Markus Kleber

List of Publications by Year
in descending order

100 papers	21,828 citations	43973 48 h-index	34900 98 g-index
102 all docs	102 docs citations	102 times ranked	17444 citing authors

#	Article	IF	Citations
1	Persistence of soil organic matter as an ecosystem property. Nature, 2011, 478, 49-56.	13.7	4,243
2	The contentious nature of soil organic matter. Nature, 2015, 528, 60-68.	13.7	2,418
3	Dynamic Molecular Structure of Plant Biomass-Derived Black Carbon (Biochar). Environmental Science & Technology, 2010, 44, 1247-1253.	4.6	2,267
4	A conceptual model of organo-mineral interactions in soils: self-assembly of organic molecular fragments into zonal structures on mineral surfaces. Biogeochemistry, 2007, 85, 9-24.	1.7	898
5	Organoâ€mineral associations in temperate soils: Integrating biology, mineralogy, and organic matter chemistry. Journal of Plant Nutrition and Soil Science, 2008, 171, 61-82.	1.1	892
6	Mineralâ€“Organic Associations: Formation, Properties, and Relevance in Soil Environments. Advances in Agronomy, 2015, 130, 1-140.	2.4	801
7	Redox Properties of Plant Biomass-Derived Black Carbon (Biochar). Environmental Science & Technology, 2014, 48, 5601-5611.	4.6	791
8	Mineral protection of soil carbon counteracted by root exudates. Nature Climate Change, 2015, 5, 588-595.	8.1	694
9	Stabilization of Soil Organic Matter: Association with Minerals or Chemical Recalcitrance?. Biogeochemistry, 2006, 77, 25-56.	1.7	681
10	Molecular-Level Interactions in Soils and Sediments: The Role of Aromatic Ï€-Systems. Environmental Science & Technology, 2009, 43, 3421-3429.	4.6	467
11	Organic C and N stabilization in a forest soil: Evidence from sequential density fractionation. Soil Biology and Biochemistry, 2006, 38, 3313-3324.	4.2	370
12	Persistence of soil organic carbon caused by functional complexity. Nature Geoscience, 2020, 13, 529-534.	5.4	363
13	Stabilisation of soil organic matter by interactions with minerals as revealed by mineral dissolution and oxidative degradation. Organic Geochemistry, 2003, 34, 1591-1600.	0.9	362
14	Water uptake in biochars: The roles of porosity and hydrophobicity. Biomass and Bioenergy, 2014, 61, 196-205.	2.9	351
15	Old and stable soil organic matter is not necessarily chemically recalcitrant: implications for modeling concepts and temperature sensitivity. Global Change Biology, 2011, 17, 1097-1107.	4.2	318
16	What is recalcitrant soil organic matter?. Environmental Chemistry, 2010, 7, 320.	0.7	314
17	Dynamic interactions at the mineralâ€“organic matter interface. Nature Reviews Earth & Environment, 2021, 2, 402-421.	12.2	301
18	Anaerobic microsites have an unaccounted role in soil carbon stabilization. Nature Communications, 2017, 8, 1771.	5.8	276

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19	Advances in Understanding the Molecular Structure of Soil Organic Matter. Advances in Agronomy, 2010, 106, 77-142.	2.4	255
20	Solvent-Extractable Polycyclic Aromatic Hydrocarbons in Biochar: Influence of Pyrolysis Temperature and Feedstock. Environmental Science & Technology, 2012, 46, 9333-9341.	4.6	238
21	Are oxygen limitations under recognized regulators of organic carbon turnover in upland soils?. Biogeochemistry, 2016, 127, 157-171.	1.7	236
22	Aromaticity and degree of aromatic condensation of char. Organic Geochemistry, 2015, 78, 135-143.	0.9	207
23	Review of XRD-based quantitative analyses of clay minerals in soils: the suitability of mineral intensity factors. Geoderma, 2002, 109, 191-205.	2.3	175
24	Long-term litter decomposition controlled by manganese redox cycling. Proceedings of the National Academy of Sciences of the United States of America, 2015, 112, E5253-60.	3.3	168
25	Polar and aliphatic domains regulate sorption of phthalic acid esters (PAEs) to biochars. Bioresource Technology, 2012, 118, 120-127.	4.8	163
26	Quantitative Analysis of Fullerene Nanomaterials in Environmental Systems: A Critical Review. Environmental Science & Technology, 2009, 43, 6463-6474.	4.6	156
27	Sorption of fluorinated herbicides to plant biomass-derived biochars as a function of molecular structure. Bioresource Technology, 2011, 102, 9897-9903.	4.8	148
28	13C and 15N stabilization dynamics in soil organic matter fractions during needle and fine root decomposition. Organic Geochemistry, 2008, 39, 465-477.	0.9	144
29	Persistence of soil organic matter in eroding versus depositional landform positions. Journal of Geophysical Research, 2012, 117, .	3.3	138
30	Erosion, deposition, and the persistence of soil organic matter: mechanistic considerations and problems with terminology. Earth Surface Processes and Landforms, 2013, 38, 908-912.	1.2	138
31	How air-drying and rewetting modify soil organic matter characteristics: An assessment to improve data interpretation and inference. Soil Biology and Biochemistry, 2015, 80, 324-340.	4.2	135
32	Humic Substances Extracted by Alkali Are Invalid Proxies for the Dynamics and Functions of Organic Matter in Terrestrial and Aquatic Ecosystems. Journal of Environmental Quality, 2019, 48, 207-216.	1.0	124
33	Sodium hypochlorite oxidation reduces soil organic matter concentrations without affecting inorganic soil constituents. European Journal of Soil Science, 2005, 56, 481-490.	1.8	121
34	Nano-scale investigation of the association of microbial nitrogen residues with iron (hydr)oxides in a forest soil O-horizon. Geochimica Et Cosmochimica Acta, 2012, 95, 213-226.	1.6	107
35	NanoSIMS Study of Organic Matter Associated with Soil Aggregates: Advantages, Limitations, and Combination with STXM. Environmental Science & Technology, 2012, 46, 3943-3949.	4.6	104
36	Retention of dissolved organic matter by phyllosilicate and soil clay fractions in relation to mineral properties. Organic Geochemistry, 2004, 35, 269-276.	0.9	103

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37	Poorly crystalline minerals protect organic carbon in clay subfractions from acid subsoil horizons. Geoderma, 2005, 128, 106-115.	2.3	98
38	Halloysite versus gibbsite: Silicon cycling as a pedogenetic process in two lowland neotropical rain forest soils of La Selva, Costa Rica. Geoderma, 2007, 138, 1-11.	2.3	98
39	Long residence times of rapidly decomposable soil organic matter: application of a multi-phase, multi-component, and vertically resolved model (BAMS1) to soil carbon dynamics. Geoscientific Model Development, 2014, 7, 1335-1355.	1.3	97
40	Sorption of Fluorotelomer Sulfonates, Fluorotelomer Sulfonamido Betaines, and a Fluorotelomer Sulfonamido Amine in National Foam Aqueous Film-Forming Foam to Soil. Environmental Science & Technology, 2017, 51, 12394-12404.	4.6	94
41	Black carbon in grassland ecosystems of the world. Global Biogeochemical Cycles, 2010, 24, .	1.9	81
42	Carbon storage in loess derived surface soils from Central Germany: Influence of mineral phase variables. Journal of Plant Nutrition and Soil Science, 2002, 165, 141.	1.1	71
43	Advances in the Analysis of Biogeochemical Interfaces. Advances in Agronomy, 2013, , 1-46.	2.4	69
44	Transfer of litter-derived N to soil mineralâ€“organic associations: Evidence from decadal 15N tracer experiments. Organic Geochemistry, 2012, 42, 1489-1501.	0.9	64
45	Density fractions versus size separates: does physical fractionation isolate functional soil compartments?. Biogeosciences, 2012, 9, 5181-5197.	1.3	62
46	From pools to flow: The PROMISE framework for new insights on soil carbon cycling in a changing world. Global Change Biology, 2020, 26, 6631-6643.	4.2	57
47	Predicting carbon content in illitic clay fractions from surface area, cation exchange capacity and dithionite-extractable iron. European Journal of Soil Science, 2002, 53, 639-644.	1.8	56
48	A dual isotope approach to isolate soil carbon pools of different turnover times. Biogeosciences, 2013, 10, 8067-8081.	1.3	52
49	Carbon Storage in Coarse and Fine Clay Fractions of Illitic Soils. Soil Science Society of America Journal, 2003, 67, 1732-1739.	1.2	51
50	PREHISTORIC ALTERATION OF SOIL PROPERTIES IN A CENTRAL GERMAN CHERNOZEMIC SOIL. Soil Science, 2003, 168, 292-306.	0.9	42
51	Andosols in Germanyâ€”pedogenesis and properties. Catena, 2004, 56, 67-83.	2.2	39
52	Changes in surface reactivity and organic matter composition of clay subfractions with duration of fertilizer deprivation. European Journal of Soil Science, 2004, 55, 381-391.	1.8	38
53	Retention of dissolved organic matter by illitic soils and clay fractions: Influence of mineral phase properties. Journal of Plant Nutrition and Soil Science, 2003, 166, 737-741.	1.1	37
54	Application of ultrasound to disperse soil aggregates of high mechanical stability. Journal of Plant Nutrition and Soil Science, 2012, 175, 521-526.	1.1	35

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55	Linking soil classification and soil dynamics â€” pedological and ecological perspectives. Journal of Plant Nutrition and Soil Science, 2002, 165, 517.	1.1	35
56	Variation of Preferred Orientation in Oriented Clay Mounts as a Result of Sample Preparation and Composition. Clays and Clay Minerals, 2009, 57, 686-694.	0.6	33
57	Proteinâ€"Mineral Interactions: Molecular Dynamics Simulations Capture Importance of Variations in Mineral Surface Composition and Structure. Langmuir, 2016, 32, 6194-6209.	1.6	31
58	Abiotic Protein Fragmentation by Manganese Oxide: Implications for a Mechanism to Supply Soil Biota with Oligopeptides. Environmental Science & Technology, 2016, 50, 3486-3493.	4.6	30
59	Influence of Calcium Carbonate and Charcoal Applications on Organic Matter Storage in Siltâ€Sized Aggregates Formed during a Microcosm Experiment. Soil Science Society of America Journal, 2014, 78, 1624-1631.	1.2	29
60	A simple technique to eliminate ethylene emissions from biochar amendment in agriculture. Agronomy for Sustainable Development, 2013, 33, 469-474.	2.2	28
61	Ion exchange resinâ€"soil mixtures as a tool in net nitrogen mineralisation studies. Soil Biology and Biochemistry, 2000, 32, 1529-1536.	4.2	24
62	Quantifying biogeochemical heterogeneity in soil systems. Geoderma, 2018, 324, 89-97.	2.3	23
63	The mechanisms of organic carbon protection and dynamics of <scp>C</scp>â€saturation in <scp>O</scp>xisols vary with particleâ€size distribution. European Journal of Soil Science, 2017, 68, 726-739.	1.8	22
64	Soil organic matter stabilization pathways in clay sub-fractions from a time series of fertilizer deprivation. Organic Geochemistry, 2005, 36, 1311-1322.	0.9	21
65	Redox Properties of Pyrogenic Dissolved Organic Matter (pyDOM) from Biomass-Derived Chars. Environmental Science & Technology, 2021, 55, 11434-11444.	4.6	21
66	Can Biochar Covers Reduce Emissions from Manure Lagoons While Capturing Nutrients?. Journal of Environmental Quality, 2017, 46, 659-666.	1.0	19
67	First estimates of regional (AllgÃu, Germany) and global CH4 fluxes from wet colluvial margins of closed depressions in glacial drift areas. Agriculture, Ecosystems and Environment, 2004, 103, 251-257.	2.5	18
68	Macronutrients in Soil and Wheat as Affected by a Long-Term Tillage and Nitrogen Fertilization in Winter Wheatâ€"Fallow Rotation. Agronomy, 2019, 9, 178.	1.3	17
69	Synchrotron-Based Mass Spectrometry to Investigate the Molecular Properties of Mineralâ€"Organic Associations. Analytical Chemistry, 2013, 85, 6100-6106.	3.2	16
70	The Ability of Soil Pore Network Metrics to Predict Redox Dynamics is Scale Dependent. Soil Systems, 2018, 2, 66.	1.0	16
71	Effect of tillage on macronutrients in soil and wheat of a long-term dryland wheat-pea rotation. Soil and Tillage Research, 2019, 190, 194-201.	2.6	16
72	An Andosol from Eastern Saxony, Germany. Journal of Plant Nutrition and Soil Science, 2003, 166, 533-542.	1.1	15

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73	Andosols and soils with andic properties in the German soil taxonomy. Journal of Plant Nutrition and Soil Science, 2007, 170, 317-328.	1.1	15
74	The Important Role of Enzyme Adsorbing Capacity of Soil Minerals in Regulating Î²â€Glucosidase Activity. Geophysical Research Letters, 2022, 49, .	1.5	15
75	Micronutrients decline under long-term tillage and nitrogen fertilization. Scientific Reports, 2019, 9, 12020.	1.6	14
76	Macronutrient in soils and wheat from long-term agroexperiments reflects variations in residue and fertilizer inputs. Scientific Reports, 2020, 10, 3263.	1.6	14
77	Carbohydrates protect protein against abiotic fragmentation by soil minerals. Scientific Reports, 2018, 8, 813.	1.6	13
78	Construction and Evaluation of Redox Electrode with Summing Operational Amplifier: Application in Study of Methane Emission. Communications in Soil Science and Plant Analysis, 2003, 34, 481-496.	0.6	12
79	Mineral Surfaces as Agents of Environmental Proteolysis: Mechanisms and Controls. Environmental Science & Technology, 2019, 53, 3018-3026.	4.6	11
80	Formation of mineral N (NH4+, NO3â€") during mineralization of organic matter from coal refuse material and municipal sludge. Journal of Plant Nutrition and Soil Science, 2000, 163, 73-80.	1.1	10
81	Preparing a soil carbon inventory of Saxony-Anhalt, Central Germany using GIS and the state soil data base SABO_P. Journal of Plant Nutrition and Soil Science, 2003, 166, 642-648.	1.1	9
82	Demonstration of the rapid incorporation of carbon into protective, mineral-associated organic carbon fractions in an eroded soil from the CarboZALF experimental site. Plant and Soil, 2018, 430, 329-348.	1.8	9
83	Micronutrients in the Soil and Wheat: Impact of 84 Years of Organic or Synthetic Fertilization and Crop Residue Management. Agronomy, 2019, 9, 464.	1.3	9
84	Contribution of different catalytic types of peptidases to soil proteolytic activity. Soil Biology and Biochemistry, 2019, 138, 107578.	4.2	9
85	Microbial biomass Câ€•and Nâ€dynamics in grassland soils amended with liquid manure. Zeitschrift Fur Pflanzenernahrung Und Bodenkunde = Journal of Plant Nutrition and Plant Science, 1998, 161, 87-92.	0.4	8
86	Response to the Opinion paper by Margit von LÃ¼tzow and Ingrid KÃ¶gel-Knabner on 'What is recalcitrant soil organic matter?' by Markus Kleber. Environmental Chemistry, 2010, 7, 336.	0.7	8
87	Differential capacity of kaolinite and birnessite to protect surface associated proteins against thermal degradation. Soil Biology and Biochemistry, 2018, 119, 101-109.	4.2	8
88	Das mineralinventar der versuchsflaÂ¨che "statischer dauerduÂ¨ngungsversuch v120, bad lauchstaÂ¨dt". Archives of Agronomy and Soil Science, 2002, 48, 227-240.	1.3	7
89	Micronutrient Concentrations in Soil and Wheat Decline by Long-Term Tillage and Winter Wheatâ€"Pea Rotation. Agronomy, 2019, 9, 359.	1.3	6
90	Annual grassland resource pools and fluxes: sensitivity to precipitation and dry periods on two contrasting soils. Ecosphere, 2012, 3, art70-art70.	1.0	5

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91	Carbon stocks in umbric ferralsols driven by plant productivity and geomorphic processes, not by mineral protection. Earth Surface Processes and Landforms, 2022, 47, 491-508.	1.2	5
92	Title is missing!. Soil Science, 2003, 168, 292-306.	0.9	4
93	Biopolymers and Macromolecules. Encyclopedia of Earth Sciences Series, 2017, , 1-5.	0.1	2
94	Stickstoffumsatz in einer LÃ¶ÃŸcatena. Journal of Plant Nutrition and Soil Science, 1999, 162, 329-336.	1.1	1
95	Extraction of fullerenes from environmental matrices as affected by solvent characteristics and analyte concentration. Journal of Separation Science, 2013, 36, 953-958.	1.3	1
96	Carbon Sink Strength of Subsurface Horizons in Brazilian Oxisols. Soil Science Society of America Journal, 2018, 82, 76-86.	1.2	1
97	Response to â€˜Stochastic and deterministic interpretation of pool modelsâ€™. Global Change Biology, 2021, 27, e11-e12.	4.2	1
98	Reply to â€œComment on â€˜Humic Substances Extracted by Alkali Are Invalid Proxies for the Dynamics and Functions of Organic Matter in Terrestrial and Aquatic Ecosystems,â€™ by Kleber and Lehmann (2019)â€• Journal of Environmental Quality, 2019, 48, 790-791.	1.0	0
99	Response to â€œConnectivity and pore accessibility in models of soil carbon cyclingâ€• Global Change Biology, 2021, 27, e15-e16.	4.2	0
100	Biopolymers and Macromolecules. Encyclopedia of Earth Sciences Series, 2018, , 148-153.	0.1	0