

# Balwant Singh

## List of Publications by Year in descending order

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127  
papers

8,378  
citations

53794

45  
h-index

48315

88  
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132  
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132  
docs citations

132  
times ranked

8905  
citing authors

#	ARTICLE	IF	CITATIONS
1	Characterisation and evaluation of biochars for their application as a soil amendment. <i>Soil Research</i> , 2010, 48, 516.	1.1	763
2	Influence of Biochars on Nitrous Oxide Emission and Nitrogen Leaching from Two Contrasting Soils. <i>Journal of Environmental Quality</i> , 2010, 39, 1224-1235.	2.0	630
3	Heavy Metals Contamination in Vegetables Grown in Urban and Metal Smelter Contaminated Sites in Australia. <i>Water, Air, and Soil Pollution</i> , 2006, 169, 101-123.	2.4	358
4	Influence of biochar application to soil on the availability of As, Cd, Cu, Pb, and Zn to maize ( <i>Zea mays</i> ) Tj ETQq0 0 0 rgBT /Overlock 10 T	1.1	317
5	Simultaneous estimation of several soil properties by ultra-violet, visible, and near-infrared reflectance spectroscopy. <i>Soil Research</i> , 2003, 41, 1101.	1.1	295
6	Competitive adsorption behavior of heavy metals on kaolinite. <i>Journal of Colloid and Interface Science</i> , 2005, 290, 28-38.	9.4	295
7	Interactive Priming of Biochar and Labile Organic Matter Mineralization in a Smectite-Rich Soil. <i>Environmental Science &amp; Technology</i> , 2011, 45, 9611-9618.	10.0	282
8	Field trials to assess the uptake of arsenic by vegetables from contaminated soils and soil remediation with iron oxides. <i>Science of the Total Environment</i> , 2003, 311, 19-33.	8.0	227
9	Aging Induced Changes in Biochar's Functionality and Adsorption Behavior for Phosphate and Ammonium. <i>Environmental Science &amp; Technology</i> , 2017, 51, 8359-8367.	10.0	192
10	Biochar carbon stability in four contrasting soils. <i>European Journal of Soil Science</i> , 2014, 65, 60-71.	3.9	190
11	NEXAFS and XPS characterisation of carbon functional groups of fresh and aged biochars. <i>Organic Geochemistry</i> , 2014, 77, 1-10.	1.8	188
12	Biochar effects on crop yields with and without fertilizer: A meta-analysis of field studies using separate controls. <i>Soil Use and Management</i> , 2020, 36, 2-18.	4.9	188
13	Properties and distribution of iron oxides and their association with minor elements in the soils of south-western Australia. <i>Journal of Soil Science</i> , 1992, 43, 77-98.	1.2	187
14	Effect of temperature on biochar priming effects and its stability in soils. <i>Soil Biology and Biochemistry</i> , 2015, 80, 136-145.	8.8	161
15	Arsenic Speciation and Phytoavailability in Contaminated Soils Using a Sequential Extraction Procedure and XANES Spectroscopy. <i>Environmental Science &amp; Technology</i> , 2011, 45, 7135-7142.	10.0	140
16	Soil carbon and nitrogen stocks in forests along an altitudinal gradient in the eastern Himalayas and a meta-analysis of global data. <i>Global Change Biology</i> , 2016, 22, 2255-2268.	9.5	129
17	The long-term role of organic amendments in building soil nutrient fertility: a meta-analysis and review. <i>Nutrient Cycling in Agroecosystems</i> , 2018, 111, 103-125.	2.2	129
18	Agronomic performance of a high ash biochar in two contrasting soils. <i>Agriculture, Ecosystems and Environment</i> , 2014, 191, 99-107.	5.3	120

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19	Properties of soil kaolinites from south-western Australia. <i>Journal of Soil Science</i> , 1992, 43, 645-667.	1.2	116
20	Ultra-violet, visible, near-infrared, and mid-infrared diffuse reflectance spectroscopic techniques to predict several soil properties. <i>Soil Research</i> , 2005, 43, 713.	1.1	111
21	Phosphorus sorption in relation to soil properties for the major soil types of South-Western Australia. <i>Soil Research</i> , 1991, 29, 603.	1.1	110
22	Cadmium adsorption and desorption behaviour on goethite at low equilibrium concentrations: effects of pH and index cations. <i>Chemosphere</i> , 2004, 57, 1325-1333.	8.2	91
23	Incorporation of Cr, Mn and Ni into goethite ( $\hat{\pm}$ -FeOOH): mechanism from extended X-ray absorption fine structure spectroscopy. <i>Clay Minerals</i> , 2002, 37, 639-649.	0.6	90
24	Aged acidic biochar increases nitrogen retention and decreases ammonia volatilization in alkaline bauxite residue sand. <i>Ecological Engineering</i> , 2017, 98, 157-165.	3.6	90
25	Surface speciation of Cd(II) and Pb(II) on kaolinite by XAFS spectroscopy. <i>Journal of Colloid and Interface Science</i> , 2007, 315, 21-32.	9.4	88
26	Dissolution of illite in saline acidic solutions at 25 $\hat{\circ}$ C. <i>Geochimica Et Cosmochimica Acta</i> , 2011, 75, 3237-3249.	3.9	85
27	Temperature sensitivity of biochar and native carbon mineralisation in biochar-amended soils. <i>Agriculture, Ecosystems and Environment</i> , 2014, 191, 158-167.	5.3	83
28	Phytoremediation of an arsenic-contaminated site using <i>Pteris vittata</i> L. and <i>Pityrogramma calomelanos</i> var. <i>austroamericana</i> : a long-term study. <i>Environmental Science and Pollution Research</i> , 2012, 19, 3506-3515.	5.3	76
29	Aged biochar affects gross nitrogen mineralization and recovery: a $<sup>15</sup>$ N study in two contrasting soils. <i>GCB Bioenergy</i> , 2017, 9, 1196-1206.	5.6	76
30	Copper and arsenate co-sorption at the mineral-water interfaces of goethite and jarosite. <i>Journal of Colloid and Interface Science</i> , 2008, 322, 399-413.	9.4	75
31	Mid-infrared spectroscopy and partial least-squares regression to estimate soil arsenic at a highly variable arsenic-contaminated site. <i>International Journal of Environmental Science and Technology</i> , 2015, 12, 1965-1974.	3.5	74
32	Influence of mineral characteristics on the retention of low molecular weight organic compounds: A batch sorption-desorption and ATR-FTIR study. <i>Journal of Colloid and Interface Science</i> , 2014, 432, 246-257.	9.4	70
33	Concentration of iron oxides from soil clays by 5 m NaOH treatment: the complete removal of sodalite and kaolin. <i>Clay Minerals</i> , 1991, 26, 463-472.	0.6	64
34	Desorption of cadmium from goethite: Effects of pH, temperature and aging. <i>Chemosphere</i> , 2006, 64, 856-865.	8.2	62
35	Influence of soil texture and mineralogy on organic matter content and composition in physically separated fractions soils of Thailand. <i>Geoderma</i> , 2013, 195-196, 207-219.	5.1	62
36	A Fourier Transform Infrared Study of Biochar Aging in Soils. <i>Soil Science Society of America Journal</i> , 2016, 80, 613-622.	2.2	62

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37	The effects of cadmium, copper, lead, and zinc on the growth and reproduction of <i>Proisotoma minuta</i> Tullberg (Collembola). <i>Ecotoxicology and Environmental Safety</i> , 2005, 60, 306-314.	6.0	57
38	Biochar reduces the rhizosphere priming effect on soil organic carbon. <i>Soil Biology and Biochemistry</i> , 2015, 88, 372-379.	8.8	57
39	Heavy metal tolerance in common fern species. <i>Australian Journal of Botany</i> , 2007, 55, 63.	0.6	56
40	Structural Chemistry of Fe, Mn, and Ni in Synthetic Hematites as Determined by Extended X-Ray Absorption Fine Structure Spectroscopy. <i>Clays and Clay Minerals</i> , 2000, 48, 521-527.	1.3	55
41	Simultaneous incorporation of Cr, Zn, Cd, and Pb in the goethite structure. <i>Clays and Clay Minerals</i> , 2009, 57, 234-250.	1.3	50
42	Akaganite ( $\text{Fe}^{2+}\text{-FeOOH}$ ) precipitation in inland acid sulfate soils of south-western New South Wales (NSW), Australia. <i>Geochimica Et Cosmochimica Acta</i> , 2011, 75, 6429-6438.	3.9	50
43	Surface charge properties of kaolinite from Thai soils. <i>Geoderma</i> , 2013, 192, 120-131.	5.1	49
44	Opportunities and constraints for biochar technology in Australian agriculture: looking beyond carbon sequestration. <i>Soil Research</i> , 2014, 52, 739.	1.1	49
45	Inorganic and organic carbon dynamics in a limed acid soil are mediated by plants. <i>Soil Biology and Biochemistry</i> , 2013, 57, 549-555.	8.8	47
46	Organo-mineral interactions in contrasting soils under natural vegetation. <i>Frontiers in Environmental Science</i> , 2014, 2, .	3.3	46
47	Effects of insoluble Zn, Cd, and EDTA on the growth, activities of antioxidant enzymes and uptake of Zn and Cd in <i>Vetiveria zizanioides</i> . <i>Journal of Environmental Sciences</i> , 2009, 21, 186-192.	6.1	45
48	The preparation and characterization of vanadium-substituted goethite: The importance of temperature. <i>Geochimica Et Cosmochimica Acta</i> , 2009, 73, 582-593.	3.9	45
49	Potassium and magnesium in clay minerals of some Brazilian soils as indicated by A sequential extraction procedure. <i>Communications in Soil Science and Plant Analysis</i> , 2002, 33, 2203-2225.	1.4	43
50	Effect of ageing on surface charge characteristics and adsorption behaviour of cadmium and arsenate in two contrasting soils amended with biochar. <i>Soil Research</i> , 2014, 52, 155.	1.1	43
51	Organic carbon characteristics in density fractions of soils with contrasting mineralogies. <i>Geochimica Et Cosmochimica Acta</i> , 2017, 218, 215-236.	3.9	43
52	Carbon storage in cotton soils of northern New South Wales. <i>Soil Research</i> , 2003, 41, 889.	1.1	42
53	The Nature of Soil Kaolins from Indonesia and Western Australia. <i>Clays and Clay Minerals</i> , 2002, 50, 198-207.	1.3	41
54	Mineralogy and chemistry of ochre sediments from an acid mine drainage near a disused mine in Cornwall, UK. <i>Clay Minerals</i> , 1999, 34, 301-317.	0.6	40

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55	Evaluation of Spatial Variability of Soil Arsenic Adjacent to a Disused Cattle-Dip Site, Using Model-Based Geostatistics. <i>Environmental Science &amp; Technology</i> , 2011, 45, 10463-10470.	10.0	39
56	Cd-substituted Goethites - A Structural Investigation by Synchrotron X-ray Diffraction. <i>Clays and Clay Minerals</i> , 2003, 51, 397-402.	1.3	38
57	Quantitative elemental localisation in leaves and stems of nickel hyperaccumulating shrub <i>Hybanthus floribundus</i> subsp. <i>floribundus</i> using micro-PIXE spectroscopy. <i>Nuclear Instruments &amp; Methods in Physics Research B</i> , 2008, 266, 667-676.	1.4	37
58	Arsenic Speciation in Tissues of the Hyperaccumulator <i>P. calomelanos</i> var. <i>austroamericana</i> using X-ray Absorption Spectroscopy. <i>Environmental Science &amp; Technology</i> , 2010, 44, 4735-4740.	10.0	37
59	Changes with time in the potassium content and phyllosilicates in the soil of the Broadbalk continuous wheat experiment at Rothamsted. <i>European Journal of Soil Science</i> , 1997, 48, 651-659.	3.9	37
60	Enhanced biological nitrogen fixation and competitive advantage of legumes in mixed pastures diminish with biochar aging. <i>Plant and Soil</i> , 2018, 424, 639-651.	3.7	36
61	Cadmium Sorption by Hydroxy-Aluminium Interlayered Montmorillonite. <i>Water, Air, and Soil Pollution</i> , 2001, 131, 203-215.	2.4	35
62	Nature and properties of iron rich glaeboles and mottles from some south-west Australian soils. <i>Geoderma</i> , 1996, 71, 95-120.	5.1	34
63	Acid buffering capacity and potential acidification of cotton soils in northern New South Wales. <i>Soil Research</i> , 2003, 41, 875.	1.1	32
64	Arsenic hyperaccumulation and localization in the pinnule and stipe tissues of the gold-dust fern ( <i>Pityrogramma calomelanos</i> (L.) Link var. <i>austroamericana</i> (Domin) Farw.) using quantitative micro-PIXE spectroscopy. <i>Plant and Soil</i> , 2007, 300, 207-219.	3.7	32
65	Effect of land use on organic matter composition in density fractions of contrasting soils: A comparative study using <sup>13</sup> C NMR and DRIFT spectroscopy. <i>Science of the Total Environment</i> , 2020, 726, 138395.	8.0	32
66	Cadmium sorption behavior of natural and synthetic zeolites. <i>Communications in Soil Science and Plant Analysis</i> , 2000, 31, 2775-2786.	1.4	30
67	Nickel, Zn and Cd localisation in seeds of metal hyperaccumulators using <sup>14</sup> PIXE spectroscopy. <i>Nuclear Instruments &amp; Methods in Physics Research B</i> , 2009, 267, 2176-2180.	1.4	30
68	Temperature sensitivity and carbon release in an acidic soil amended with lime and mulch. <i>Geoderma</i> , 2014, 214-215, 168-176.	5.1	29
69	Carbon dynamics from carbonate dissolution in Australian agricultural soils. <i>Soil Research</i> , 2015, 53, 144.	1.1	28
70	Dissolution kinetics of soil clays in sulfuric acid solutions: Ionic strength and temperature effects. <i>Applied Geochemistry</i> , 2014, 51, 170-183.	3.0	27
71	Rapid estimation of soil variability from the convex hull biplot area of topsoil ultra-violet, visible and near-infrared diffuse reflectance spectra. <i>Geoderma</i> , 2005, 128, 249-257.	5.1	26
72	Phytoremediation Potential of <i>Pityrogramma Calomelanos</i> Var. <i>Austroamericana</i> and <i>Pteris Vittata</i> L. Grown at a Highly Variable Arsenic Contaminated Site. <i>International Journal of Phytoremediation</i> , 2011, 13, 912-932.	3.1	26

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73	Interactive carbon priming, microbial response and biochar persistence in a Vertisol with varied inputs of biochar and labile organic matter. <i>European Journal of Soil Science</i> , 2019, 70, 960-974.	3.9	26
74	Biochar aging increased microbial carbon use efficiency but decreased biomass turnover time. <i>Geoderma</i> , 2021, 382, 114710.	5.1	26
75	Evaluation of pre-treatment procedures for improved interpretation of mid infrared spectra of soil organic matter. <i>Geoderma</i> , 2017, 304, 83-92.	5.1	25
76	Plant-induced changes in the bioavailability of heavy metals in soil and biosolids assessed by DGT measurements. <i>Journal of Soils and Sediments</i> , 2010, 10, 1131-1141.	3.0	24
77	Temperature sensitivity of soil and root respiration in contrasting soils. <i>Plant and Soil</i> , 2014, 382, 253-267.	3.7	23
78	The stability of low- and high-ash biochars in acidic soils of contrasting mineralogy. <i>Soil Biology and Biochemistry</i> , 2015, 89, 217-225.	8.8	23
79	Electrophoretic mobility of some tropical soil clays: effect of iron oxides and organic matter. <i>Geoderma</i> , 1999, 93, 325-334.	5.1	22
80	Effects of phytoextraction on heavy metal concentrations and pH of pore-water of biosolids determined using an in situ sampling technique. <i>Environmental Pollution</i> , 2008, 156, 874-882.	7.5	22
81	Copper substitution alone and in the presence of chromium, zinc, cadmium and lead in goethite ( $\pm$ -FeOOH). <i>Clay Minerals</i> , 2009, 44, 293-310.	0.6	22
82	Mössbauer Spectra of Soil Kaolins from South-Western Australia. <i>Clays and Clay Minerals</i> , 1992, 40, 341-346.	1.3	21
83	Layer charge characteristics of smectites from Vertosols (Vertisols) of New South Wales. <i>Soil Research</i> , 2002, 40, 1159.	1.1	21
84	Microbial biomass and microbial biodiversity in some soils from New South Wales, Australia. <i>Soil Research</i> , 2004, 42, 777.	1.1	20
85	Cadmium bioaccumulation in <i>Proisotoma minuta</i> in relation to bioavailability in soils. <i>Ecotoxicology and Environmental Safety</i> , 2009, 72, 1767-1773.	6.0	20
86	Dissolution of Cr, Zn, Cd, and Pb single- and multi-metal-substituted goethite: relationship to structural, morphological, and dehydroxylation properties. <i>Clays and Clay Minerals</i> , 2010, 58, 415-430.	1.3	19
87	Biochar Field Study: Greenhouse Gas Emissions, Productivity, and Nutrients in Two Soils. <i>Agronomy Journal</i> , 2016, 108, 1805-1815.	1.8	19
88	Evaluation of specimen preparation techniques for micro-PIXE localisation of elements in hyperaccumulating plants. <i>Nuclear Instruments &amp; Methods in Physics Research B</i> , 2008, 266, 1598-1604.	1.4	18
89	Prediction of Soil Clay Content and Cation Exchange Capacity Using Visible Near-Infrared Spectroscopy, Portable X-ray Fluorescence, and X-ray Diffraction Techniques. <i>Environmental Science &amp; Technology</i> , 2021, 55, 4629-4637.	10.0	18
90	Localisation of trace metals in metal-accumulating plants using $\mu$ -PIXE. <i>X-Ray Spectrometry</i> , 2008, 37, 133-136.	1.4	17

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91	Effect of Soil Properties on Arsenic Hyperaccumulation in <i>Pteris Vittata</i> and <i>Pityrogramma Calomelanos</i> var. <i>Austroamericana</i> . International Journal of Phytoremediation, 2009, 12, 174-187.	3.1	17
92	Applications of Synchrotron-Based X-Ray Diffraction and X-Ray Absorption Spectroscopy to the Understanding of Poorly Crystalline and Metal-Substituted Iron Oxides. Developments in Soil Science, 2010, , 199-254.	0.5	17
93	The Efficacy of Lime, Gypsum and Their Combination to Ameliorate Sodcity in Irrigated Cropping Soils in the Lachlan Valley of New South Wales. Arid Land Research and Management, 2015, 29, 17-40.	1.6	17
94	Chemically oxidized biochar increases ammonium-15N recovery and phosphorus uptake in a grassland. Biology and Fertility of Soils, 2019, 55, 577-588.	4.3	17
95	Nutrient changes in potting mix and Eucalyptus nitens leaf tissue under macadamia biochar amendments. Journal of Forestry Research, 2018, 29, 383-393.	3.6	17
96	Iron in soil kaolins from Indonesia and Western Australia. Clay Minerals, 2002, 37, 671-685.	0.6	14
97	Potassium adsorption characteristics and potassium forms in some New South Wales soils in relation to early senescence in cotton. Soil Research, 2004, 42, 747.	1.1	14
98	Dissolution behaviour of soil kaolinites in acidic solutions. Clay Minerals, 2013, 48, 447-461.	0.6	14
99	Interactive effects of iron oxides and organic matter on charge properties of red soils in Thailand. Soil Research, 2013, 51, 222.	1.1	13
100	Salinity-induced acidification in a wetland sediment through the displacement of clay-bound iron(II). Environmental Chemistry, 2010, 7, 413.	1.5	13
101	A potassium-rich beidellite from a laterite pallid zone in Western Australia. Clay Minerals, 1991, 26, 233-244.	0.6	12
102	Allometric equations for biomass and carbon stocks of forests along an altitudinal gradient in the eastern Himalayas. Forestry, 2017, 90, 445-454.	2.3	11
103	Antimony Accumulation in Wheat Seedlings Grown in Soil and Water. Communications in Soil Science and Plant Analysis, 2014, 45, 968-983.	1.4	9
104	Application of analytical transmission electron microscopy to identifying intercrystal variations in the composition of clay minerals. Analyst, The, 1995, 120, 1335.	3.5	8
105	Influence of Drought Stress on the Nickel-Hyperaccumulating Shrub <i>Hybanthus floribundus</i> (Lindl.) F.Muell. subsp. <i>floribundus</i> . International Journal of Plant Sciences, 2011, 172, 315-322.	1.3	8
106	Influence of Gypsum Enhanced Chicken-Manure-and-Wheat-Straw Compost on Amelioration of an Irrigated Sodic Brown Vertisol “ Laboratory Experiment. Arid Land Research and Management, 2015, 29, 415-431.	1.6	8
107	Role of oxygen-containing functional groups in forest fire-generated and pyrolytic chars for immobilization of copper and nickel. Environmental Pollution, 2017, 220, 946-954.	7.5	8
108	Biochar for <i>Eucalyptus</i> forestry plantations. Acta Horticulturae, 2016, , 55-62.	0.2	7

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109	Effects of <i>Eucalyptus saligna</i> biochar-amended media on the growth of <i>Acmena smithii</i> , <i>Viola</i> var. <i>hybrida</i> , and <i>Viola</i> <i>wittrockiana</i> . Journal of Horticultural Science and Biotechnology, 2015, 90, 187-194.	1.9	6
110	EFFECT OF PLANTS ON THE BIOAVAILABILITY OF METALS AND OTHER CHEMICAL PROPERTIES OF BIOSOLIDS IN A COLUMN STUDY. International Journal of Phytoremediation, 2012, 14, 878-893.	3.1	5
111	Spatial variability of ammonium and nitrate in soils near a poultry farm. Environmental Pollution, 2002, 120, 659-669.	7.5	4
112	Preface: Proceedings from the 1st Asia-Pacific Biochar Conference, 2009, Gold Coast, Australia. Soil Research, 2010, 48, i.	1.1	4
113	Evaluation of the Influence of Individual Clay Minerals on Biochar Carbon Mineralization in Soils. Soil Systems, 2019, 3, 79.	2.6	4
114	Changes in particulate and mineral-associated organic carbon with land use in contrasting soils. Pedosphere, 2023, 33, 421-435.	4.0	4
115	Plastics in soil environments: All things considered. Advances in Agronomy, 2022, , 1-132.	5.2	3
116	Detection of amorphous aluminosilicate by X-ray diffraction and chemical analysis to detect firing in archaeological sediments. Archaeology in Oceania, 1991, 26, 17-20.	0.7	2
117	The role of low molecular weight ligands in nickel hyperaccumulation in <i>Hybanthus floribundus</i> subspecies <i>floribundus</i> . Functional Plant Biology, 2010, 37, 1143.	2.1	2
118	Regional Considerations for Targeted Use of Biochar in Agriculture and Remediation in Australia. SSSA Special Publication Series, 0, , 445-474.	0.2	2
119	Mineralogy and Chemistry of Ochre Sediments from an Acid Mine Drainage Near a Disused Mine in Cornwall, UK. Clay Minerals, 1999, 34, 301-317.	0.6	2
120	Chapter 7 Temperature and Aging Effects on the Surface Speciation of Cd(II) at the Goethite-Water Interface. Developments in Earth and Environmental Sciences, 2007, , 187-204.	0.1	1
121	Chapter 8 Cadmium and Lead Desorption from Kaolinite. Developments in Earth and Environmental Sciences, 2007, 7, 205-233.	0.1	1
122	Soil warming and liming impacts on the recovery of 15 N in an acidic soil under soybean cropping. Journal of Plant Nutrition and Soil Science, 2016, 179, 193-197.	1.9	1
123	Checks and Mass Balances for In Situ Quantification of Mineral Composition using Proximal Soil Sensors. Soil Science Society of America Journal, 2019, 83, 1253-1262.	2.2	1
124	Metal oxides. , 2022, , .		1
125	Influence of Mycorrhizae, Rhizobium and Zinc On Growth, Nodulation, Zn, Cu And Mn Content Of Lentil ( <i>Lens esculenta</i> ). Zentralblatt für Mikrobiologie, 1985, 140, 465-469.	0.2	0
126	Studies of Synthetic Kaolinites Containing Copper and Zinc. , 2003, , 505-512.		0



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127	Biochar characterization for water and wastewater treatments. , 2022, , 135-152.		0