxylic acid (BPCA) pattern of wood pyrolyzed between 200Â°C and 1000Â°C. Organic Geochemistry, 2010, 41, 1082-1088.	1.8	146
22	Pyrogenic carbon soluble fraction is larger and more aromatic in aged charcoal than in fresh charcoal. Soil Biology and Biochemistry, 2011, 43, 1615-1617.	8.8	136
23	Pedogenesis of Chernozems in Central Europe â€" A review. Geoderma, 2007, 139, 288-299.	5.1	132
24	Characterisation and evaluation of reference materials for black carbon analysis using elemental composition, colour, BET surface area and 13C NMR spectroscopy. Applied Geochemistry, 2008, 23, 2113-2122.	3.0	129
25	Effects of increasing fire frequency on black carbon and organic matter in Podzols of Siberian Scots pine forests. European Journal of Soil Science, 2005, 56, 417-428.	3.9	115
26	Global-scale evidence for the refractory nature of riverine black carbon. Nature Geoscience, 2018, 11, 584-588.	12.9	111
27	Lignin turnover in arable soil and grassland analysed with two different labelling approaches. European Journal of Soil Science, 2007, 58, 599-608.	3.9	110
28	Mid-ocean ridge and supra-subduction geochemical signatures in spinelâ€"peridotites from the Neotethyan ophiolites in SW Turkey: Implications for upper mantle melting processes. Lithos, 2009, 113, 691-708.	1.4	110
29	Ryegrass-derived pyrogenic organic matter changes organic carbon and nitrogen mineralization in a temperate forest soil. Soil Biology and Biochemistry, 2014, 69, 291-301.	8.8	100
30	Five years of whole-soil warming led to loss of subsoil carbon stocks and increased CO ₂ efflux. Science Advances, 2021, 7, .	10.3	98
31	C 1s K-edge near edge X-ray absorption fine structure (NEXAFS) spectroscopy for characterizing functional group chemistry of black carbon. Organic Geochemistry, 2011, 42, 1055-1064.	1.8	96
32	Transformation and stabilization of pyrogenic organic matter in a temperate forest field experiment. Global Change Biology, 2014, 20, 1629-1642.	9.5	82
33	Plant Compounds and Their Turnover and Stabilization as Soil Organic Matter. , 2001, , 201-215.		80
34	Sodium hypochlorite separates an older soil organic matter fraction than acid hydrolysis. Geoderma, 2007, 139, 171-179.	5.1	76
35	Biochar by design. Nature Geoscience, 2014, 7, 326-327.	12.9	76
36	Impact of brown coal dust on the organic matter in particle-size fractions of a Mollisol. Organic Geochemistry, 1996, 25, 29-39.	1.8	72

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37	Nitrogen deposition promotes the production of new fungal residues but retards the decomposition of old residues in forest soil fractions. Global Change Biology, 2014, 20, 327-340.	9.5	72
38	A Critical Evaluation of the Relationship Between the Effective Cation Exchange Capacity and Soil Organic Carbon Content in Swiss Forest Soils. Frontiers in Forests and Global Change, 2020, 3, .	2.3	71
39	Cattle trampling alters soil properties and changes soil microbial communities in a Swiss sub-alpine pasture. Geoderma, 2012, 170, 369-377.	5.1	69
40	Improved automated extraction and separation procedure for soil lipid analyses. European Journal of Soil Science, 2004, 55, 349-356.	3.9	68
41	Nitrogen addition alters mineralization dynamics of ¹³<scp><scp>C</scp></scp>â€depleted leaf and twig litter and reduces leaching of older <scp>DOC</scp> from mineral soil. Global Change Biology, 2012, 18, 1412-1427.	9.5	68
42	Organic matter accumulating in Aeh and Bh horizons of a PodzolÂâ€" chemical characterization in primary organo-mineral associations. Organic Geochemistry, 2000, 31, 727-734.	1.8	66
43	Prehistoric alteration of soil in the Lower Rhine Basin, Northwest Germanyâ€"archaeological, 14C and geochemical evidence. Geoderma, 2006, 136, 38-50.	5.1	66
44	Carbon and nitrogen isotope composition of bulk soils, particle-size fractions and organic material after treatment with hydrofluoric acid. European Journal of Soil Science, 2005, 56, 407-416.	3.9	64
45	Comparison of gas with liquid chromatography for the determination of benzenepolycarboxylic acids as molecular tracers of black carbon. Organic Geochemistry, 2011, 42, 275-282.	1.8	62
46	Nature of organic nitrogen in fine particle size separates of sandy soils of highly industrialized areas as revealed by NMR spectroscopy. Soil Biology and Biochemistry, 2000, 32, 241-252.	8.8	59
47	Improved assessment of pyrogenic carbon quantity and quality in environmental samples by high-performance liquid chromatography. Journal of Chromatography A, 2013, 1304, 246-250.	3.7	57
48	Preservation of fire-derived carbon compounds and sorptive stabilisation promote the accumulation of organic matter in black soils of the Southern Alps. Geoderma, 2010, 159, 147-155.	5.1	55
49	Carbon budget in the black. Nature, 2004, 427, 305-307.	27.8	53
50	Organic matter in particle-size fractions from A and B horizons of a Haplic Alisol. European Journal of Soil Science, 2002, 53, 383-391.	3.9	51
51	Conversion of biomass to charcoal and the carbon mass balance from a slash-and-burn experiment in a temperate deciduous forest. Holocene, 2007, 17, 539-542.	1.7	49
52	Minor changes in soil organic carbon and charcoal concentrations detected in a temperate deciduous forest a year after an experimental slash-and-burn. Biogeosciences, 2007, 4, 377-383.	3.3	49
53	Marked isotopic variability within and between the Amazon River and marine dissolved black carbon pools. Nature Communications, 2019, 10, 4018.	12.8	47
54	Plant and soil lipid modifications under elevated atmospheric CO2 conditions: I. Lipid distribution patterns. Organic Geochemistry, 2008, 39, 91-102.	1.8	46

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55	Effects of sampling design on the probability to detect soil carbon stock changes at the Swiss CarboEurope site LÃgeren. Geoderma, 2009, 149, 347-354.	5.1	46
56	Plant and soil lipid modification under elevated atmospheric CO2 conditions: II. Stable carbon isotopic values (Î´13C) and turnover. Organic Geochemistry, 2008, 39, 103-117.	1.8	45
57	Rapid molecular screening of black carbon (biochar) thermosequences obtained from chestnut wood and rice straw: A pyrolysis-GC/MS study. Biomass and Bioenergy, 2012, 45, 115-129.	5.7	44
58	Particle size fractionation of soil containing coal and combusted particles. European Journal of Soil Science, 1999, 50, 515-522.	3.9	43
59	Tropical forest soil carbon stocks do not increase despite 15 years of doubled litter inputs. Scientific Reports, 2019, 9, 18030.	3.3	43
60	Summer drought reduces total and litter-derived soil CO₂ effluxes in temperate grassland â€“ clues from a ¹³C litter addition experiment. Biogeosciences, 2010, 7, 1031-1041.	3.3	41
61	Lignin is preserved in the fine silt fraction of an arable Luvisol. Organic Geochemistry, 2007, 38, 2001-2011.	1.8	40
62	Lignin content and chemical characteristics in maize and wheat vary between plant organs and growth stages: consequences for assessing lignin dynamics in soil. Plant and Soil, 2011, 343, 369-378.	3.7	39
63	Lignin dynamics in two ‹sup›13‹/sup›Câ€labelled arable soils during 18â€ƒyears. European Journal of Soil Science, 2009, 60, 250-257.	3.9	38
64	Different pools of black carbon in sediments from the Gulf of CÃ¡diz (SW Spain): Method comparison and spatial distribution. Marine Chemistry, 2013, 151, 13-22.	2.3	38
65	Carbon losses from pyrolysed and original wood in a forest soil under natural and increased N deposition. Biogeosciences, 2014, 11, 5199-5213.	3.3	38
66	Assessing the quantitative reliability of solid-state 13C NMR spectra of kerogens across a gradient of thermal maturity. Solid State Nuclear Magnetic Resonance, 2006, 29, 312-321.	2.3	37
67	Comprehensive radiocarbon analysis of benzene polycarboxylic acids (BPCAs) derived from pyrogenic carbon in environmental samples. Radiocarbon, 2017, 59, 1103-1116.	1.8	37
68	Source and turnover of organic matter in agricultural soils derived from n-alkane/n-carboxylic acid compositions and C-isotope signatures. Organic Geochemistry, 2004, 35, 1371-1393.	1.8	37
69	Charcoal quality does not change over a century in a tropical agro-ecosystem. Soil Biology and Biochemistry, 2011, 43, 1992-1994.	8.8	36
70	Pyrogenic carbon quantity and quality unchanged after 55 years of organic matter depletion in a Chernozem. Soil Biology and Biochemistry, 2011, 43, 1985-1988.	8.8	35
71	Quantifying pyrogenic carbon from thermosequences of wood and grass using hydrogen pyrolysis. Organic Geochemistry, 2013, 62, 28-32.	1.8	35
72	The changing faces of soil organic matter research. European Journal of Soil Science, 2018, 69, 23-30.	3.9	35

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73	Warming promotes loss of subsoil carbon through accelerated degradation of plant-derived organic matter. Soil Biology and Biochemistry, 2021, 156, 108185.	8.8	35
74	Effect of permafrost on the formation of soil organic carbon pools and their physicalâ€“chemical properties in the Eastern Swiss Alps. Catena, 2013, 110, 70-85.	5.0	34
75	Toward a â€œMolecular Thermometerâ€• to Estimate the Charring Temperature of Wildland Charcoals Derived from Different Biomass Sources. Environmental Science & Technology, 2013, 47, 11490-11495.	10.0	34
76	Final recommendations for reference materials in black carbon analysis. Eos, 2003, 84, 582-582.	0.1	33
77	Decomposition pathways of 13C-depleted leaf litter in forest soils of the Swiss Jura. Biogeochemistry, 2012, 108, 395-411.	3.5	32
78	Interactive effects of elevated <scp>CO</scp>₂ and nitrogen deposition on fatty acid molecular and isotope composition of aboveâ€• and belowground tree biomass and forest soil fractions. Global Change Biology, 2015, 21, 473-486.	9.5	28
79	Quantification of pyrogenic carbon in the environment: An integration of analytical approaches. Organic Geochemistry, 2016, 100, 42-50.	1.8	28
80	Airborne Contamination of Forest Soils by Carbonaceous Particles from Industrial Coal Processing. Journal of Environmental Quality, 2000, 29, 768-777.	2.0	27
81	Can we use the CO₂concentrations determined by continuousâ€flow isotope ratio mass spectrometry from small samples for the Keeling plot approach?. Rapid Communications in Mass Spectrometry, 2008, 22, 4029-4034.	1.5	27
82	What on Earth Have We Been Burning? Deciphering Sedimentary Records of Pyrogenic Carbon. Environmental Science & Technology, 2017, 51, 12972-12980.	10.0	23
83	Extractable lipid contents and colour in particle-size separates and bulk arable soils. European Journal of Soil Science, 2006, 57, 634-643.	3.9	22
84	Characterization, Quantification and Compound-specific Isotopic Analysis of Pyrogenic Carbon Using Benzene Polycarboxylic Acids (BPCA). Journal of Visualized Experiments, 2016, , .	0.3	21
85	Does ultrasonic dispersion and homogenization by ball milling change the chemical structure of organic matter in geochemical samples?â€”a CPMAS 13C NMR study with lignin. Organic Geochemistry, 1997, 26, 491-496.	1.8	19
86	Discrepancies in utilization of density fractionation along with ultrasonic dispersion to obtain distinct pools of soil organic matter. Journal of Plant Nutrition and Soil Science, 2013, 176, 500-504.	1.9	19
87	Dating Charred Soil Organic Matter: Comparison of Radiocarbon Ages from Macrocharcoals and Chemically Separated Charcoal Carbon. Radiocarbon, 2009, 51, 437-443.	1.8	18
88	Stable isotopic analysis of pyrogenic organic matter in soils by liquid chromatographyâ€“isotopeâ€•ratio mass spectrometry of benzene polycarboxylic acids. Rapid Communications in Mass Spectrometry, 2011, 25, 3723-3731.	1.5	16
89	Radiocarbon ages of soil charcoals from the southern Alps, Ticino, Switzerland. Nuclear Instruments & Methods in Physics Research B, 2007, 259, 398-402.	1.4	15
90	Warming and elevated CO₂ promote rapid incorporation and degradation of plantâ€derived organic matter in an ombrotrophic peatland. Global Change Biology, 2022, 28, 883-898.	9.5	15

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91	Mineral fertilization did not affect decay of old lignin and SOC in a ¹³C-labeled arable soil over 36 years. Biogeosciences, 2009, 6, 1139-1148.	3.3	13
92	Purification of fire derived markers for Î¼g scale isotope analysis (Î´13C, Î”14C) using high performance liquid chromatography (HPLC). Organic Geochemistry, 2014, 70, 1-9.	1.8	13
93	Ecosystem organic carbon storage and their drivers across the drylands of China. Catena, 2022, 214, 106280.	5.0	13
94	A call for international soil experiment networks for studying, predicting, and managing global change impacts. Soil, 2015, 1, 575-582.	4.9	12
95	Decoupled sedimentary records of combustion: Causes and implications. Geophysical Research Letters, 2016, 43, 5098-5108.	4.0	11
96	Forest-derived lignin biomarkers in an Australian oxisol decrease substantially after 90years of pasture. Organic Geochemistry, 2010, 41, 1219-1224.	1.8	10
97	Comparison of solid-state 13C NMR spectra of soil organic matter from an experimental burning site acquired at two field strengths. Soil Research, 2008, 46, 122.	1.1	7
98	How far do experimentally elevated CO₂ levels reach into the surrounding? â€“ An example using the ¹³C label of soil organic matter as an archive. Global Change Biology, 2009, 15, 1598-1602.	9.5	7
99	The MICE facility â€“ a new tool to study plantâ€“soil C cycling with a holistic approach. Isotopes in Environmental and Health Studies, 2017, 53, 286-297.	1.0	6
100	Whole-soil warming decreases abundance and modifies the community structure of microorganisms in the subsoil but not in surface soil. Soil, 2021, 7, 477-494.	4.9	5
101	The Structure of Organic Nitrogen in Particle Size Fractions Determined by 15N CPMAS NMR. , 1999, , 143-149.		4
102	Unifying Concepts of Organic Matter Cycling in Soil, River, and Marine Environments. Eos, 2013, 94, 145-145.	0.1	1
103	The Earth in accelerated change : habitats in the 21st century : divergence and convergence in geography â€“ approaches and perspectives at the Department of Geography, University of Zurich. Geographica Helvetica, 2003, 58, 184-196.	0.8	1