Dairy-manure derived biochar effectively sorbs lead and atrazine

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#	Paper	IF	Citations
958	Immobilization of heavy metal ions (CuII, CdII, NiII, and PbII) by broiler litter-derived biochars in water and soil. **2010**, 58, 5538-44		554
957	Sorption properties of greenwaste biochar for two triazine pesticides. **2010**, 181, 121-6		317
956	Ethylene: potential key for biochar amendment impacts. **2010**, 333, 443-452		227
955	Enhanced and irreversible sorption of pesticide pyrimethanil by soil amended with biochars. **2010**, 22, 615-20		108
954	Effect of Pinus radiata derived biochars on soil sorption and desorption of phenanthrene. **2010**, 158, 2821-5		149
953	Sorption of atrazine and phenanthrene by organic matter fractions in soil and sediment. **2010**, 158, 3520-6		66
952	Transport and retention of biochar particles in porous media: effect of pH, ionic strength, and particle size. **2010**, 3, 497-508		79
951	Properties of dairy-manure-derived biochar pertinent to its potential use in remediation. **2010**, 101, 5222-8		780
950	Biochar from anaerobically digested sugarcane bagasse. **2010**, 101, 8868-72		298
949	Retention capacity of biochar-amended New Zealand dairy farm soil for an estrogenic steroid hormone and its primary metabolite. **2010**, 48, 648		47
948	Longan shell as novel biomacromolecular sorbent for highly selective removal of lead and mercury ions. **2010**, 114, 3534-42		51
947	Sorption of deisopropylatrazine on broiler litter biochars. **2010**, 58, 12350-6		114
946	Removal of pesticides from water and wastewater by different adsorbents: a review. **2010**, 28, 231-71		118
945	Effects of chemical, biological, and physical aging as well as soil addition on the sorption of pyrene to activated carbon and biochar. *Environmental Science & Technology*, **2011**, 45, 10445-53	10.3	283
944	Simultaneous immobilization of lead and atrazine in contaminated soils using dairy-manure biochar. *Environmental Science & Technology*, **2011**, 45, 4884-9	10.3	429
943	Hydrothermal carbonization of biomass residuals: a comparative review of the chemistry, processes and applications of wet and dry pyrolysis. **2011**, 2, 71-106		1013
942	Enhanced Lead Sorption by Biochar Derived from Anaerobically Digested Sugarcane Bagasse. **2011**, 46, 1950-1956		179

941	Biochar induced soil microbial community change: Implications for biogeochemical cycling of carbon, nitrogen and phosphorus. **2011**, 54, 309-320	486
940	Biochar Application to Soil. **2011**, 103-143	352
939	Impacts of Biochar (Black Carbon) Additions on the Sorption and Efficacy of Herbicides. **2011**,	3
938	Biochar mediated alterations in herbicide breakdown and leaching in soil. **2011**, 43, 804-813	224
937	Positive and negative carbon mineralization priming effects among a variety of biochar-amended soils. **2011**, 43, 1169-1179	897
936	Earthworm avoidance of biochar can be mitigated by wetting. **2011**, 43, 1732-1737	110
935	An Assessment of U(VI) removal from groundwater using biochar produced from hydrothermal carbonization. **2011**, 92, 2504-12	213
934	Charcoal addition to soils in NE England: a carbon sink with environmental co-benefits?. **2011**, 409, 1704-14	82
933	Sorption of apolar and polar organic contaminants by waste tire rubber and its chars in single- and bi-solute systems. **2011**, 159, 850-7	64
932	A review of biochars' potential role in the remediation, revegetation and restoration of contaminated soils. **2011**, 159, 3269-82	1047
931	Adsorption of copper and zinc by biochars produced from pyrolysis of hardwood and corn straw in aqueous solution. **2011**, 102, 8877-84	642
930	Sorption of fluorinated herbicides to plant biomass-derived biochars as a function of molecular structure. **2011**, 102, 9897-903	122
929	Adsorption of methyl violet from aqueous solutions by the biochars derived from crop residues. **2011**, 102, 10293-8	270
928	Adsorption of Cu(II) by biochars generated from three crop straws. **2011**, 172, 828-834	313
927	Influence of soil properties on heavy metal sequestration by biochar amendment: 1. Copper sorption isotherms and the release of cations. **2011**, 82, 1431-7	224
926	Biochar reduces the bioavailability and phytotoxicity of heavy metals. **2011**, 348, 439-451	744
925	Biochar derived from anaerobically digested sugar beet tailings: characterization and phosphate removal potential. **2011**, 102, 6273-8	424
924	Enhancing phosphorus availability in phosphorus-fertilized zones by reducing phosphate adsorbed on ferrihydrite using rice straw-derived biochar. **2011**, 11, 1135-1141	145

923	A novel magnetic biochar efficiently sorbs organic pollutants and phosphate. **2011**, 102, 716-23		656
922	The forms of alkalis in the biochar produced from crop residues at different temperatures. **2011**, 102, 3488-97		1113
921	Sorption of bisphenol A, 17□ethinyl estradiol and phenanthrene on thermally and hydrothermally produced biochars. **2011**, 102, 5757-63		267
920	Removal of phosphate from aqueous solution by biochar derived from anaerobically digested sugar beet tailings. **2011**, 190, 501-7		395
919	Characteristics and mechanisms of hexavalent chromium removal by biochar from sugar beet tailing. **2011**, 190, 909-15		373
918	Palm frond biochar production and characterisation. **2012**, 103, 39-50		9
917	Germination tests for assessing biochar quality. **2012**, 41, 1014-22		124
916	Adsorption Removal of Copper, Zinc and Cadmium in Aqueous Solutions and Road Runoff by Carbonized Mulch: Heavy Metal Removal by Carbonized Mulch. **2012**,		1
915	Environmental benefits of biochar. **2012**, 41, 967-72		212
914	Switchgrass biochar affects two aridisols. **2012**, 41, 1123-30		77
913	Influence of feedstock and pyrolysis temperature of biochar amendments on transport of Escherichia coli in saturated and unsaturated soil. *Environmental Science & Technology*, **2012**, 46, 8097-105	10.3	87
912	Synthesis of porous MgO-biochar nanocomposites for removal of phosphate and nitrate from aqueous solutions. **2012**, 210, 26-32		411
911	Methods of using carbon nanotubes as filter media to remove aqueous heavy metals. **2012**, 210, 557-563		56
910	Synthesis, characterization, and environmental implications of graphene-coated biochar. **2012**, 435-436, 567-72		158
909	The use of biochar to reduce soil PCB bioavailability to Cucurbita pepo and Eisenia fetida. **2012**, 437, 76-82		80
908	Relative distribution of Pb2+ sorption mechanisms by sludge-derived biochar. **2012**, 46, 854-62		703
907	Removal of copper and cadmium from aqueous solution using switchgrass biochar produced via hydrothermal carbonization process. **2012**, 109, 61-9		340
906	Immobilization of Cu(II), Pb(II) and Cd(II) by the addition of rice straw derived biochar to a simulated polluted Ultisol. **2012**, 229-230, 145-50		366

905	Marked changes in herbicide sorption-desorption upon ageing of biochars in soil. **2012**, 231-232, 70-8		167
904	Polar and aliphatic domains regulate sorption of phthalic acid esters (PAEs) to biochars. **2012**, 118, 120-7		138
903	Kinetic and adsorptive characterization of biochar in metal ions removal. **2012**, 197, 295-305		430
902	Hydrogen peroxide modification enhances the ability of biochar (hydrochar) produced from hydrothermal carbonization of peanut hull to remove aqueous heavy metals: Batch and column tests. **2012**, 200-202, 673-680		451
901	Recent Advances in Biochar Applications in Agricultural Soils: Benefits and Environmental Implications. **2012**, 40, 1093-1098		115
900	Biomass Production on Trace Element-Contaminated Land: A Review. **2012**, 29, 823-839		50
899	Biochar: Carbon Sequestration, Land Remediation, and Impacts on Soil Microbiology. **2012**, 42, 2311-2364		116
898	Effectiveness of activated carbon and biochar in reducing the availability of polychlorinated dibenzo-p-dioxins/dibenzofurans in soils. *Environmental Science & Technology*, **2012**, 46, 1035-43	10.3	87
897	Retention of heavy metals in a Typic Kandiudult amended with different manure-based biochars. **2012**, 41, 1138-49		58
896	Biochars influence seed germination and early growth of seedlings. **2012**, 353, 273-287		162
895	Assessing the chemical and biological accessibility of the herbicide isoproturon in soil amended with biochar. **2012**, 88, 77-83		78
894	Adsorption of Pb(II) on variable charge soils amended with rice-straw derived biochar. **2012**, 89, 249-56		247
893	Assessment of herbicide sorption by biochars and organic matter associated with soil and sediment. **2012**, 163, 167-73		76
892	Removal of heavy metals from aqueous solution by biochars derived from anaerobically digested biomass. **2012**, 110, 50-6		519
891	Activated carbon and biochar amendments decrease pore-water concentrations of polycyclic aromatic hydrocarbons (PAHs) in sewage sludge. **2012**, 111, 84-91		159
890	Organic nitrogen mineralisation in two contrasting agro-ecosystems is unchanged by biochar addition. **2012**, 48, 47-50		63
889	The effect of biochar addition on N2O and CO2 emissions from a sandy loam soil-The role of soil aeration. **2012**, 51, 125-134		298
888	Increasing biochar surface area: Optimization of ball milling parameters. **2012**, 228, 115-120		81

887	Bioavailability assessment of hexachlorobenzene in soil as affected by wheat straw biochar. **2012**, 217-218, 391-7		81
886	Sorption of copper (II) and sulphate to different biochars before and after composting with farmyard manure. **2012**, 63, 399-409		71
885	Immobilization of Heavy Metals by Co-pyrolysis of Contaminated Soil with Woody Biomass. **2012**, 223, 1161-1170		48
884	Preparation of sewage sludge based activated carbon by using Fenton's reagent and their use in 2-naphthol adsorption. **2013**, 146, 779-784		27
883	Effectiveness of low-temperature biochar in controlling the release and leaching of herbicides in soil. **2013**, 370, 333-344		49
882	Effect of biochars on adsorption of Cu(II), Pb(II) and Cd(II) by three variable charge soils from southern China. **2013**, 20, 8491-501		79
881	Biochar in bioenergy cropping systems: impacts on soil faunal communities and linked ecosystem processes. **2013**, 5, 81-95		78
880	Removal of lead (Pb2+) from aqueous medium by using chars from co-pyrolysis. **2013**, 409, 158-65		33
879	Physicochemical properties of biochar produced from aerobically composted swine manure and its potential use as an environmental amendment. **2013**, 142, 641-6		113
878	Using biochar for remediation of soils contaminated with heavy metals and organic pollutants. **2013**, 20, 8472-83		503
877	Enhanced irreversible sorption of carbaryl to soils amended with crop-residue-derived biochar. **2013**, 93, 69-74		16
876	Comparison of rice husk- and dairy manure-derived biochars for simultaneously removing heavy metals from aqueous solutions: role of mineral components in biochars. **2013**, 92, 955-61		313
875	The effects of alkalinity and acidity of process water and hydrochar washing on the adsorption of atrazine on hydrothermally produced hydrochar. **2013**, 93, 1989-96		44
874	Influence of generated intermediates' interaction on heterogeneous Fenton's degradation of an azo dye 1-diazo-2-naphthol-4-sulfonic acid by using sludge based carbon as catalyst. **2013**, 263 Pt 2, 450-7		5
873	Comparative Sorption of Pb and Cd by Biochars and Its Implication for Metal Immobilization in Soils. **2013**, 224, 1		87
872	Removal of Cu(II) from acidic electroplating effluent by biochars generated from crop straws. **2013**, 25, 652-8		36
871	Transport of biochar particles in saturated granular media: effects of pyrolysis temperature and particle size. *Environmental Science & Technology*, **2013**, 47, 821-8	10.3	220
870	Biochar successfully replaces activated charcoal for in vitro culture of two white poplar clones reducing ethylene concentration. **2013**, 69, 43-50		11

869	Adsorption of Fluoroquinolone Antibiotics by Wastewater Sludge Biochar: Role of the Sludge Source. **2013**, 224, 1		85
868	Removal of Cu, Zn, and Cd from aqueous solutions by the dairy manure-derived biochar. **2013**, 20, 358-68		388
867	Cu(II) removal from aqueous solution by Spartina alterniflora derived biochar. **2013**, 141, 83-8		140
866	The effects of biochar, wood vinegar and plants on glyphosate leaching and degradation. **2013**, 58, 1-7		41
865	Characterization of sewage sludge-derived biochars from different feedstocks and pyrolysis temperatures. **2013**, 102, 137-143		218
864	Co-application of biochar and lignite fly ash on soil nutrients and biological parameters at different crop growth stages of Zea mays. **2013**, 58, 314-322		84
863	Adsorption and catalytic hydrolysis of carbaryl and atrazine on pig manure-derived biochars: impact of structural properties of biochars. **2013**, 244-245, 217-24		243
862	Effects of pH and metal ions on oxytetracycline sorption to maize-straw-derived biochar. **2013**, 136, 87-93		171
861	Adsorption of Cr(III) from acidic solutions by crop straw derived biochars. **2013**, 25, 1957-65		91
860	Heterogeneity of biochar properties as a function of feedstock sources and production temperatures. **2013**, 256-257, 1-9		206
859	Impacts of biochar on bioavailability of the fungicide azoxystrobin: a comparison of the effect on biodegradation rate and toxicity to the fungal community. **2013**, 91, 1525-33		35
858	Antagonistic effects of humic acid and iron oxyhydroxide grain-coating on biochar nanoparticle transport in saturated sand. *Environmental Science & Technology*, **2013**, 47, 5154-61	10.3	132
857	Predicting contaminant adsorption in black carbon (biochar)-amended soil for the veterinary antimicrobial sulfamethazine. *Environmental Science & Technology*, **2013**, 47, 6197-205	10.3	86
856	Application of crop straw derived biochars to Cu(II) contaminated Ultisol: evaluating role of alkali and organic functional groups in Cu(II) immobilization. **2013**, 133, 537-45		81
855	Immobilization of chlorobenzenes in soil using wheat straw biochar. **2013**, 61, 4210-7		33
854	Effective alleviation of aluminum phytotoxicity by manure-derived biochar. *Environmental Science & Technology*, **2013**, 47, 2737-45	10.3	110
853	Properties comparison of biochars from corn straw with different pretreatment and sorption behaviour of atrazine. **2013**, 147, 338-344		130
852	Opto-electrochemical based dual detection of heavy metal compounds using a novel flow cell. **2013**,		1

851	Adsorption Behaviour of Pymetrozine by Four Kinds of Biochar from Aqueous Solution. **2013**, 31, 477-487	3
850	Chemically Modified Biochar Produced from Conocarpus Wastes: An Efficient Sorbent for Fe(II) Removal from Acidic Aqueous Solutions. **2013**, 31, 625-640	37
849	Use of phytoremediation and biochar to remediate heavy metal polluted soils: a review. **2013**,	10
848	Buffalo weed (Ambrosia trifida L. var. trifida) biochar for cadmium (II) and lead (II) adsorption in single and mixed system. **2013**, 51, 7732-7745	60
847	A Review: Carbon Dioxide Capture: Biomass-Derived-Biochar and Its Applications. **2013**, 34, 974-984	29
846	Biochar-mediated reductive transformation of nitro herbicides and explosives. **2013**, 32, 501-8	108
845	Biochar-Fungi Interactions in Soils. **2013**, 77-107	23
844	Mineral constituents profile of biochar derived from diversified waste biomasses: implications for agricultural applications. **2013**, 42, 545-52	74
843	Influence of Biochar on Microbial Activities of Heavy Metals Contaminated Paddy Fields. **2013**, 8,	37
842	Influence of Pyrolysis Temperature on Cadmium and Zinc Sorption Capacity of Sugar Cane Straw□Derived Biochar. **2013**, 8,	84
841	Leachability and Vegetable Absorption of Heavy Metals from Sewage Sludge Biochar. **2013**,	4
840	Sorption of Atrazine in Tropical Soil by Biochar Prepared from Cassava Waste. **2014**, 9,	12
839	Transport of , , and microspheres in biochar-amended soils with different textures. **2014**, 43, 371-88	32
838	Adsorptive Removal of Heavy Metal from Acidic Wastewater with Biochar Produced from Anaerobically Digested Residues: Kinetics and Surface Complexation Modeling. **2014**, 9,	8
837	Biochar Reduces Zinc and Cadmium but not Copper and Lead Leaching on a Former Sewage Field. **2014**, 43, 1886-93	13
836	Influence of Wood Biochar on Phenanthrene Catabolism in Soils. **2014**, 1, 60-74	7
835	Does Biochar Alter the Speciation of Cd and Pb in Aqueous Solution?. **2014**, 10,	6
834	Removal of the Pesticide Pymetrozine from Aqueous Solution by Biochar Produced from Brewer's Spent Grain at Different Pyrolytic Temperatures. **2014**, 9,	10

833	. **2014**, 9,		1
832	Effect of pruning-derived biochar on heavy metals removal and water dynamics. **2014**, 50, 1211-1222		38
831	Opportunities and constraints for biochar technology in Australian agriculture: looking beyond carbon sequestration. **2014**, 52, 739		38
830	Application of Biochar for Enhancing Cadmium and Zinc Phytostabilization in Vigna radiata L. Cultivation. **2014**, 225, 1		41
829	The impact of biochar on the bioaccessibility of (14)C-phenanthrene in aged soil. **2014**, 16, 2635-43		29
828	Characterization of nitrogen-rich biomaterial-derived biochars and their sorption for aromatic compounds. **2014**, 195, 84-90		37
827	Investigation of mono/competitive adsorption of environmentally relevant ionized weak acids on graphite: impact of molecular properties and thermodynamics. *Environmental Science & Technology*, **2014**, 48, 14472-80	10.3	18
826	Characterization of biochar from fast pyrolysis and its effect on chemical properties of the tea garden soil. **2014**, 110, 375-381		64
825	Biochar-supported zerovalent iron reclaims silver from aqueous solution to form antimicrobial nanocomposite. **2014**, 117, 801-5		57
824	Adsorption of organic chemicals on graphene coated biochars and its environmental implications. **2014**, 3,		9
823	Evaluation of Biochar as a Potential Filter Media for the Removal of Mixed Contaminants from Urban Storm Water Runoff. **2014**, 140, 04014043		87
822	Use of phytoremediation and biochar to remediate heavy metal polluted soils: a review. **2014**, 5, 65-75		304
821	Biochar: an effective amendment for remediating contaminated soil. **2014**, 228, 83-99		7
820	Biochar Preparation, Characterization, and Adsorptive Capacity and Its Effect on Bioavailability of Contaminants: An Overview. **2014**, 2014, 1-12		166
819	Cadmium and lead remediation using magnetic oak wood and oak bark fast pyrolysis bio-chars. **2014**, 236, 513-528		348
818	Pyrolytic temperatures impact lead sorption mechanisms by bagasse biochars. **2014**, 105, 68-74		214
817	Single-solute and bi-solute sorption of phenanthrene and dibutyl phthalate by plant- and manure-derived biochars. **2014**, 473-474, 308-16		52
816	Effect of Crop-Straw Derived Biochars on Pb(II) Adsorption in Two Variable Charge Soils. **2014**, 13, 507-516		20

815	Synthesis of palm oil empty fruit bunch magnetic pyrolytic char impregnating with FeCl3 by microwave heating technique. **2014**, 61, 265-275	83
814	Influence of biochar amendments on the sorption-desorption of aminocyclopyrachlor, bentazone and pyraclostrobin pesticides to an agricultural soil. **2014**, 470-471, 438-43	114
813	The sorption of heavy metals on thermally treated sediments with high organic matter content. **2014**, 160, 123-8	50
812	Phosphorus Sorption and Availability from Biochars and Soil/Biochar Mixtures. **2014**, 42, 626-634	179
811	Surface characterization of maize-straw-derived biochars and their sorption performance for MTBE and benzene. **2014**, 71, 5195-5205	27
810	Removal of Cr(VI) from aqueous solutions by Na2SO3/FeSO4 combined with peanut straw biochar. **2014**, 101, 71-6	72
809	Organic and inorganic contaminants removal from water with biochar, a renewable, low cost and sustainable adsorbent--a critical review. **2014**, 160, 191-202	1406
808	Adsorption characteristics of Cu(II) from aqueous solution onto biochar derived from swine manure. **2014**, 21, 7035-46	116
807	Enhanced adsorptive removal of naphthalene intermediates from aqueous solution by introducing reed straw into sewage sludge-based activated carbon. **2014**, 21, 2043-53	18
806	Hydrothermal conversion of urban food waste to chars for removal of textile dyes from contaminated waters. **2014**, 161, 310-9	129
805	Effect of ageing on surface charge characteristics and adsorption behaviour of cadmium and arsenate in two contrasting soils amended with biochar. **2014**, 52, 155	35
804	Influence of pyrolysis temperature on characteristics and heavy metal adsorptive performance of biochar derived from municipal sewage sludge. **2014**, 164, 47-54	436
803	Sorption properties for black carbon (wood char) after long term exposure in soils. **2014**, 70, 53-61	42
802	Short-term effects of biochar on soil heavy metal mobility are controlled by intra-particle diffusion and soil pH increase. **2014**, 65, 149-161	193
801	Distribution and evolution of organic matter phases during biochar formation and their importance in carbon loss and pore structure. **2014**, 250, 240-247	55
800	Amino modification of biochar for enhanced adsorption of copper ions from synthetic wastewater. **2014**, 48, 396-405	395
799	Adsorption of sulfonamides to demineralized pine wood biochars prepared under different thermochemical conditions. **2014**, 186, 187-94	174
798	Interactions of aluminum with biochars and oxidized biochars: implications for the biochar aging process. **2014**, 62, 373-80	191

797	Ca and Fe modified biochars as adsorbents of arsenic and chromium in aqueous solutions. **2014**, 146, 444-450		138
796	Biochar from Alternanthera philoxeroides could remove Pb(II) efficiently. **2014**, 171, 227-32		85
795	Mechanism of Cu(II) adsorption inhibition on biochar by its aging process. **2014**, 26, 2123-30		50
794	Interaction of organic and inorganic fractions of biochar with Pb(II) ion: further elucidation of mechanisms for Pb(II) removal by biochar. **2014**, 4, 44930-44937		79
793	Speciation of sulfur in biochar produced from pyrolysis and gasification of oak and corn stover. *Environmental Science & Technology*, **2014**, 48, 8474-80	10.3	82
792	A comparison of biochars from lignin, cellulose and wood as the sorbent to an aromatic pollutant. **2014**, 280, 450-7		101
791	Key role of persistent free radicals in hydrogen peroxide activation by biochar: implications to organic contaminant degradation. *Environmental Science & Technology*, **2014**, 48, 1902-10	10.3	397
790	Sorption of Lead(II), Cadmium(II), and Copper(II) Ions from Aqueous Solutions Using Tea Waste. **2014**, 53, 3629-3635		94
789	Evaluation of solid fuel char briquettes from human waste. *Environmental Science & Technology* , **2014**, 48, 9852-8	10.3	51
788	Sewage Sludge Carbonization for Biochar Applications. Fate of Heavy Metals. **2014**, 28, 5318-5326		90
787	Does biochar application alter heavy metal dynamics in agricultural soil?. **2014**, 184, 149-157		126
786	Biochar pyrolytically produced from municipal solid wastes for aqueous As(V) removal: adsorption property and its improvement with KOH activation. **2014**, 169, 622-629		220
785	Atrazine leaching from biochar-amended soils. **2014**, 95, 346-52		67
784	Biochar's role in mitigating soil nitrous oxide emissions: A review and meta-analysis. **2014**, 191, 5-16		564
783	Effects of temperature on the physicochemical characteristics of fast pyrolysis bio-chars derived from Canadian waste biomass. **2014**, 125, 90-100		213
782	Influence of post-treatment strategies on the properties of activated chars from broiler manure. **2014**, 95, 96-104		29
781	Self-assembly of needle-like layered double hydroxide (LDH) nanocrystals on hydrochar: characterization and phosphate removal ability. **2014**, 4, 28171		44
780	Biochars derived from various crop straws: characterization and Cd(II) removal potential. **2014**, 106, 226-31		146

779	2,4-D adsorption to biochars: effect of preparation conditions on equilibrium adsorption capacity and comparison with commercial activated carbon literature data. **2014**, 62, 20-8	125
778	Cadmium adsorption on plant- and manure-derived biochar and biochar-amended sandy soils: impact of bulk and surface properties. **2014**, 111, 320-6	108
777	Physicochemical properties of herb-residue biochar and its sorption to ionizable antibiotic sulfamethoxazole. **2014**, 248, 128-134	119
776	Reviews of Environmental Contamination and Toxicology Volume 228. **2014**,	2
775	Sorptive removal of nitro explosives and metals using biochar. **2014**, 43, 1663-71	19
774	Environmental assessment of biochar for security applications. **2015**, 157-159	
773	The Simulated Effects of Freezing and Thawing on Properties and Sorption Characteristics for Carbamazepine of Biochar. **2015**,	
772	Research and Application of Biochar in North America. **2015**, 475-494	5
771	Interaction Mechanisms between Biochar and Organic Pollutants. **2015**, 225-257	2
770	Aqueous Contaminant Removal and Stormwater Treatment Using Biochar. **2015**, 341-376	3
769	Research and Application of Biochar in China. **2015**, 377-407	3
768	Application of Biochar for Soil Remediation. **2015**, 295-324	16
767	Performance of biochar and filtralite as polishing step for on-site greywater treatment plant. **2015**, 26, 607-625	7
766	Pigeon Pea Biochar as a Soil Amendment to Repress Copper Mobility in Soil and Its Uptake by Spinach. **2015**, 11,	5
765	Metal leaching in mine tailings: short-term impact of biochar and wood ash amendments. **2015**, 44, 275-85	10
764	Carbohydrate-based activated carbon with high surface acidity and basicity for nickel removal from synthetic wastewater. **2015**, 5, 52048-52056	16
763	Adsorption of cadmium by biochar derived from municipal sewage sludge: Impact factors and adsorption mechanism. **2015**, 134, 286-93	190
762	Physicochemical and sorptive properties of biochars derived from woody and herbaceous biomass. **2015**, 134, 257-62	140

761	Adsorptive removal of antibiotics from water and wastewater: Progress and challenges. **2015**, 532, 112-26	606
760	Characterization of biochar of pine pellet. **2015**, 122, 21-32	19
759	Competitive adsorption of cadmium and aluminum onto fresh and oxidized biochars during aging processes. **2015**, 15, 1130-1138	69
758	Simultaneous adsorption and dechlorination of pentachlorophenol from effluent by Ni⁰/VI magnetic biochar composites synthesized from paper mill sludge. **2015**, 271, 195-203	113
757	Effect of biochar on leaching of organic carbon, nitrogen, and phosphorus from compost in bioretention systems. **2015**, 521-522, 37-45	91
756	The potential role of biochar in the removal of organic and microbial contaminants from potable and reuse water: A review. **2015**, 134, 232-40	319
755	Atrazine immobilization on sludge derived biochar and the interactive influence of coexisting Pb(II) or Cr(VI) ions. **2015**, 134, 438-45	54
754	Effect of Biochar on Heavy Metal Speciation of Paddy Soil. **2015**, 226, 1	44
753	Removal studies of Cd(II) and explosive compounds using buffalo weed biochar-alginate beads. **2015**, 26, 226-233	50
752	Lead sorptive removal using magnetic and nonmagnetic fast pyrolysis energy cane biochars. **2015**, 448, 238-50	111
751	A feasibility study of agricultural and sewage biomass as biochar, bioenergy and biocomposite feedstock: production, characterization and potential applications. **2015**, 512-513, 495-505	123
750	Multifaceted application of crop residue biochar as a tool for sustainable agriculture: An ecological perspective. **2015**, 77, 324-347	85
749	Sorption and cosorption of lead and sulfapyridine on carbon nanotube-modified biochars. **2015**, 22, 1868-76	106
748	Application of biochar for the removal of pollutants from aqueous solutions. **2015**, 125, 70-85	989
747	Monitoring the Changes of Chemical Properties of Rice Straw-Derived Biochars Modified by Different Oxidizing Agents and Their Adsorptive Performance for Organics. **2015**, 19, 171-182	47
746	Sorption of sulphamethoxazole by the biochars derived from rice straw and alligator flag. **2015**, 36, 245-53	30
745	The capacity of biochar made from common reeds to neutralise pH and remove dissolved metals in acid drainage. **2015**, 22, 15113-22	20
744	Sorption characteristics and contribution of organic matter fractions for atrazine in soil. **2015**, 15, 2210-2219	14

743	Impact of humic acid coating on sorption of naphthalene by biochars. **2015**, 94, 946-954	27
742	Sorption of lead by Salisbury biochar produced from British broadleaf hardwood. **2015**, 193, 553-6	82
741	Role of Alumina and Montmorillonite in Changing the Sorption of Herbicides to Biochars. **2015**, 63, 5740-6	22
740	Turning Leucaena leucocephala bark to biochar for soil application via statistical modelling and optimization technique. **2015**, 82, 26-39	22
739	Synthesis of macroporous silica biomass nanocomposite based on XG/MgSiO□for the removal of toxic ions. **2015**, 186, 356-359	11
738	Kinetic study on phosphate removal from aqueous solution by biochar derived from peanut shell as renewable adsorptive media. **2015**, 12, 3363-3372	101
737	Can Biochar From Contaminated Biomass Be Applied Into Soil for Remediation Purposes?. **2015**, 226, 1	22
736	Adsorption behavior comparison of trivalent and hexavalent chromium on biochar derived from municipal sludge. **2015**, 190, 388-94	204
735	Interactions of triazine herbicides with biochar: Steric and electronic effects. **2015**, 80, 179-88	96
734	Efficiency of biochar and compost (or composting) combined amendments for reducing Cd, Cu, Zn and Pb bioavailability, mobility and ecological risk in wetland soil. **2015**, 5, 34541-34548	113
733	Preparation and Characterization of Biochar Sorbents Produced from Malt Spent Rootlets. **2015**, 54, 9577-9584	41
732	Arsenate Adsorption from Aqueous Solution onto Fe(III)-Modified Crop Straw Biochars. **2015**, 32, 922-929	16
731	Utilization of carbon produced by torrefaction of grass for energy purposes and related risks. **2015**,	1
730	Characterization of potassium hydroxide (KOH) modified hydrochars from different feedstocks for enhanced removal of heavy metals from water. **2015**, 22, 16640-51	110
729	Effect of biochar aging on surface characteristics and adsorption behavior of dialkyl phthalates. **2015**, 206, 502-9	106
728	Biochar efficiency in pesticides sorption as a function of production variables--a review. **2015**, 22, 13824-41	63
727	Influencing factors on sorption of TNT and RDX using rice husk biochar. **2015**, 32, 178-186	36
726	Rice Straw-Derived Biochar Properties and Functions as Cu(II) and Cyromazine Sorbents as Influenced by Pyrolysis Temperature. **2015**, 25, 781-789	27

725	Application of laboratory prepared and commercially available biochars to adsorption of cadmium, copper and zinc ions from water. **2015**, 196, 540-9	202
724	Birch (Betula spp.) wood biochar is a potential soil amendment to reduce glyphosate leaching in agricultural soils. **2015**, 164, 46-52	19
723	Removal of aqueous ammonium by biochars derived from agricultural residuals at different pyrolysis temperatures. **2015**, 27, 92-97	55
722	Conocarpus biochar as a soil amendment for reducing heavy metal availability and uptake by maize plants. **2015**, 22, 503-11	143
721	Investigating the mechanisms of biochar's removal of lead from solution. **2015**, 177, 308-17	255
720	Biochar production and applications in sub-Saharan Africa: opportunities, constraints, risks and uncertainties. **2015**, 150, 250-261	121
719	Physical and chemical characterization of waste wood derived biochars. **2015**, 36, 256-68	220
718	Mechanism of hydroxyl radical generation from biochar suspensions: Implications to diethyl phthalate degradation. **2015**, 176, 210-7	210
717	Chars as carbonaceous adsorbents/catalysts for tar elimination during biomass pyrolysis or gasification. **2015**, 43, 281-295	241
716	Comparison of Pine Bark, Biochar and Zeolite as Sorbents for NH4+-N Removal from Water. **2015**, 43, 86-91	28
715	Effects of inorganic and organic amendments on the uptake of lead and trace elements by Brassica chinensis grown in an acidic red soil. **2015**, 119, 177-183	76
714	Biochar from woody biomass for removing metal contaminants and carbon sequestration. **2015**, 22, 103-109	143
713	Organic carbon and inorganic silicon speciation in rice-bran-derived biochars affect its capacity to adsorb cadmium in solution. **2015**, 15, 60-70	70
712	A novel manganese-oxide/biochar composite for efficient removal of lead(II) from aqueous solutions. **2015**, 12, 1719-1726	86
711	Granulation and ferric oxides loading enable biochar derived from cotton stalk to remove phosphate from water. **2015**, 178, 119-125	123
710	Effectiveness of sunflower seed husk biochar for removing copper ions from wastewater: a comparative study. **2016**, 11, 53-63	34
709	Effect of biochar on soil properties and lead (Pb) availability in a military camp in South West Ethiopia. **2016**, 10, 77-85	21
708	Production and Utilization of Biochar From Organic Wastes for Pollutant Control on Contaminated Sites. **2016**, 91-116	7

707	Contribution of Soluble Minerals in Biochar to Pb2+ Adsorption in Aqueous Solutions. **2016**, 12,	6
706	Removal and Recovery of Metals by Biosorbents and Biochars Derived From Biowastes. **2016**, 149-177	15
705	Engineered Soils Using Amendments for In Situ Rehabilitation of Mine Lands. **2016**, 131-146	2
704	Application of Biochar Produced From Biowaste Materials for Environmental Protection and Sustainable Agriculture Production. **2016**, 73-89	8
703	High-efficiency remediation of cadmium (Cd2+) from aqueous solution using poultry manure and farmyard manure derived biochars. **2016**, 51, 2307-2317	30
702	Comparative short-term effects of sewage sludge and its biochar on soil properties, maize growth and uptake of nutrients on a tropical clay soil in Zimbabwe. **2016**, 15, 1395-1406	37
701	Effect of activated carbon or biochars on toxicity of different soils contaminated by mixture of native polycyclic aromatic hydrocarbons and heavy metals. **2016**, 35, 1321-8	17
700	Novel Alleviation Mechanisms of Aluminum Phytotoxicity via Released Biosilicon from Rice Straw-Derived Biochars. **2016**, 6, 29346	34
699	Potential Application of Biochar for Bioremediation of Contaminated Systems. **2016**, 221-246	10
698	Interactions of Biochar and Biological Degradation of Aromatic Hydrocarbons in Contaminated Soil. **2016**, 247-267	3
697	Comparison of heavy metal immobilization in contaminated soils amended with peat moss and peat moss-derived biochar. **2016**, 18, 514-20	19
696	Sorption of lead and methylene blue onto hickory biochars from different pyrolysis temperatures: Importance of physicochemical properties. **2016**, 37, 261-267	90
695	Biosorbents for the removal of synthetic organics and emerging pollutants: Opportunities and challenges for developing countries. **2016**, 19, 84-89	68
694	Effects of biochar application on fluxes of three biogenic greenhouse gases: a meta-analysis. **2016**, 2, e01202	65
693	Biochar amendment reduced methylmercury accumulation in rice plants. **2016**, 313, 1-8	76
692	Rapid and highly selective removal of lead from water using graphene oxide-hydrated manganese oxide nanocomposites. **2016**, 314, 32-40	127
691	Metolachlor Sorption and Degradation in Soil Amended with Fresh and Aged Biochars. **2016**, 64, 3141-9	30
690	Pyrolysis of crop residues in a mobile bench-scale pyrolyser: Product characterization and environmental performance. **2016**, 119, 52-59	36

689	Influence of feedstock on the copper removal capacity of waste-derived biochars. **2016**, 212, 199-206		56
688	Effects of Post-Pyrolysis Air Oxidation of Biomass Chars on Adsorption of Neutral and Ionizable Compounds. *Environmental Science & Technology*, **2016**, 50, 6276-83	10.3	68
687	Maize, switchgrass, and ponderosa pine biochar added to soil increased herbicide sorption and decreased herbicide efficacy. **2016**, 51, 497-507		11
686	Mycoextraction by Clitocybe maxima combined with metal immobilization by biochar and activated carbon in an aged soil. **2016**, 562, 732-739		45
685	The bioavailability and toxicity of ZnO and Ni nanoparticles and their bulk counterparts in different sediments. **2016**, 16, 1798-1808		17
684	Immobilization of Pb and Cu in polluted soil by superphosphate, multi-walled carbon nanotube, rice straw and its derived biochar. **2016**, 23, 15532-43		36
683	Organic materials retain high proportion of protons, iron and aluminium from acid sulphate soil drainage water with little subsequent release. **2016**, 23, 23582-23592		2
682	Effect of biochar on the fate and transport of manure-borne progesterone in soil. **2016**, 97, 231-241		3
681	Cost effective biochar gels with super capabilities for heavy metal removal. **2016**, 6, 75430-75439		5
680	Effect of coexisting Al(III) ions on Pb(II) sorption on biochars: Role of pH buffer and competition. **2016**, 161, 438-445		25
679	Effects of biochars on the availability of heavy metals to ryegrass in an alkaline contaminated soil. **2016**, 218, 513-522		96
678	Amending the seedling bed of eggplant with biochar can further immobilize Cd in contaminated soils. **2016**, 572, 626-633		26
677	Utilization of biochar and activated carbon to reduce Cd, Pb and Zn phytoavailability and phytotoxicity for plants. **2016**, 181, 637-645		24
676	Ammonium citrate-modified biochar: An adsorbent for La(III) ions from aqueous solution. **2016**, 509, 550-563		39
675	Role of Inherent Inorganic Constituents in SO Sorption Ability of Biochars Derived from Three Biomass Wastes. *Environmental Science & Technology*, **2016**, 50, 12957-12965	10.3	24
674	H/C atomic ratio as a smart linkage between pyrolytic temperatures, aromatic clusters and sorption properties of biochars derived from diverse precursory materials. **2016**, 6, 22644		106
673	Characterization of cadmium removal from aqueous solution by biochar produced from Ipomoea fistulosa at different pyrolytic temperatures. **2016**, 97, 444-451		93
672	Hydrothermal carbonization (HTC) of cow manure: Carbon and nitrogen distributions in HTC products. **2016**, 35, 1002-1011		75

671	Adsorption of phthalic acid esters (PAEs) on chemically aged biochars. **2016**, 5,	1
670	Integrating EDDS-enhanced washing with low-cost stabilization of metal-contaminated soil from an e-waste recycling site. **2016**, 159, 426-432	50
669	Potential mechanisms of cadmium removal from aqueous solution by Canna indica derived biochar. **2016**, 562, 517-525	236
668	Effects of biochar and alkaline amendments on cadmium immobilization, selected nutrient and cadmium concentrations of lettuce (Lactuca sativa) in two contrasting soils. **2016**, 5, 397	56
667	Effect of different amendments on rice (Oryza sativa L.) growth, yield, nutrient uptake and grain quality in Ni-contaminated soil. **2016**, 23, 18585-95	42
666	Plam oil empty fruit bunch based magnetic biochar composite comparison for synthesis by microwave-assisted and conventional heating. **2016**, 120, 521-528	55
665	Sorption of halogenated phenols and pharmaceuticals to biochar: affecting factors and mechanisms. **2016**, 23, 951-61	55
664	Equilibrium, kinetic, and thermodynamic studies on biosorption of Cd(II) from aqueous solution by biochar. **2016**, 42, 1349-1362	21
663	Effects of incorporating differently-treated rice straw on phytoavailability of methylmercury in soil. **2016**, 145, 457-63	37
662	Sorption of Atrazine, 17□Estradiol, and Phenanthrene on Wheat Straw and Peanut Shell Biochars. **2016**, 227, 1	24
661	Copper(II) removal potential from aqueous solution by pyrolysis biochar derived from anaerobically digested algae-dairy-manure and effect of KOH activation. **2016**, 4, 365-372	81
660	Leaching and fractionation of heavy metals in mining soils amended with biochar. **2016**, 164, 25-33	91
659	Study of Biochar Properties by Scanning Electron Microscope □Energy Dispersive X-Ray Spectroscopy (SEM-EDX). **2016**, 47, 593-601	32
658	Stabilization of cationic and anionic metal species in contaminated soils using sludge-derived biochar. **2016**, 149, 263-71	100
657	Biochar amendment in the green roof substrate affects runoff quality and quantity. **2016**, 88, 1-9	44
656	Impact of pigeon pea biochar on cadmium mobility in soil and transfer rate to leafy vegetable spinach. **2016**, 188, 31	36
655	Phytoavailability of Cd and Pb in crop straw biochar-amended soil is related to the heavy metal content of both biochar and soil. **2016**, 168, 245-51	54
654	Competitive removal of Cd(II) and Pb(II) by biochars produced from water hyacinths: performance and mechanism. **2016**, 6, 5223-5232	94

653	Lead and cadmium sorption mechanisms on magnetically modified biochars. **2016**, 203, 318-24	189
652	Effective removal of Cr(VI) using β-cyclodextrin–chitosan modified biochars with adsorption/reduction bifuctional roles. **2016**, 6, 94-104	174
651	A review of biochar as a low-cost adsorbent for aqueous heavy metal removal. **2016**, 46, 406-433	703
650	Thermochemical characteristics of dairy manure and its derived biochars from a fixed-bed pyrolysis. **2016**, 13, 963-968	9
649	Comparison of the characteristics and mechanisms of Hg(II) sorption by biochars and activated carbon. **2016**, 463, 55-60	107
648	Pee-dots: biocompatible fluorescent carbon dots derived from the upcycling of urine. **2016**, 18, 243-250	128
647	Variation in sorption of propiconazole with biochars: The effect of temperature, mineral, molecular structure, and nano-porosity. **2016**, 142, 56-63	41
646	Thermochemical characterization of cattle manure relevant to its energy conversion and environmental implications. **2016**, 6, 71-77	12
645	Biochar for crop production: potential benefits and risks. **2017**, 17, 685-716	222
644	Approaches for adding value to anaerobically digested dairy fiber. **2017**, 72, 254-268	10
643	One-pot synthesis of porous carbon foam derived from corn straw: atrazine adsorption equilibrium and kinetics. **2017**, 4, 625-635	43
642	Biochar for Agriculture in Pakistan. **2017**, 57-114	6
641	Relationship between biochars' porosity and adsorption of three neutral herbicides from water. **2017**, 75, 482-489	16
640	Effects of the biochar aromaticity and molecular structures of the chlorinated organic compounds on the adsorption characteristics. **2017**, 24, 5554-5565	26
639	Converting Ni-loaded biochars into supercapacitors: Implication on the reuse of exhausted carbonaceous sorbents. **2017**, 7, 41523	37
638	Impact of Biochar on Soil Fertility and Behaviour of Xenobiotics in Soil. **2017**, 299-318	
637	Structural characteristics of biochar-graphene nanosheet composites and their adsorption performance for phthalic acid esters. **2017**, 319, 9-20	123
636	Advanced technologies for the remediation of pesticide-contaminated soils. **2017**, 586, 576-597	219

635	Effect of Heavy Metal (Zn) on Redox Property of Hydrochar Produced from Lignin, Cellulose, and d-Xylose. **2017**, 5, 3499-3508		20
634	Simultaneous removal of atrazine and copper using polyacrylic acid-functionalized magnetic ordered mesoporous carbon from water: adsorption mechanism. **2017**, 7, 43831		41
633	Adsorption of Cd(II) from aqueous solutions by rape straw biochar derived from different modification processes. **2017**, 175, 332-340		270
632	Porous materials for the sorption of emerging organic pollutants from aqueous systems: The case for conjugated microporous polymers. **2017**, 16, 223-232		12
631	Performance and mechanism for cadmium and lead adsorption from water and soil by corn straw biochar. **2017**, 11, 1		91
630	Biochar: An Emerging Panacea for Contaminated and Degraded Soils. **2017**, 455-476		
629	Effects of acidic and neutral biochars on properties and cadmium retention of soils. **2017**, 180, 564-573		44
628	A Direct Observation of the Fine Aromatic Clusters and Molecular Structures of Biochars. *Environmental Science & Technology*, **2017**, 51, 5473-5482	10.3	109
627	Passive detection of Pb in water using rock phosphate agarose beads. **2017**, 336, 240-248		9
626	Biological technologies for the remediation of co-contaminated soil. **2017**, 37, 1062-1076		341
625	Stabilization of heavy metals in biochar pyrolyzed from phytoremediated giant reed (Arundo donax) biomass. **2017**, 27, 656-665		15
624	Comparison of cadmium and lead sorption by Phyllostachys pubescens biochar produced under a low-oxygen pyrolysis atmosphere. **2017**, 238, 352-360		77
623	Photogeneration of reactive oxygen species from biochar suspension for diethyl phthalate degradation. **2017**, 214, 34-45		149
622	Mitigating biochar phytotoxicity via lanthanum (La) participation in pyrolysis. **2017**, 24, 10267-10278		6
621	Remediation of Soils Polluted with Inorganic Contaminants: Role of Organic Amendments. **2017**, 313-337		3
620	Effects of chemical oxidation on phenanthrene sorption by grass- and manure-derived biochars. **2017**, 598, 789-796		50
619	Simultaneous production of syngas and magnetic biochar via pyrolysis of paper mill sludge using CO2 as reaction medium. **2017**, 145, 1-9		59
618	The speciation, leachability and bioaccessibility of Cu and Zn in animal manure-derived biochar: effect of feedstock and pyrolysis temperature. **2017**, 11, 1		32

617	Biochar-based water treatment systems as a potential low-cost and sustainable technology for clean water provision. **2017**, 197, 732-749		182
616	Effects and mechanisms of biochar-microbe interactions in soil improvement and pollution remediation: A review. **2017**, 227, 98-115		381
615	Life cycle environmental and economic performance of biochar compared with activated carbon: A meta-analysis. **2017**, 118, 13-26		187
614	Biochar properties and eco-friendly applications for climate change mitigation, waste management, and wastewater treatment: A review. **2017**, 79, 255-273		312
613	Aging Induced Changes in Biochar's Functionality and Adsorption Behavior for Phosphate and Ammonium. *Environmental Science & Technology*, **2017**, 51, 8359-8367	10.3	127
612	Agricultural biomass-derived magnetic adsorbents: Preparation and application for heavy metals removal. **2017**, 78, 168-177		77
611	Indispensable role of biochar-inherent mineral constituents in its environmental applications: A review. **2017**, 241, 887-899		170
610	Effects of atmospheric ageing under different temperatures on surface properties of sludge-derived biochar and metal/metalloid stabilization. **2017**, 184, 176-184		44
609	Pyrogenic carbon and its role in contaminant immobilization in soils. **2017**, 47, 795-876		59
608	Long-term application of organic matter based fertilisers: Advantages or risks for soil biota? A review. **2017**, 25, 408-414		7
607	Role of biochar on composting of organic wastes and remediation of contaminated soils-a review. **2017**, 24, 16560-16577		131
606	Valorization of hazelnut shell waste in hot compressed water. **2017**, 166, 96-106		10
605	Potential phosphorus eutrophication mitigation strategy: Biochar carbon composition, thermal stability and pH influence phosphorus sorption. **2017**, 180, 201-211		63
604	Green Technologies and Environmental Sustainability. **2017**,		12
603	Efficient removal of lead from solution by celery-derived biochars rich in alkaline minerals. **2017**, 235, 185-192		83
602	Mechanisms of metal sorption by biochars: Biochar characteristics and modifications. **2017**, 178, 466-478		784
601	Enhanced removal of Cd(II) from aqueous solution using CaCO3 nanoparticle modified sewage sludge biochar. **2017**, 7, 16238-16243		60
600	Cow manure and cow manure-derived biochar application as a soil amendment for reducing cadmium availability and accumulation by Brassica chinensis L. in acidic red soil. **2017**, 16, 725-734		53

599	Stabilization of Pb(II) accumulated in biomass through phosphate-pretreated pyrolysis at low temperatures. **2017**, 324, 464-471	23
598	Effect of forestry-waste biochars on adsorption of Pb(II) and antibiotic florfenicol in red soil. **2017**, 24, 3861-3871	7
597	Removal of methylene blue from aqueous solution by sewage sludge-derived biochar: Adsorption kinetics, equilibrium, thermodynamics and mechanism. **2017**, 5, 601-611	259
596	The role of ash content on bisphenol A sorption to biochars derived from different agricultural wastes. **2017**, 171, 66-73	70
595	Sorption performance and mechanisms of arsenic(V) removal by magnetic gelatin-modified biochar. **2017**, 314, 223-231	208
594	Characteristics of different types of biochar and effects on the toxicity of heavy metals to germinating sorghum seeds. **2017**, 182, 157-165	35
593	Initial biochar properties related to the removal of As, Se, Pb, Cd, Cu, Ni, and Zn from an acidic suspension. **2017**, 170, 216-224	21
592	Role of oxygen-containing functional groups in forest fire-generated and pyrolytic chars for immobilization of copper and nickel. **2017**, 220, 946-954	6
591	Effects of humic acid and heavy metals on the sorption of polar and apolar organic pollutants onto biochars. **2017**, 231, 229-236	29
590	Adsorption of copper (II) by using derived-farmyard and poultry manure biochars: Efficiency and mechanism. **2017**, 689, 190-198	66
589	Sugar Cane-Converted Graphene-like Material for the Superhigh Adsorption of Organic Pollutants from Water via Coassembly Mechanisms. *Environmental Science & Technology*, **2017**, 51, 12644-12652 10.3	40
588	Biogenic Calcium Carbonate with Hierarchical Organic-Inorganic Composite Structure Enhancing the Removal of Pb(II) from Wastewater. **2017**, 9, 35785-35793	35
587	Biosorption of cadmium(II), lead(II) and cobalt(II) from aqueous solution by biochar from cones of larch (Larix decidua Mill. subsp. decidua) and spruce (Picea abies L. H. Karst). **2017**, 76, 1	10
586	Environmental application of biochar: Current status and perspectives. **2017**, 246, 110-122	370
585	Hydrochars and phosphate enhancing the transport of nanoparticle silica in saturated sands. **2017**, 189, 213-223	22
584	Biochar for volatile organic compound (VOC) removal: Sorption performance and governing mechanisms. **2017**, 245, 606-614	123
583	Biochars derived from giant reed (Arundo donax L.) with different treatment: characterization and ammonium adsorption potential. **2017**, 24, 25889-25898	10
582	Evaluation of biochars from different stock materials as carriers of bacterial strain for remediation of heavy metal-contaminated soil. **2017**, 7, 12114	32

581	Biochar modification to enhance sorption of inorganics from water. **2017**, 246, 34-47		288
580	Dynamic Effects of Biochar on the Bacterial Community Structure in Soil Contaminated with Polycyclic Aromatic Hydrocarbons. **2017**, 65, 6789-6796		36
579	Aging impacts of low molecular weight organic acids (LMWOAs) on furfural production residue-derived biochars: Porosity, functional properties, and inorganic minerals. **2017**, 607-608, 1428-1436		38
578	Enhanced adsorption of Cu(II) and Cd(II) by phosphoric acid-modified biochars. **2017**, 229, 846-853		202
577	High-efficiency removal of lead from wastewater by biochar derived from anaerobic digestion sludge. **2017**, 246, 142-149		145
576	Metal Immobilization on Wood-Derived Biochars: Distribution and Reactivity of Carbonate Phases. **2017**, 46, 845-854		12
575	Pretreatment of Raw Biochar and Phosphate Removal Performance of Modified Granular Iron/Biochar. **2017**, 23, 340-350		12
574	Qualitative and quantitative characterisation of adsorption mechanisms of lead on four biochars. **2017**, 609, 1401-1410		109
573	Can Biochar Protect Labile Organic Matter Against Mineralization in Soil?. **2017**, 27, 822-831		10
572	Biochar Production from Domestic Sludge: A Cost-effective, Recycled Product for Removal of Amoxicillin in Wastewater. **2017**, 225, 012164		5
571	The depleted mineralization of the fungicide chlorothalonil derived from loss in soil microbial diversity. **2017**, 7, 14646		14
570	Black Carbon (Biochar) In Water/Soil Environments: Molecular Structure, Sorption, Stability, and Potential Risk. *Environmental Science & Technology*, **2017**, 51, 13517-13532	10.3	267
569	Watershed soil Cd loss after long-term agricultural practice and biochar amendment under four rainfall levels. **2017**, 122, 692-700		27
568	Lead adsorption by biochar under the elevated competition of cadmium and aluminum. **2017**, 7, 2264		30
567	Transport and retention of biochar nanoparticles in a paddy soil under environmentally-relevant solution chemistry conditions. **2017**, 230, 540-549		90
566	Thermal stability of biochar and its effects on cadmium sorption capacity. **2017**, 246, 48-56		44
565	Effects of biochars and MWNTs on biodegradation behavior of atrazine by Acinetobacter lwoffii DNS32. **2017**, 577, 54-60		21
564	Aged acidic biochar increases nitrogen retention and decreases ammonia volatilization in alkaline bauxite residue sand. **2017**, 98, 157-165		65

563	Nutrient conservation during spent mushroom compost application using spent mushroom substrate derived biochar. **2017**, 169, 23-31		48
562	Low cost earthworm manure-derived carbon material for the adsorption of Cu 2+ from aqueous solution: Impact of pyrolysis temperature. **2017**, 98, 189-195		15
561	Waste-art-paper biochar as an effective sorbent for recovery of aqueous Pb(II) into value-added PbO nanoparticles. **2017**, 308, 863-871		39
560	Synthesis of magnetic biochar from pine sawdust via oxidative hydrolysis of FeCl for the removal sulfamethoxazole from aqueous solution. **2017**, 321, 868-878		166
559	Selected dark sides of biomass-derived biochars as environmental amendments. **2017**, 54, 13-20		16
558	Use of Biochar as an Amendment for Remediation of Heavy Metal-Contaminated Soils: Prospects and Challenges. **2017**, 27, 991-1014		103
557	Recent advances in engineered biochar productions and applications. **2017**, 47, 2158-2207		202
556	Multiple Characterization for Mechanistic Insights of Pb(II) Sorption onto Biochars Derived from Herbaceous Plant, Biosolid, and Livestock Waste. **2017**, 12,		3
555	Biochars Reduce Mine Land Soil Bioavailable Metals. **2017**, 46, 411-419		49
554	Adsorption of Pb(II) and Cu(II) by Ginkgo-Leaf-Derived Biochar Produced under Various Carbonization Temperatures and Times. **2017**, 14,		14
553	Properties of biochar derived from wood and high-nutrient biomasses with the aim of agronomic and environmental benefits. **2017**, 12, e0176884		233
552	Effect of culturing temperatures on cadmium phytotoxicity alleviation by biochar. **2017**, 24, 23843-23849		7
551	Biochar: The Black Diamond for Soil Sustainability, Contamination Control and Agricultural Production. **2017**,		10
550	The study of Ni (II) removal from aqueous solution by modified sediment. **2017**, 64, 012062		
549	Adsorption of sulfamethoxazole by magnetic biochar: Effects of pH, ionic strength, natural organic matter and 17□ethinylestradiol. **2018**, 628-629, 722-730		91
548	HO treatment enhanced the heavy metals removal by manure biochar in aqueous solutions. **2018**, 628-629, 1139-1148		88
547	Effect of biochar on fate and transport of manure-borne estrogens in sandy soil. **2018**, 73, 162-176		11
546	Insight into Multiple and Multilevel Structures of Biochars and Their Potential Environmental Applications: A Critical Review. *Environmental Science & Technology*, **2018**, 52, 5027-5047	10.3	349

545	Reduced bioavailability and plant uptake of polycyclic aromatic hydrocarbons from soil slurry amended with biochars pyrolyzed under various temperatures. **2018**, 25, 16991-17001	16
544	Biochar application as a soil amendment for decreasing cadmium availability in soil and accumulation in Brassica chinensis. **2018**, 18, 2511-2519	20
543	Phosphorus sorption capacity of biochars varies with biochar type and salinity level. **2018**, 25, 25799-25812	25
542	Removal of cadmium in aqueous solution using wheat straw biochar: effect of minerals and mechanism. **2018**, 25, 8688-8700	70
541	Comparison of characterization and adsorption of biochars produced from hydrothermal carbonization and pyrolysis. **2018**, 10, 27-35	62
540	Immobilization of Heavy Metals in Contaminated Soils Amended by Phosphate-, Carbonate-, and Silicate-Based Materials: From Lab to Field. **2018**, 535-543	3
539	CO2 activation promotes available carbonate and phosphorus of antibiotic mycelial fermentation residue-derived biochar support for increased lead immobilization. **2018**, 334, 1101-1107	33
538	Removal of fluoride from aqueous solution using nanoscale rice husk biochar. **2018**, 7, 446-451	29
537	Predicting Cu and Zn sorption capacity of biochar from feedstock C/N ratio and pyrolysis temperature. **2018**, 25, 7730-7739	30
536	Effects of bamboo biochar on soybean root nodulation in multi-elements contaminated soils. **2018**, 150, 62-69	37
535	Biochar alters microbial community and carbon sequestration potential across different soil pH. **2018**, 622-623, 1391-1399	122
534	Sorption, bioavailability and ecotoxic effects of hydrophobic organic compounds in biochar amended soils. **2018**, 624, 78-86	37
533	Remediation of lead-contaminated sediment by biochar-supported nano-chlorapatite: Accompanied with the change of available phosphorus and organic matters. **2018**, 348, 109-116	98
532	Remediation of As(III) and Cd(II) co-contamination and its mechanism in aqueous systems by a novel calcium-based magnetic biochar. **2018**, 348, 10-19	116
531	Interpreting the pH-dependent mechanism of simazine sorption to Miscanthus biochar produced at different pyrolysis temperatures for its application to soil. **2018**, 35, 1468-1476	6
530	Advances in research on the use of biochar in soil for remediation: a review. **2018**, 18, 2433-2450	65
529	Effects of exogenous sulfur on growth and Cd uptake in Chinese cabbage (Brassica campestris spp. pekinensis) in Cd-contaminated soil. **2018**, 25, 15823-15829	11
528	Bioavailability of Metsulfuron and Sulfentrazone Herbicides in Soil as Affected by Amendment with Two Contrasting Willow Biochars. **2018**, 100, 298-302	6

527	Dynamic changes in atrazine and phenanthrene sorption behaviors during the aging of biochar in soils. **2018**, 25, 81-90	19
526	Effect of biochar derived from faecal matter on yield and nutrient content of lettuce (Lactuca sativa) in two contrasting soils. **2018**, 6,	12
525	Adsorption of ammonium in aqueous solutions by pine sawdust and wheat straw biochars. **2018**, 25, 25638-25647	71
524	Sorption of phenanthrene to biochar modified by base. **2018**, 12, 1	45
523	Synthesis and nutrient release patterns of a biochar-based NPK slow-release fertilizer. **2018**, 15, 405-414	57
522	Experimental and modeling investigations of ball-milled biochar for the removal of aqueous methylene blue. **2018**, 335, 110-119	160
521	Vermicompost and biochar as bio-conditioners to immobilize heavy metal and improve soil fertility on cadmium contaminated soil under acid rain stress. **2018**, 621, 1057-1065	60
520	Pb(II) sorption from aqueous solution by novel biochar loaded with nano-particles. **2018**, 192, 1-4	64
519	Strong binding of apolar hydrophobic organic contaminants by dissolved black carbon released from biochar: A mechanism of pseudomicelle partition and environmental implications. **2018**, 232, 402-410	58
518	Biochar accelerates PAHs biodegradation in petroleum-polluted soil by biostimulation strategy. **2018**, 343, 276-284	132
517	Adsorption of Cu(II) and Cd(II) from aqueous solutions by ferromanganese binary oxide-biochar composites. **2018**, 615, 115-122	195
516	Effects of ball milling on the physicochemical and sorptive properties of biochar: Experimental observations and governing mechanisms. **2018**, 233, 54-63	188
515	Facilitated transport of titanium dioxide nanoparticles via hydrochars in the presence of ammonium in saturated sands: Effects of pH, ionic strength, and ionic composition. **2018**, 612, 1348-1357	18
514	Cadmium solubility and bioavailability in soils amended with acidic and neutral biochar. **2018**, 610-611, 1457-1466	50
513	The factors affecting biochar application in restoring heavy metal-polluted soil and its potential applications. **2018**, 34, 177-197	9
512	Phosphorus-loaded biochar changes soil heavy metals availability and uptake potential of maize (Zea mays L.) plants. **2018**, 194, 327-339	75
511	Biochar and nitrate reduce risk of methylmercury in soils under straw amendment. **2018**, 619-620, 384-390	43
510	Characterization of barley straw biochar produced in various temperatures and its effect on lead and cadmium removal from aqueous solutions. **2018**, 32, 125-133	20

509	Assessment of addition of biochar to filtering mixtures for potential water pollutant removal. **2018**, 25, 2167-2174	13
508	Biochar effects on uptake of cadmium and lead by wheat in relation to annual precipitation: a 3-year field study. **2018**, 25, 3368-3377	35
507	Adsorption of heavy metals from aqueous solution by UV-mutant Bacillus subtilis loaded on biochars derived from different stock materials. **2018**, 148, 285-292	36
506	The effects of biochar and rice husk on adsorption and desorption of cadmium on to soils with different water conditions (upland and saturated). **2018**, 193, 1120-1126	35
505	Release of nutrients and heavy metals from biochar-amended soil under environmentally relevant conditions. **2018**, 25, 2517-2527	23
504	Thermal air oxidation changes surface and adsorptive properties of black carbon (char/biochar). **2018**, 618, 276-283	35
503	Effect of aging on surface chemistry of rice husk-derived biochar. **2018**, 37, 410-417	22
502	Biochar-supported reduced graphene oxide composite for adsorption and coadsorption of atrazine and lead ions. **2018**, 427, 147-155	102
501	Immobilization of metals in contaminated soil from E-waste recycling site by dairy-manure-derived biochar. **2018**, 39, 2801-2809	9
500	Review on utilization of biochar for metal-contaminated soil and sediment remediation. **2018**, 63, 156-173	132
499	Characteristics of the surface chemistry of linden pyrochar after removal of labile organic matter. **2018**, 107, 012124	
498	Effects of Rice Straw, Rice Straw Ash, and Bone Charcoal on Uptake and Accumulation of Rare Earth Elements in Rice Plants. **2018**, 13,	3
497	Application of Biochar to the Remediation of Pb-Contaminated Solutions. **2018**, 10, 4440	18
496	Physical modification of biochar to expose the inner pores and their functional groups to enhance lead adsorption.. **2018**, 8, 38270-38280	41
495	Biotechnological Strategies for Effective Remediation of Polluted Soils. **2018**,	11
494	Biochar Amendment to Soil for Sustainable Agriculture. **2018**, 207-227	3
493	Sustainable Agriculture Reviews 32. **2018**,	
492	Biochar and Soil Remediation. **2018**, 85-99	

491	Immobilization of cadmium and lead in contaminated paddy field using inorganic and organic additives. **2018**, 8, 17839		56
490	Removal of a potentially hazardous chemical, tetrakis (hydroxymethyl) phosphonium chloride from water using biochar as a medium of adsorption. **2018**, 12, 196-210		13
489	Enhanced bisphenol A removal from stormwater in biochar-amended biofilters: Combined with batch sorption and fixed-bed column studies. **2018**, 243, 1539-1549		40
488	Removal of toxic metals from aqueous solution by biochars derived from long-root. **2018**, 5, 180966		11
487	Negative Impacts of Biochars on Urease Activity: High pH, Heavy Metals, Polycyclic Aromatic Hydrocarbons, or Free Radicals?. *Environmental Science & Technology*, **2018**, 52, 12740-12747	10.3	52
486	Mechanisms of the Removal of U(VI) from Aqueous Solution Using Biochar: A Combined Spectroscopic and Modeling Approach. *Environmental Science & Technology*, **2018**, 52, 13057-13067	10.3	41
485	Removal of heavy metals (Cu, Pb) from aqueous solutions using pine (Pinus halepensis) sawdust: Equilibrium, kinetic, and thermodynamic studies. **2018**, 12, 91-103		51
484	Quantitative mechanisms of cadmium adsorption on rice straw- and swine manure-derived biochars. **2018**, 25, 32418-32432		23
483	A concise review of biochar application to agricultural soils to improve soil conditions and fight pollution. **2018**, 228, 429-440		154
482	Alginate-modified biochar derived from Ca(II)-impregnated biomass: Excellent anti-interference ability for Pb(II) removal. **2018**, 165, 211-218		29
481	Facile synthesis of nano ZnO/ZnS modified biochar by directly pyrolyzing of zinc contaminated corn stover for Pb(II), Cu(II) and Cr(VI) removals. **2018**, 79, 625-637		63
480	Effects of biochar on availability and plant uptake of heavy metals - A meta-analysis. **2018**, 222, 76-85		97
479	Activated magnetic biochar by one-step synthesis: Enhanced adsorption and coadsorption for 17β-estradiol and copper. **2018**, 639, 1530-1542		92
478	Evaluating the effects of phytoremediation with biochar additions on soil nitrogen mineralization enzymes and fungi. **2018**, 25, 23106-23116		12
477	Differentiating Inorganics in Biochars Produced at Commercial Scale Using Principal Component Analysis. **2018**, 3, 6931-6944		26
476	A review on production and characterization of biochars for application in direct carbon fuel cells. **2018**, 118, 152-166		77
475	Responses of soil microbial community structure changes and activities to biochar addition: A meta-analysis. **2018**, 643, 926-935		76
474	Valorizing Rice Straw and Its Anaerobically Digested Residues for Biochar to Remove Pb(II) from Aqueous Solution. **2018**, 2018, 1-11		4

473	Simultaneous immobilization of heavy metals in soil environment by pulp and paper derived nanoporous biochars. **2018**, 16, 109-119		3
472	Responses of soil carbon pool and soil aggregates associated organic carbon to straw and straw-derived biochar addition in a dryland cropping mesocosm system. **2018**, 265, 576-586		68
471	Insight into mechanism of aged biochar for adsorption of PAEs: Reciprocal effects of ageing and coexisting Cd. **2018**, 242, 1098-1107		38
470	Synthesis of highly-efficient functionalized biochars from fruit industry waste biomass for the removal of chromium and lead. **2018**, 268, 315-325		50
469	Effect of aging in field soil on biochar's properties and its sorption capacity. **2018**, 242, 1880-1886		34
468	Potential of Cassia alata L. Coupled with Biochar for Heavy Metal Stabilization in Multi-Metal Mine Tailings. **2018**, 15,		18
467	Biochar from Biosolids Pyrolysis: A Review. **2018**, 15,		93
466	Hydrothermal Synthesis of Manganese-Containing Hydrochars for Lead Ion Removal. **2018**, 837-852		2
465	Lead (Pb) sorptive removal using chitosan-modified biochar: batch and fixed-bed studies.. **2018**, 8, 25368-25377		44
464	Thermodynamic Analysis of Nickel(II) and Zinc(II) Adsorption to Biochar. *Environmental Science & Technology*, **2018**, 52, 6246-6255	10.3	58
463	Effects of chemical oxidation on surface oxygen-containing functional groups and adsorption behavior of biochar. **2018**, 207, 33-40		136
462	Impact of Biochar on the Bioremediation and Phytoremediation of Heavy Metal(loid)s in Soil. **2018**,		10
461	Investigation of Atrazine Sorption to Biochar With Titration Calorimetry and Flow-Through Analysis: Implications for Design of Pollution-Control Structures. **2018**, 6, 307		12
460	Desorption of atrazine in biochar-amended soils: Effects of root exudates and the aging interactions between biochar and soil. **2018**, 212, 687-693		18
459	Removal of acenaphthene by biochar and raw biomass with coexisting heavy metal and phenanthrene. **2018**, 558, 103-109		13
458	Effects of Biochar and Biosolid on Adsorption of Nitrogen, Phosphorus, and Potassium in Two Soils. **2018**, 229, 1		13
457	Contrasting impacts of pre- and post-application aging of biochar on the immobilization of Cd in contaminated soils. **2018**, 242, 1362-1370		78
456	Research on biochar a comprehensive scientometric approach.. **2018**, 8, 28700-28709		8

455	Adsorption of anionic and cationic dyes on biochars, produced by hydrothermal carbonization of waste biomass: effect of surface functionalization and ionic strength. **2018**, 42, 86-99	17
454	A critical review of mechanisms involved in the adsorption of organic and inorganic contaminants through biochar. **2018**, 11, 1	68
453	Quantitative contribution of Cd adsorption mechanisms by chicken-manure-derived biochars. **2018**, 25, 28322-28334	33
452	Properties and Beneficial Uses of (Bio)Chars, with Special Attention to Products from Sewage Sludge Pyrolysis. **2018**, 7, 20	51
451	Removal of methylene blue from aqueous solution by cattle manure-derived low temperature biochar.. **2018**, 8, 19917-19929	74
450	Application of pyrogenic carbonaceous product for immobilisation of potentially toxic elements in railway sleepers and polluted soil. **2019**, 16, 23-36	3
449	Performance and mechanisms of emerging animal-derived biochars for immobilization of heavy metals. **2019**, 646, 1281-1289	62
448	Potential of Punica granatum biochar to adsorb Cu(II) in soil. **2019**, 9, 11116	17
447	Cadmium immobilization in the soil and accumulation by spinach (Spinacia oleracea) depend on biochar types under controlled and field conditions. **2019**, 12, 1	4
446	A facile syntheses of two engineered poly(vinyl alcohol) macroporous hydrogel beads for the application of Cu(II) and Pb(II) removal: batch and fixed bed column. **2019**, 6, 095315	1
445	110th Anniversary: Syngas Production Enhancement Using Calcium- and Potassium-Impregnated Chars. **2019**, 58, 15134-15141	3
444	Phytostabilization of Zn and Cd in Mine Soil Using Corn in Combination with Biochars and Manure-Based Compost. **2019**, 6, 69	12
443	Adsorptive purification of heavy metal contaminated wastewater with sewage sludge derived carbon-supported Mg(II) composite. **2019**, 691, 306-321	45
442	Novel lanthanum-modified activated carbon derived from pine cone biomass as ecofriendly bio-sorbent for removal of phosphate and nitrate in wastewater. **2019**, 30, 637-647	16
441	Desorption of calcium-rich crayfish shell biochar for the removal of lead from aqueous solutions. **2019**, 554, 417-423	26
440	A Critical Insight into Biomass Derived Biosorbent for Bioremediation of Dyes. **2019**, 4, 9762-9775	6
439	Upcycling food waste digestate for energy and heavy metal remediation applications. **2019**, 3, 100015	11
438	Study of the Mechanism of Migration and Transformation of Biochar-N and Its Utilization by Plants in Farmland Ecosystems. **2019**, 7, 17606-17615	2

437	Remediation effect of biochar-plant on heavy metal contaminated soil in mining area. **2019**, 300, 052039	1
436	Effects of Walnut Leaves Biochars on Lead and Zinc Fractionation and Phytotoxicity in a Naturally Calcareous Highly Contaminated Soil. **2019**, 230, 1	9
435	Cd(II) Adsorption on Different Modified Rice Straws under FTIR Spectroscopy as Influenced by Initial pH, Cd(II) Concentration, and Ionic Strength. **2019**, 16,	5
434	Advances in production and application of biochar from lignocellulosic feedstocks for remediation of environmental pollutants. **2019**, 292, 122030	133
433	Sorption of cadmium onto Mg-Fe Layered Double Hydroxide (LDH)-Kiwi branch biochar. **2019**, 31, 189-197	15
432	Highly Porous and Nutrients-Rich Biochar Derived from Dairy Cattle Manure and Its Potential for Removal of Cationic Compound from Water. **2019**, 9, 114	9
431	A comparative study on biochar properties and Cd adsorption behavior under effects of ageing processes of leaching, acidification and oxidation. **2019**, 254, 113123	47
430	Facile Synthesis of Calcite-Impregnated Hydrochar with High Sorption Capacity for Cu(II) from Aqueous Solution. **2019**, 4, 15022-15029	9
429	Removal of Cd and Pb with biochar made from dairy manure at low temperature. **2019**, 18, 201-210	57
428	Steam explosion of crop straws improves the characteristics of biochar as a soil amendment. **2019**, 18, 1486-1495	17
427	Effect of Biochar Amendments on the Sorption and Desorption Herbicides in Agricultural Soil. **2019** ,	2
426	Infiltration behavior of heavy metals in runoff through soil amended with biochar as bulking agent. **2019**, 254, 113114	16
425	Physicochemical property and colloidal stability of micron- and nano-particle biochar derived from a variety of feedstock sources. **2019**, 661, 685-695	66
424	Functionalized biochar-supported magnetic MnFeO nanocomposite for the removal of Pb(ii) and Cd(ii).. **2018**, 9, 365-376	51
423	Mixed heavy metal removal from wastewater by using discarded mushroom-stick biochar: adsorption properties and mechanisms. **2019**, 21, 584-592	25
422	Biochar induced Pb and Cu immobilization, phytoavailability attenuation in Chinese cabbage, and improved biochemical properties in naturally co-contaminated soil. **2019**, 19, 2381-2392	25
421	Biochar for environmental management: Mitigating greenhouse gas emissions, contaminant treatment, and potential negative impacts. **2019**, 373, 902-922	147
420	Rapid removal of triazine pesticides by P doped biochar and the adsorption mechanism. **2019**, 235, 918-925	92

419	Metal sorption by biochars: A trade-off between phosphate and carbonate concentration as governed by pyrolysis conditions. **2019**, 246, 496-504	11
418	Effects of biochar on the phenol treatment performance and microbial communities shift in sequencing batch reactors. **2019**, 161, 1-10	23
417	Remediation of heavy metal contaminated soils by biochar: Mechanisms, potential risks and applications in China. **2019**, 252, 846-855	226
416	Removal of chelated heavy metals from aqueous solution: A review of current methods and mechanisms. **2019**, 678, 253-266	136
415	Preparation and characterization of a novel graphene/biochar composite and its application as an adsorbent for Cd removal from aqueous solution. **2019**, 36, 678-687	12
414	Biochar properties and lead(II) adsorption capacity depend on feedstock type, pyrolysis temperature, and steam activation. **2019**, 231, 393-404	98
413	Sorption of lead in soil amended with coconut fiber biochar: Geochemical and spectroscopic investigations. **2019**, 350, 52-60	34
412	Proper Mode of Using Rice Straw Biochar To Treat Cd-Contaminated Irrigation Water in Mining Regions Based on a Multiyear in Situ Experiment. **2019**, 7, 9928-9936	5
411	Enhanced Cd removal from aqueous solution by biologically modified biochar derived from digestion residue of corn straw silage. **2019**, 674, 213-222	42
410	Analysis of the effect of green roof substrate amended with biochar on water quality and quantity of rainfall runoff. **2019**, 191, 304	12
409	Enhanced Pb immobilization via the combination of biochar and phosphate solubilizing bacteria. **2019**, 127, 395-401	82
408	Effect of oxidation-induced aging on the adsorption and co-adsorption of tetracycline and Cu onto biochar. **2019**, 673, 522-532	41
407	Co-pyrolysis of metal contaminated oily waste for oil recovery and heavy metal immobilization. **2019**, 373, 1-10	28
406	Bioavailability and mobility of arsenic, cadmium, and manganese in gold mine tailings amended with rice husk ash and Fe-coated rice husk ash. **2019**, 191, 232	9
405	Improvement of dyes degradation using hydrofluoric acid modified biochar as persulfate activator. **2019**, 31, 32-37	16
404	Preparation of low-cost sludge-based mesoporous carbon and its adsorption of tetracycline antibiotics. **2019**, 79, 676-687	7
403	Biochar-supported nZVI (nZVI/BC) for contaminant removal from soil and water: A critical review. **2019**, 373, 820-834	164
402	Biochar phosphorus concentration dictates mycorrhizal colonisation, plant growth and soil phosphorus cycling. **2019**, 9, 5062	32

401	A scientometric review of biochar research in the past 20 years (1998–2018). **2019**, 1, 23-43	96
400	Potentially hazardous element accumulation in rice tissues and their availability in soil systems after biochar amendments. **2019**, 19, 2957-2970	9
399	Adsorption of ciprofloxacin and Cu onto biochars in the presence of dissolved organic matter derived from animal manure. **2019**, 26, 14382-14392	9
398	Influence of Pyrolysis Temperature on Cadmium Removal Capacity and Mechanism by Maize Straw and Platanus Leaves Biochars. **2019**, 16,	8
397	Oxidative ageing induces change in the functionality of biochar and hydrochar: Mechanistic insights from sorption of atrazine. **2019**, 249, 1002-1010	26
396	Mechanisms and reutilization of modified biochar used for removal of heavy metals from wastewater: A review. **2019**, 668, 1298-1309	197
395	Two years of aging influences the distribution and lability of metal(loid)s in a contaminated soil amended with different biochars. **2019**, 673, 245-253	38
394	Facile one-step synthesis of graphitic carbon nitride-modified biochar for the removal of reactive red 120 through adsorption and photocatalytic degradation. **2019**, 1, 89-96	25
393	Biomass derived chars for energy applications. **2019**, 108, 253-273	46
392	Sorption mechanisms of lead on silicon-rich biochar in aqueous solution: Spectroscopic investigation. **2019**, 672, 572-582	50
391	Surface functional groups of carbon-based adsorbents and their roles in the removal of heavy metals from aqueous solutions: A critical review. **2019**, 366, 608-621	435
390	Effect of ethylenediaminetetraacetic acid and biochar on Cu accumulation and subcellular partitioning in Amaranthus retroflexus L. **2019**, 26, 10343-10353	2
389	Progress in Preparation and Application of Modified Biochar for Improving Heavy Metal Ion Removal From Wastewater. **2019**, 4, 31-42	86
388	Characterization of Biochars Produced from Dairy Manure at High Pyrolysis Temperatures. **2019**, 9, 634	10
387	Significance of biochar application to the environment and economy. **2019**, 64, 222-236	83
386	Biochar and Its Composites for Metal(loid) Removal From Aqueous Solutions. **2019**, 113-141	3
385	Modeling the Surface Chemistry of Biochars. **2019**, 59-72	2
384	Advances in Rice Research for Abiotic Stress Tolerance. **2019**, 585-614	10

383	Biochars and Biochar Composites. **2019**, 169-209	19
382	Biochar amendment improves crop production in problem soils: A review. **2019**, 232, 8-21	210
381	Adsorption behaviour and mechanisms of cadmium and nickel on rice straw biochars in single- and binary-metal systems. **2019**, 218, 308-318	88
380	Biochar as a sorbent for emerging contaminants enables improvements in waste management and sustainable resource use. **2019**, 210, 1324-1342	113
379	Efficient removal of oxytetracycline from aqueous solution by a novel magnetic clay-biochar composite using natural attapulgite and cauliflower leaves. **2019**, 26, 7463-7475	31
378	Application of the biochar derived from orange peel for effective biosorption of copper and cadmium in batch studies: isotherm models and kinetic studies. **2019**, 12, 1	8
377	Biochar and crushed straw additions affect cadmium absorption in cassava-peanut intercropping system. **2019**, 167, 520-530	27
376	Synthesis of functionalised biochar using red mud, lignin, and carbon dioxide as raw materials. **2019**, 361, 1597-1604	43
375	Novel and high-performance biochar derived from pistachio green hull biomass: Production, characterization, and application to Cu(II) removal from aqueous solutions. **2019**, 168, 64-71	30
374	Enhanced removal of Cr(VI) by silicon rich biochar-supported nanoscale zero-valent iron. **2019**, 215, 739-745	89
373	Biochar for Effective Cleaning of Contaminated Dumpsite Soil: A Sustainable and Cost-Effective Remediation Technique for Developing Nations. **2019**, 3-29	
372	Influence of different pyrolysis methods on the sorption property of rice straw biochar. **2019**, 54, 2773-2782	4
371	Response of ammonia volatilization to biochar addition: A meta-analysis. **2019**, 655, 1387-1396	60
370	Relative distribution of Cd adsorption mechanisms on biochars derived from rice straw and sewage sludge. **2019**, 272, 114-122	144
369	Competitive adsorption of heavy metal ions (Pb2+, Cu2+, and Ni2+) onto date seed biochar: batch and fixed bed experiments. **2019**, 54, 888-901	26
368	Strategies for crystal violet dye sorption on biochar derived from mango leaves and evaluation of residual dye toxicity. **2019**, 207, 296-305	52
367	Efficient adsorption of multiple heavy metals with tailored silica aerogel-like materials. **2019**, 40, 529-541	24
366	Date palm waste biochars alter a soil respiration, microbial biomass carbon, and heavy metal mobility in contaminated mined soil. **2019**, 41, 1705-1722	27

365	Removal of lead from aqueous solutions by ferric activated sludge-based adsorbent derived from biological sludge. **2019**, 12, 4142-4149	21
364	Effects of Pyrolysis Temperature and Holding Time on Physicochemical Properties of Swine-Manure-Derived Biochar. **2020**, 11, 613-624	18
363	Using Industrial Sewage Sludge-Derived Biochar to Immobilize Selected Heavy Metals in a Contaminated Calcareous Soil. **2020**, 11, 2825-2836	7
362	Iron Fractionation in the Calcareous Soils of Different Land Uses as Influenced by Biochar. **2020**, 11, 2321-2330	4
361	Remediation of heavy-metal-contaminated soils by biochar: a review. **2020**, 1-14	12
360	Biochar: A Sustainable Tool in Soil Pollutant Bioremediation. **2020**, 475-494	3
359	Competitive sorption and availability of coexisting heavy metals in mining-contaminated soil: Contrasting effects of mesquite and fishbone biochars. **2020**, 181, 108846	40
358	Effect of three artificial aging techniques on physicochemical properties and Pb adsorption capacities of different biochars. **2020**, 699, 134223	38
357	A Comprehensive Review on Hydrothermal Carbonization of Biomass and its Applications. **2020**, 3, 1-19	52
356	Chemical and biological immobilization mechanisms of potentially toxic elements in biochar-amended soils. **2020**, 50, 903-978	69
355	Biochar for Water and Soil Remediation: Production, Characterization, and Application. **2020**, 153-196	5
354	Cost-Effective Green Materials for the Removal of Pesticides from Aqueous Medium. **2020**, 99-130	3
353	Green Materials for Wastewater Treatment. **2020**,	4
352	Iron-montmorillonite treated corn straw biochar: Interfacial chemical behavior and stability. **2020**, 708, 134773	21
351	A review of biochar-based sorbents for separation of heavy metals from water. **2020**, 22, 111-126	57
350	Comparison of the adsorption characteristics and mechanism of Pb onto four adsorbents derived from edible fungi spent substrate. **2020**, 142, 105639	12
349	Characterization of peanut-shell biochar and the mechanisms underlying its sorption for atrazine and nicosulfuron in aqueous solution. **2020**, 702, 134767	32
348	Critical review of magnetic biosorbents: Their preparation, application, and regeneration for wastewater treatment. **2020**, 702, 134893	69

347	Occurrence, formation, environmental fate and risks of environmentally persistent free radicals in biochars. **2020**, 134, 105172	54
346	Dynamic processes in conjunction with microbial response to disclose the biochar effect on pentachlorophenol degradation under both aerobic and anaerobic conditions. **2020**, 384, 121503	19
345	Comparison of bio-chars formation derived from fast and slow pyrolysis of walnut shell. **2020**, 261, 116450	38
344	Sustainable removal of Hg(II) by sulfur-modified pine-needle biochar. **2020**, 388, 122048	40
343	Effects of wet and dry ball milling on the physicochemical properties of sawdust derived-biochar. **2020**, 48, 287-300	4
342	Burkholderia phytofirmans PsJN and tree twigs derived biochar together retrieved Pb-induced growth, physiological and biochemical disturbances by minimizing its uptake and translocation in mung bean (Vigna radiata L.). **2020**, 257, 109974	30
341	Ex situ evaluation of the effects of biochars on environmental and toxicological availabilities of metals and polycyclic aromatic hydrocarbons. **2020**, 27, 1852-1869	6
340	Porous biochar modified with polyethyleneimine (PEI) for effective enrichment of U(VI) in aqueous solution. **2020**, 708, 134575	38
339	Hydrothermal carbonization synthesis of cassava slag biochar with excellent adsorption performance for Rhodamine B. **2020**, 251, 119717	58
338	Application of biochars and solid fraction of digestate to decrease soil solution Cd, Pb and Zn concentrations in contaminated sandy soils. **2020**, 42, 1589-1600	6
337	Investigating the Aging Effects of Biochar on Soil C and Si Dissolution and the Interactive Impact on Copper Immobilization. **2020**, 25,	2
336	Revolutions in algal biochar for different applications: State-of-the-art techniques and future scenarios. **2020**, 31, 2591-2602	34
335	Latest trends in heavy metal removal from wastewater by biochar based sorbents. **2020**, 38, 101561	39
334	Adsorption Mechanism and Structure-Performance Relationship of Chromium Ions by Biochar. **2020**, 231, 1	1
333	Generation, Resuspension, and Transport of Particulate Matter From Biochar-Amended Soils: A Potential Health Risk. **2020**, 4, e2020GH000311	3
332	Immobilization of Hg(II) on high-salinity Spirulina residue-induced biochar from aqueous solutions: Sorption and transformation mechanisms by the dual-mode isotherms. **2020**, 265, 115087	8
331	Influences of feedstock sources and pyrolysis temperature on the properties of biochar and functionality as adsorbents: A meta-analysis. **2020**, 744, 140714	147
330	Sustainable Natural Materials and Their Importance for Waste Management and Stabilization of Soil Pollution. **2020**, 93-141	1

329	Transport and Retention of Cadmium in Biochar-Amended Sand Porous Media. **2020**, 36, 629-638	0
328	Reusable magnetite nanoparticles-biochar composites for the efficient removal of chromate from water. **2020**, 10, 19007	14
327	Effects of aging and weathering on immobilization of trace metals/metalloids in soils amended with biochar. **2020**, 22, 1790-1808	14
326	Absorption of Cu(II) and Zn(II) from Aqueous Solutions onto Biochars Derived from Apple Tree Branches. **2020**, 13, 3498	9
325	Importance of Biochar in Agriculture and Its Consequence. **2020**,	0
324	Facile Synthesis of Cauliflower Leaves Biochar at Low Temperature in the Air Atmosphere for Cu(II) and Pb(II) Removal from Water. **2020**, 13,	9
323	Potential role of compost mixed biochar with rhizobacteria in mitigating lead toxicity in spinach. **2020**, 10, 12159	48
322	Biochar-Assisted Wastewater Treatment and Waste Valorization. **2020**,	7
321	Sorption of Heavy Metals onto Biochar. **2020**,	5
320	. **2020**,	3
319	Impact of Biomass Source and Pyrolysis Parameters on Physicochemical Properties of Biochar Manufactured for Innovative Applications. **2020**, 8,	9
318	Application of Bamboo Plants in Nine Aspects. **2020**, 2020, 7284203	15
317	Comparison of Monovalent and Divalent Ions Removal from Aqueous Solutions Using Agricultural Waste Biochars Prepared at Different Temperatures-Experimental and Model Study. **2020**, 21,	2
316	Biochar for Vertical Greenery Systems. **2020**, 13, 6320	
315	The relationship between properties of plant-based biochars and sorption of Cd(II), Pb(II) and Zn(II) in soil model systems. **2020**, 6, e05388	10
314	Poultry Litter Biochar Increases Mycorrhizal Colonisation, Soil Fertility and Cucumber Yield in a Fertigation System on Sandy Soil. **2020**, 10, 480	17
313	Engineered Biochar Production and Its Potential Benefits in a Closed-Loop Water-Reuse Agriculture System. **2020**, 12, 2847	12
312	A comprehensive adsorption study of 1-Hydroxy-2-Naphthoic acid using cost effective engineered materials. **2020**, 19, 100881	1

311	Lignite-Activated Carbon Grafted PAA Combined with Conventional Drinking Water Treatment Processes for the Emergency Removal of Trace Pb(II) Pollution. **2020**, 231, 1	0
310	Production, activation, and applications of biochar in recent times. **2020**, 2, 253-285	65
309	Iron-modified rice husk hydrochar and its immobilization effect for Pb and Sb in contaminated soil. **2020**, 398, 122977	18
308	Agronomic Effect of Combined Application of Biochar and Nitrogen Fertilizer. **2020**, 301-310	
307	Qualitative and quantitative characterization of adsorption mechanisms for Cd by silicon-rich biochar. **2020**, 731, 139163	40
306	The Potential Effectiveness of Biochar Application to Reduce Soil Cd Bioavailability and Encourage Oak Seedling Growth. **2020**, 10, 3410	11
305	Influence of water matrix and hydrochar properties on removal of organic and inorganic contaminants. **2020**, 27, 30333-30341	4
304	Modification of calcium-rich biochar by loading Si/Mn binary oxide after NaOH activation and its adsorption mechanisms for removal of Cu(II) from aqueous solution. **2020**, 601, 124960	29
303	Addition of softwood biochar to contaminated soils decreases the mobility, leachability and bioaccesibility of potentially toxic elements. **2020**, 739, 139946	13
302	Adsorption of potentially toxic elements in water by modified biochar: A review. **2020**, 8, 104196	66
301	Preparation and application of Poly (N-formylpiperidine) in the adsorption of Pb(II) from liquid phase. **2020**, 11, 1367-1375	1
300	Fruit and Vegetable Peels: Utilization of High Value Horticultural Waste in Novel Industrial Applications. **2020**, 25,	44
299	Balancing Waste and Nutrient Flows Between Urban Agglomerations and Rural Ecosystems: Biochar for Improving Crop Growth and Urban Air Quality in The Mediterranean Region. **2020**, 11, 539	5
298	Low-cost adsorbents for removal of inorganic impurities from wastewater. **2020**, 173-203	12
297	Effect of the soil biochar aging on the sorption and desorption of Pb2+ under competition of Zn2+ in a sandy calcareous soil. **2020**, 79, 1	4
296	A novel calcium-based magnetic biochar reduces the accumulation of As in grains of rice (Oryza sativa L.) in As-contaminated paddy soils. **2020**, 394, 122507	13
295	Manure treatment and utilization in production systems. **2020**, 455-467	5
294	Biochar production and applications in agro and forestry systems: A review. **2020**, 723, 137775	69

293	Adsorption Behavior and Relative Distribution of Cd Adsorption Mechanisms by the Magnetic and Nonmagnetic Biochars Derived from Chicken Manure. **2020**, 17,		2
292	Recent trends in biochar production methods and its application as a soil health conditioner: a review. **2020**, 2, 1		34
291	Effects of ZnO Nanoparticles and Biochar of Rice Straw and Cow Manure on Characteristics of Contaminated Soil and Sunflower Productivity, Oil Quality, and Heavy Metals Uptake. **2020**, 10, 790		36
290	Copper Speciation Evolution in Swine Manure Induced by Pyrolysis. *Environmental Science & Technology*, **2020**, 54, 9008-9014	10.3	2
289	Kinetic study of removal heavy metal from aqueous solution using the synthetic aluminum silicate. **2020**, 10, 10836		10
288	Role of biochars in soil fertility management of fruit crops. **2020**, 431-444		1
287	Biochar physicochemical properties: pyrolysis temperature and feedstock kind effects. **2020**, 19, 191-215		421
286	Phosphorus recovery from the liquid phase of anaerobic digestate using biochar derived from iron-rich sludge: A potential phosphorus fertilizer. **2020**, 174, 115629		58
285	Biochar derived from corn stalk and polyethylene co-pyrolysis: characterization and Pb(ii) removal potential.. **2020**, 10, 6362-6376		19
284	Spent mushroom substrate combined with alkaline amendment passivates cadmium and improves soil property. **2020**, 27, 16317-16325		2
283	Adsorption characteristics of ciprofloxacin onto g-MoS2 coated biochar nanocomposites. **2020**, 14, 1		10
282	Combined application of biochar and sulfur regulated growth, physiological, antioxidant responses and Cr removal capacity of maize (Zea mays L.) in tannery polluted soils. **2020**, 259, 110051		45
281	Stabilization process and potential of agro-industrial waste on Pb-Contaminated soil around Pb-Zn mining. **2020**, 260, 114069		11
280	Activation of porous magnetized biochar by artificial humic acid for effective removal of lead ions. **2020**, 389, 122115		61
279	Biochar from biomass waste as a renewable carbon material for climate change mitigation in reducing greenhouse gas emissions□ review. **2020**, 11, 2247		25
278	Biochar□ stability and effect on the content, composition and turnover of soil organic carbon. **2020**, 364, 114184		62
277	Adsorption of metals by watermelon-peel-derived biochar and mechanism in aqueous solution. **2020**, 15, 99-106		1
276	Insights into the effects of long-term biochar loading on water-soluble organic matter in soil: Implications for the vertical co-migration of heavy metals. **2020**, 136, 105439		21

275	Effect of deashing on activation process and lead adsorption capacities of sludge-based biochar. **2020**, 716, 137016	50
274	Simultaneous Immobilization of Soil Cd(II) and As(V) by Fe-Modified Biochar. **2020**, 17,	9
273	Biochar Application Alleviated Negative Plant-Soil Feedback by Modifying Soil Microbiome. **2020**, 11, 799	17
272	Biochar Applications in Agriculture and Environment Management. **2020**,	4
271	Remediation of Lead-Contaminated Water by Virgin Coniferous Wood Biochar Adsorbent: Batch and Column Application. **2020**, 231, 1	19
270	Application of biochar-based materials in environmental remediation: from multi-level structures to specific devices. **2020**, 2, 1-31	60
269	Evaluating the protection of bacteria from extreme Cd (II) stress by P-enriched biochar. **2020**, 263, 114483	25
268	Grape pomace and its secondary waste management: Biochar production for a broad range of lead (Pb) removal from water. **2020**, 186, 109442	24
267	The use of biochar for sustainable treatment of contaminated soils. **2020**, 119-167	3
266	Progresses and emerging trends of arsenic research in the past 120 years. **2021**, 51, 1306-1353	9
265	The importance of mineral ingredients in biochar production, properties and applications. **2021**, 51, 113-139	14
264	Use of biochar as feed supplements for animal farming. **2021**, 51, 187-217	24
263	Characteristics and Non-parametric Multivariate Data Mining Analysis and Comparison of Extensively Diversified Animal Manure. **2021**, 12, 2343-2355	0
262	Environmental Biotechnology Vol. 3. **2021**,	
261	Biochars as media for air pollution control systems: Contaminant removal, applications and future research directions. **2021**, 753, 142249	30
260	Proceedings of the International Conference on Innovations for Sustainable and Responsible Mining. **2021**,	
259	Effects of landfill refuse on the reductive dechlorination of pentachlorophenol and speciation transformation of heavy metals. **2021**, 760, 144122	5
258	Metal chloride-loaded biochar for phosphorus recovery: Noteworthy roles of inherent minerals in precursor. **2021**, 266, 128991	12

257	Content and morphology of lead remediated by activated carbon and biochar: A spectral induced polarization study. **2021**, 411, 124605	18
256	Advances in nanoparticles tailored lignocellulosic biochars for removal of heavy metals with special reference to cadmium (II) and chromium (VI). **2021**, 4, 201-214	4
255	Short-Term Aging of Pod-Derived Biochar Reduces Soil Cadmium Mobility and Ameliorates Cadmium Toxicity to Soil Enzymes and Tomato. **2021**, 40, 3306-3316	2
254	Crayfish shell biochar for the mitigation of Pb contaminated water and soil: Characteristics, mechanisms, and applications. **2021**, 271, 116308	17
253	Responses of ammonia-oxidizing microorganisms to biochar and compost amendments of heavy metals-polluted soil. **2021**, 102, 263-272	12
252	Hydrochar and pyrochar for sorption of pollutants in wastewater and exhaust gas: A critical review. **2021**, 268, 115910	28
251	Agrochemical leaching reduction in biochar-amended tropical soils of Belize. **2021**, 72, 1243-1255	2
250	Removal of heavy metals from industrial effluents by using biochar. **2021**, 25-48	3
249	Application of Biochar for Sustainable Development in Agriculture and Environmental Remediation. **2021**, 133-153	1
248	Biochar as a sorbent for organic and inorganic pollutants. **2021**, 189-208	1
247	Effects of UV-modified biochar derived from phytoremediation residue on Cd bioavailability and uptake in Coriandrum sativum L. in a Cd-contaminated soil. **2021**, 28, 17395-17404	3
246	Investigating the cadmium adsorption capacities of crop straw biochars produced using various feedstocks and pyrolysis temperatures. **2021**, 28, 21516-21527	2
245	Impact of the Invasive Prosopis juliflora on Terrestrial Ecosystems. **2021**, 223-278	4
244	Agricultural waste based-nanomaterials: Green technology for water purification. **2021**, 577-595	6
243	The potency of biochar to improve water quality in tidal swampland. **2021**, 648, 012184	
242	Preparation and characterization of manganese-containing biochars and their lead ion adsorption mechanism. 99, S18	0
241	Critical review of biochar applications in geoengineering infrastructure: moving beyond agricultural and environmental perspectives. 1	20
240	Compost mixed fruits and vegetable waste biochar with ACC deaminase rhizobacteria can minimize lead stress in mint plants. **2021**, 11, 6606	13

239	Adsorption analysis of Zn(II) removal from aqueous solution onto Argemone maxicana biochar. 1	2
238	Effects of Biochar on Replant Disease by Amendment Soil Environment. **2021**, 52, 673-685	3
237	Efficacy of agricultural waste derived biochar for arsenic removal: Tackling water quality in the Indo-Gangetic plain. **2021**, 281, 111814	18
236	Cellulose/Biochar Cryogels: A Study of Adsorption Kinetics and Isotherms. **2021**, 37, 3180-3188	5
235	Char derived from sewage sludge of hydrothermal carbonization and supercritical water gasification: Comparison of the properties of two chars. **2021**, 123, 88-96	9
234	Defluoridation of drinking water using a ceramic filter decorated with iron oxide-biochar composites. **2021**, 18, 1321-1329	2
233	Biochar Mediated-Alleviation of Chromium Stress and Growth Improvement of Different Maize Cultivars in Tannery Polluted Soils. **2021**, 18,	11
232	Comparison of lead adsorption characteristics onto soil-derived particulate organic matter versus humic acid. **2021**, 21, 2589-2603	1
231	Capacity and potential mechanisms of Cd(II) adsorption from aqueous solution by blue algae-derived biochars. **2021**, 767, 145447	19
230	Biochar as a low-cost adsorbent for aqueous heavy metal removal: A review. **2021**, 155, 105081	66
229	An integrated method to produce fermented liquid feed and biologically modified biochar as cadmium adsorbents using corn stalks. **2021**, 127, 112-120	3
228	Preparation of a novel sludge-derived biochar by K2FeO4 conditioning to enhance the removal of Pb2+. **2021**, 42, 100417	2
227	Adsorption characteristics of modified rice straw biochar for Zn and in-situ remediation of Zn contaminated soil. **2021**, 22, 101388	4
226	Research on Distribution Characteristics, Influencing Factors, and Maintenance Effects of Heavy Metal Accumulation in Bioretention Systems: Critical Review. **2021**, 7, 03120001	4
225	Cleaner Approach for Atrazine Removal Using Recycling Biowaste/Waste in Permeable Barriers. **2021**, 6, 41	3
224	Hydrothermal carbonization of spent mushroom compost waste compared against torrefaction and pyrolysis. **2021**, 216, 106795	14
223	Soil colloids affect the aggregation and stability of biochar colloids. **2021**, 771, 145414	10
222	New insights into the underlying influence of bentonite on Pb immobilization by undissolvable and dissolvable fractions of biochar. **2021**, 775, 145824	2

221	Biochar Amendment Improves Crop Production in Problematic Soils. **2021**, 189-204	0
220	Use of Biochar as an Amendment for Remediation of Heavy Metal-Contaminated Soils. **2021**, 163-177	1
219	Influence of sawdust based biochar on gold tailings wastewater heavy metal contaminants removal. **2021**, 37, 81-91	2
218	How does the biochar of sugarcane straw pyrolysis temperature change arsenic and lead availabilities and the activity of the microorganisms in a contaminated sediment?. **2021**, 21, 3185-3200	0
217	The effects of biochars produced in different pyrolsis temperatures from agricultural wastes on cadmium uptake of tobacco plant. **2021**, 28, 3965-3971	4
216	Biochar produced from wood waste for soil remediation in Sweden: Carbon sequestration and other environmental impacts. **2021**, 776, 145953	14
215	Investigations of biochar as a tunable platform for aqueous malathion adsorption and decomposition. **2021**, 6, 759	
214	Review of organic and inorganic pollutants removal by biochar and biochar-based composites. **2021**, 3, 255-281	124
213	Antiretroviral Drugs in African Surface Waters: Prevalence, Analysis, and Potential Remediation. **2021**,	6
212	Rapid Separation and Efficient Removal of Cd Based on Enhancing Surface Precipitation by Carbonate-Modified Biochar. **2021**, 6, 18253-18259	4
211	Application of Rice Husk Biochar for Achieving Sustainable Agriculture and Environment. **2021**, 28, 325-343	8
210	Use of biochar to reduce mercury accumulation in Oryza sativa L: A trial for sustainable management of historically polluted farmlands. **2021**, 153, 106527	36
209	Material properties and environmental potential of developing world-derived biochar made from common crop residues. **2021**, 4, 100137	3
208	Effects of cotton straw-derived biochar under different pyrolysis conditions on Pb (II) adsorption properties in aqueous solutions. **2021**, 157, 105214	8
207	Assessing Class 1 Integron Presence in Poultry Litter Amended with Wood Biochar and Wood Vinegar. **2021**, 78, 3733-3740	2
206	Organic and inorganic amendments for the remediation of nickel contaminated soil and its improvement on Brassica napus growth and oxidative defense. **2021**, 416, 125921	6
205	Characterization Techniques as Supporting Tools for the Interpretation of Biochar Adsorption Efficiency in Water Treatment: A Critical Review. **2021**, 26,	1
204	CO dual roles in food scraps-derived biochar activation to enhance lead adsorption capacity. **2021**, 784, 147218	1

203	Effect of a low-cost and highly efficient passivator synthesized by alkali-fused fly ash and swine manure on the leachability of heavy metals in a multi-metal contaminated soil. **2021**, 279, 130558	2
202	Effect of biochar aging on the adsorption and stabilization of Pb in soil. 1	2
201	Fixed bed adsorption of Pb and Cu by iron modified bamboo, bagasse and tyre biochar. **2021**, 22, 100486	2
200	Microwave-assisted hydrothermal treatment of soybean residue and chitosan: Characterization of hydrochars and role of N and P transformation for Pb(II) removal. **2021**, 160, 105330	2
199	Biochar in water and wastewater treatment - a sustainability assessment. **2021**, 420, 129946	33
198	Quantitative analysis on the mechanism of Cd removal by MgCl-modified biochar in aqueous solutions. **2021**, 420, 126487	17
197	Overlooked contributions of biochar-derived dissolved organic matter on the adsorption of Pb (II): Impacts of fractionation and interfacial force. **2021**, 420, 126692	3
196	Production and beneficial impact of biochar for environmental application: A comprehensive review. **2021**, 337, 125451	52
195	Critical review of magnetic polysaccharide-based adsorbents for water treatment: Synthesis, application and regeneration. **2021**, 323, 129118	3
194	Performance of biochar-supported nanoscale zero-valent iron for cadmium and arsenic co-contaminated soil remediation: Insights on availability, bioaccumulation and health risk. **2021**, 290, 118054	9
193	Nitric acid-modified hydrochar enhance Cd sorption capacity and reduce the Cd accumulation in rice. **2021**, 284, 131261	2
192	Roles of soluble minerals in Cd sorption onto rice straw biochar.. **2022**, 113, 64-71	3
191	Biochar from constructed wetland biomass waste: A review of its potential and challenges. **2022**, 287, 132259	5
190	Biochar as environmental armour and its diverse role towards protecting soil, water and air. **2022**, 806, 150444	12
189	Temporal changes in arsenic and lead pools in a contaminated sediment amended with biochar pyrolyzed at different temperatures. **2022**, 287, 132102	0
188	Recent advances in pesticides removal using agroindustry based biochar. **2022**, 265-290	0
187	Current approaches in horticultural crops to mitigate the effect of metal stress. **2021**, 275-288	
186	Use of Biochar in Sustainable Agriculture. **2019**, 501-528	1

185	Initial Results of Using Biochar Derived from Spent Coffee Grounds to Remove Pollutants from Livestock Wastewater in Vietnam. **2021**, 305-325	2
184	Biochar Facilitated Hydroxyapatite/Calcium Silicate Hydrate for Remediation of Heavy Metals Contaminated Soils. **2020**, 231, 1	17
183	Mechanisms and adsorption capacities of biochar for the removal of organic and inorganic pollutants from industrial wastewater. **2021**, 18, 3273-3294	64
182	Adsorption Properties of Subtropical and Tropical Variable Charge Soils: Implications from Climate Change and Biochar Amendment. **2016**, 135, 1-58	41
181	Investigating the adsorption behavior and quantitative contribution of Pb adsorption mechanisms on biochars by different feedstocks from a fluidized bed pyrolysis system. **2020**, 187, 109609	15
180	Comparison of the lead and copper adsorption capacities of plant source materials and their biochars. **2019**, 236, 118-124	56
179	The remediation of PAH contaminated sediment with mangrove plant and its derived biochars. **2020**, 268, 110410	10
178	Cadmium (II) removal from aqueous solution using magnetic spent coffee ground biochar: Kinetics, isotherm and thermodynamic adsorption. **2020**, 7, 085503	6
177	Effects of ageing on the surface characteristics and Cu(ii) adsorption behaviour of rice husk biochar in soil. **2020**, 18, 1421-1432	1
176	Properties of Controlled-Release-Water-Retention Fertilizer Coated with Carbonaceous-g-Poly(acrylic acid-co-acrylamide)Superabsorbent Polymer. **2017**, 8, 141-147	3
175	Activated Plantain Peel Biochar As Adsorbent For Removal of Zinc(II) Ions From Aqueous Solution: Equilibrium and Kinetics Studies.. 1257-1270	3
174	Removal of Cr (III) Ions from Wastewater using Sawdust and Rice Husk Biochar Pyrolyzed at Low Temperature. **2016**, 4, 44-54	5
173	Hydrothermal carbonization of glucose in saline solution: sequestration of nutrients on carbonaceous materials. **2016**, 4, 173-189	10
172	A review and future directions on enhancing sustainability benefits across food-energy-water systems: the potential role of biochar-derived products. **2019**, 6, 379-416	8
171	Atrazine Sorption by Biochar, Tire Chips, and Steel Slag as Media for Blind Inlets: A Kinetic and Isotherm Sorption Approach. **2016**, 08, 1266-1282	10
170	Use of biochar to enhance constructed wetland performance in wastewater reclamation. **2016**, 21, 36-44	65
169	Effect of Lyophilization on Survivability and Growth Kinetic of Trichoderma Strains Preserved on Various Agriculture By-Products. **2017**, 66, 181-188	4
168	Biochar-rhizosphere interactions - A review. **2017**, 66, 151-161	15

167	Review of Biochar Properties and Remediation of Metal Pollution of Water and Soil. **2020**, 10, 200902	19
166	Recent advances in biochar application for water and wastewater treatment: a review. **2020**, 8, e9164	16
165	Effects of Biochar on Soil Quality and Heavy Metal Availability in a Military Shooting Range Soil in Korea. **2011**, 44, 67-77	12
164	Feasibility Study of Different Biochars as Adsorbent for Cadmium and Lead. **2015**, 48, 332-339	1
163	Cu and Cd Sorption of the Biochar Derived from Coffee Sludge. **2012**, 17, 47-53	3
162	Biochar Amendment Reduces the Availability of Pb in the Soil and Its Uptake in Lettuce. **2021**, 9,	0
161	Insights into the removal of Cd and Pb from aqueous solutions by NaOH□EtOH-modified biochar. **2021**, 24, 102031	1
160	Impact of Eisenia fetida earthworms and biochar on potentially toxic element mobility and health of a contaminated soil. **2022**, 806, 151255	1
159	Effect of acid modified tea-waste biochar on crop productivity of red onion (Allium cepa L.). **2021**, 132551	2
158	Evaluation of Cd2+, Cu2+, Pb2+, and Zn2+ Removal by Cow Manure and Corn Stover Biochar with the Emphasis on the Solubility-Normalized Dubinin□Radushkevich Approach for the Computation of the Adsorption Potential (□ **2021**, 147,	1
157	Physicochemical Properties and Cu Sorption of the Biochar Derived from Woody Biomass. **2012**, 17, 54-61	1
156	Effect of Biochars on Adsorption of Cu(II), Pb(II) and Cd(II) by an Oxisol from Hainan, China. **2013**, 983-987	1
155	Effect of Biochar bead on Adsorption of Heavy Metals. **2014**, 47, 351-355	
154	Adsorption Characteristics of Cr6+ and As3+ Using Seaweed Biochar. **2015**, 26, 483-488	1
153	Production Method of Biochar-bead from Biochar Powder and Its Application for the Removal of Heavy Metal. **2015**, 20, 127-132	
152	An Overview of Heavy-Metal Removal from Water with Biochar. **2017**, 05, 78-85	
151	Research Progress of Biochar in Soil Restoration of Lead and Cadmium Composite Contaminated Soil. **2018**, 06, 108-114	
150	Remediation of Soil Contaminated with Heavy Metals by Using Nanomaterials. **2018**, 08, 127-136	

149	Transformation and Stabilization of Lead and Chromium Using Aspergillus sp. and Bio-charcoal Amendment. **2018**, In Press,	
148	Potential of Biochar as Cost Effective Adsorbent in Removal of Heavy Metals Ions From Aqueous Phase: A Mini Review. **2019**, 5, 29-34	1
147	Biochar Application for Greenhouse Gases Mitigation. **2020**, 39-68	0
146	Biochar: A New Environmental Paradigm in Management of Agricultural Soils and Mitigation of GHG Emission. **2020**, 223-258	1
145	Tailoring biochar for persulfate-based environmental catalysis: Impact of biomass feedstocks. **2021**, 424, 127663	6
144	Biochar as an Adsorbent: A Short Overview. **2020**, 399-422	2
143	Potential of developing podzolic soil-based potting media from wood ash, paper sludge and biochar. **2022**, 301, 113811	1
142	Role of coconut shell biochar and earthworm (Eudrilus euginea) in bioremediation and palak spinach (Spinacia oleracea L.) growth in cadmium-contaminated soil. **2022**, 302, 114057	0
141	A Biorefinery Based Zero-Waste Utilization of Non-edible Oilseeds for Biodiesel and Biofuel Production Along with Chemicals and Biomaterials. **2020**, 21-55	
140	Biochar: A Growing Sanguinity as a Combinatorial Tool for Remediation of Heavy Metals from Wastewaters and Solid Waste Management. **2020**, 87-111	
139	Sustainable Natural Materials Used for Adsorbing Pollutants from the Aqueous Medium. **2020**, 143-186	
138	Effect of Biochar Addition to Soil on Plant Quality. **2021**, 233-242	
137	Removal of pesticides from water and waste water by microbes. **2022**, 371-399	
136	Nature-Based Units as Building Blocks for Resource Recovery Systems in Cities. **2021**, 13, 3153	4
135	Engineered biochar: A way forward to environmental remediation. **2021**, 122510	1
134	Ionic liquid-assisted production of high-porosity biochar with more surface functional groups: Taking cellulose as attacking target. **2021**, 433, 133811	0
133	Biochar applications enhance the phytoextraction potential of Salix smithiana [Willd.] (willow) in heavily contaminated soil: potential for a sustainable remediation method?. 1	0
132	Application of Biochar for Removal of Heavy Metals, Pathogens, and Emerging Contaminants from Wastewater. **2021**, 329-344	

131	Application of Biochar for Wastewater Treatment. **2021**, 67-90	0
130	Removal of Contaminants by Modified Biochar-Based Material. **2021**, 305-328	
129	Biochar: A Futuristic Tool to Remove Heavy Metals from Contaminated Soils. **2021**, 231-258	
128	Role of Biochar in the Removal of Organic and Inorganic Contaminants from Wastewater. **2021**, 107-134	
127	Qualitative and quantitative adsorption mechanisms of zinc ions from aqueous solutions onto dead carp derived biochar.. **2021**, 11, 38273-38282	0
126	Biochar-based land development.	0
125	Efficient removal of Cd(II) by phosphate-modified biochars derived from apple tree branches: Processes, mechanisms, and application.. **2022**, 819, 152876	2
124	Effects of corn stalk biochar and pyrolysis temperature on wheat seedlings growth and soil properties stressed by herbicide sulfentrazone. **2022**, 25, 102208	0
123	Contrasting effects of dry-wet and freeze-thaw aging on the immobilization of As in As-contaminated soils amended by zero-valent iron-embedded biochar.. **2021**, 426, 128123	0
122	Does biochar application in heavy metal-contaminated soils affect soil micronutrient dynamics?. **2021**, 133349	4
121	Removal of potentially toxic elements from contaminated soil and water using bone char compared to plant- and bone-derived biochars: A review.. **2021**, 427, 128131	7
120	Vinegar residue biochar: A possible conditioner for the safe remediation of alkaline Pb-contaminated soil.. **2022**, 293, 133555	1
119	Carbon potentials of different biochars derived from municipal solid waste in a saline soil. **2022**, 32, 283-293	1
118	Porous carbons for environment remediation. **2022**, 541-802	
117	Effects of wetland plant biochars on heavy metal immobilization and enzyme activity in soils from the Yellow River estuary.. **2022**, 1	
116	Sawdust-biomass based materials for sequestration of organic/inorganic pollutants and potential for engineering applications. **2022**, 100274	4
115	Water Conventional and novel treatment methods. **2022**, 37-66	
114	Remediation of cadmium contaminated soil by composite spent mushroom substrate organic amendment under high nitrogen level.. **2022**, 430, 128345	1

113	Potential of biochar derived from three biomass wastes as an electrode catalyzing oxygen reduction reaction. **2022**, 34, 42-50	1
112	Feedstock type, pyrolysis temperature and acid modification effects on physiochemical attributes of biochar and soil quality. **2022**, 15, 1	1
111	The effects of biochar and redox conditions on soil Pb bioaccessibility to people and waterfowl.. **2022**, 133675	0
110	Effects of biochar dose on cadmium accumulation in spinach and its fractionation in a calcareous soil. **2022**, 15, 1	3
109	Poultry Litter Biochar as a Gentle Soil Amendment in Multi-Contaminated Soil: Quality Evaluation on Nutrient Preservation and Contaminant Immobilization. **2022**, 12, 405	2
108	Liquefiable Biomass-Derived Porous Carbons and their Applications in CO2 Capture and Conversion.	0
107	Softwood Biochar and Eisenia Fetida (Savigny) Earthworms Promote Sorghum Bicolor Growth and the Immobilization of Potentially Toxic Elements in Contaminated Soils.	
106	Lead induced-toxicity in vegetables, its mitigation strategies, and potential health risk assessment: a review. 1	1
105	Magnetically Recyclable Loofah Biochar by KMnO Modification for Adsorption of Cu(II) from Aqueous Solutions.. **2022**, 7, 8844-8853	1
104	Save our soil from heavy metals (Pb and Cd) accumulation for rice growth. **2022**, 1005, 012001	1
103	Development of phosphorus composite biochar for simultaneous enhanced carbon sink and heavy metal immobilization in soil.. **2022**, 154845	1
102	A New Schiff Base Organically Modified Silica Aerogel-Like Material for Metal Ion Adsorption with Ni Selectivity. **2022**, 2022, 1-18	0
101	BIOCHAR PRODUCTION AND AMENDMENT. **2022**, 259-296	
100	Biomass-derived biochar: From production to application in removing heavy metal-contaminated water. **2022**, 160, 704-733	8
99	Toxicity Assessment and Phytostabilization of Contaminated Soil by Using Wheat Straw-derived Biochar in Tomato Plants. 1	1
98	Sustainable biochar effects on the remediation of contaminated soil: A 2-crop season site practice near a lead-zinc smelter in Feng County, China.. **2022**, 119095	1
97	Assessing the efficiency and mechanism of zinc adsorption onto biochars from poultry litter and softwood feedstocks. **2022**, 18, 101039	0
96	Reutilization of waste biomass from sugarcane bagasse and orange peel to obtain carbon foams: Applications in the metal ions removal.. **2022**, 154883	1

95	Nano-biochar: A novel solution for sustainable agriculture and environmental remediation.. **2022**, 210, 112891		2
94	Synergetic Enhancement of Pb and Zn Adsorption onto Size-Selective Sludge Biochar Portions in Multiple Ion Solution Systems.. **2022**, 7, 496-503		0
93	The status of heavy metals in arable soils of contrasting texture treated by biochar - an experiment from Slovakia.. **2021**, 1-17		
92	Effects of Rice Husk Biochar Coated Urea and Anaerobically Digested Rice Straw Compost on the Soil Fertility, and Cyclic Effect of Phosphorus.. **2021**, 11,		1
91	A review on the production of P-enriched hydro/bio-char from solid waste: Transformation of P and applications of hydro/bio-char.. **2022**, 134646		0
90	Potential of biochar for clean-up of heavy metal contaminated soil and water. **2022**, 16, 146-154		
89	The reduction of the As and Pb phytotoxicity of a former mine technosol depends on the amendment type and properties.. **2022**, 134592		1
88	Table_1.DOCX. **2020**,		
87	Table_2.DOCX. **2020**,		
86	Table_3.DOCX. **2020**,		
85	Table_4.DOCX. **2020**,		
84	Table_5.DOCX. **2020**,		
83	Table_6.DOCX. **2020**,		
82	An insight into the sorptive interactions between aqueous contaminants and biochar. **2022**, 643-666		
81	The mechanistic study on removal of most toxic heavy metals ions by biochar from aqueous solution. **2022**,		
80	Speciation Evolution of Phosphorus and Sulfur Derived from Sewage Sludge Biochar in Soil: Ageing Effects.. *Environmental Science & Technology*, **2022**,	10.3	0
79	Biochar decreases Cd mobility and rice (Oryza sativa L.) uptake by affecting soil iron and sulfur cycling.. **2022**, 155547		1
78	Biochar raw material selection and application in the food chain: A review.. **2022**, 155571		0

77	The leaching behaviour of herbicides in cropping soils amended with forestry biowastes.. **2022**, 119466	1
76	Bio-efficacy of imidazolinones in weed control in a tropical paddy soil amended with optimized agrowaste-derived biochars.. **2022**, 134957	0
75	Effects of Wood-derived Biochar Application on Soil Chemical Properties and Growth of Lettuce (Lactuca sativa L.). **2019**, 52, 457-466	2
74	Utilization of biochar to mitigate the impacts of potentially toxic elements on sustainable agriculture. **2022**, 203-220	
73	Biochar for carbon sequestration and environmental remediation in soil. **2022**, 35-49	
72	Hydrochar and activated carbon materials from P- and N-rich biomass waste for environmental remediation and bioenergy application. **2022**, 51-69	
71	Antibiotic bioremediation by new generation biochar: Recent updates. **2022**, 127384	0
70	Effect of Salt Modification on Biochar Obtained from the Thermochemical Conversion of Sugarcane Bagasse.	0
69	Treatment of Pb(II) pollution in livestock wastewater by MgFe2O4 modified manure-biochar derived from livestock itself: Special role of endogenous dissolved organic matter and P species. **2022**, 446, 137068	0
68	Remediation of Hg, Cd, Pb Contaminated Soil by Biochar from Corn Straw Pyrolyzed Combined with Potassium Dihydrogen Phosphate: Adsorption Potential, Speciation Transformation, and Risk Assessment.	
67	Biochar Impregnated Nanomaterials for Environmental Cleanup. **2022**, 331-345	
66	A review of biochar functionalized by thermal air oxidation. **2022**,	0
65	Waste-derived biochar for water pollution control and sustainable development.	5
64	Effects of Combined Application of Solid Pyrolysis Products and Digestate on Selected Soil Properties of Arenosol and Plant Growth and Composition in Laboratory Experiments. **2022**, 12, 1440	0
63	Biochar application strategies for polycyclic aromatic hydrocarbons removal from soils. **2022**, 213, 113599	1
62	Effect of oxidative aging of biochar on relative distribution of competitive adsorption mechanism of Cd2+ and Pb2+. **2022**, 12,	0
61	Removal of phosphorus using biochar derived from Fenton sludge: Mechanism and performance insights. **2022**, 94,	0
60	Pyrolysis of exhausted hydrochar sorbent for cadmium separation and biochar regeneration. **2022**, 306, 135546	0

59	Effect of ball milling with hydrogen peroxide or ammonia hydroxide on sorption performance of volatile organic compounds by biochar from different pyrolysis temperatures. **2022**, 450, 138027		2
58	The Effects of Biochar on Microbial Community Composition in and Beneath Biological Soil Crusts in a Pinus massoniana Lamb. Plantation. *Forests*, **2022**, 13, 1141	2.8	0
57	Engineered Biochar as Adsorbent for the Removal of Contaminants from Aqueous Medium. **2022**, 353-381		0
56	Perspectives of Engineered Biochar for Environmental Applications: A Review. **2022**, 36, 7940-7986		2
55	Comparative study of biochar properties and energy consumption derived from cow manure by a pilot-scale dual-function microwave and electric pyrolysis reactor.		
54	Effect of biochar amendment on metal mobility, phytotoxicity, soil enzymes, and metal-uptakes by wheat (Triticum aestivum) in contaminated soils. **2022**, 307, 135889		3
53	Sorption and post-sorption performances of Cd, Pb and Zn onto peat, compost and biochar. **2022**, 321, 115968		1
52	Preparation and applications of biochar based nanocomposite: A review. **2022**, 167, 105691		0
51	Development of multifarious carrier materials and impact conditions of immobilised microbial technology for environmental remediation: A review. **2022**, 314, 120232		1
50	The toxicity of heavy metals and plant signaling facilitated by biochar application: Implications for stress mitigation and crop production. **2022**, 308, 136466		1
49	Mechanism of metal sorption by biochar. **2022**, 313-330		0
48	Biochar technology: A promising approach to mitigate environmental pollutants. **2022**, 273-288		0
47	Wastewater Treatment Using Biochar Technology. **2022**,		0
46	Removal of heavy metals from wastewater using biochars: adsorption and mechanisms. **2022**, 34, 385-394		1
45	Nonmetal function groups of biochar for pollutants removal: A review. **2022**, 100171		0
44	Investigating the performance of adsorbents made from the canola stalk for the removal of lead from aqueous solutions. **2022**, 15,		0
43	Modern treatment techniques for the recycling and reuse of wastewater: An Indian perspective. **2022**, 459-485		0
42	Adsorption characteristics and mechanisms of Cd2+ from aqueous solution by biochar derived from corn stover. **2022**, 12,		0

41	Oak Biomass in the Form of Wood, Bark, Brushwood, Leaves and Acorns in the Production Process of Multifunctional Biochar. **2022**, 27, 7191	0
40	Impacts of Biochar-Based Controlled-Release Nitrogen Fertilizers on Soil Prokaryotic and Fungal Communities. **2022**, 12, 1706	0
39	A Concise Review on the Synthesis, and Characterization of the Pyrolytic Lignocellulosic Biomass for Oil, Char and Gas Production: Recent Advances and its Environmental Application.	0
38	Effects of biochar particle size on sorption and desorption behavior of NH4+-N. **2022**, 189, 115837	0
37	Biochar and Eisenia fetida (Savigny) promote sorghum growth and the immobilization of potentially toxic elements in contaminated soils. **2023**, 182, 104697	1
36	Fruit and Vegetable Peel Waste: Applications in Food and Environmental Industries. **2022**, 259-287	0
35	Effects of Biochar on Purslane-Mediated Transfer and Uptake of Soil Bioavailable Cadmium. **2022**, 233,	1
34	A review of mechanism and adsorption capacities of biochar-based engineered composites for removing aquatic pollutants from contaminated water. 10,	1
33	Decreased in vitro bioaccessibility of Cd and Pb in an acidic Ultisol through incorporation of crop straw-derived biochar. **2023**, 317, 120721	0
32	Different feedstocks of biochar affected the bioavailability and uptake of heavy metals by wheat (Triticum aestivum L.) plants grown in metal contaminated soil. **2023**, 217, 114845	3
31	Novel hydrophilic straw biochar for the adsorption of neonicotinoids: kinetics, thermodynamics, influencing factors, and reuse performance.	1
30	Ameliorative Effects of Biochar for Cadmium Stress on Bean (Phaseolus vulgaris L.) Growth. **2022**, 14, 15563	0
29	Reviewing the effect of pyrolysis temperature on the fourier-transform infrared spectra of biochars. **2022**, 25, 160-173	0
28	Mitigating the Toxic Effects of Chromium on Wheat (Triticum aestivum L.) Seed Germination and Seedling Growth by Using Biochar and Polymer-Modified Biochar in Contaminated Soil. **2022**, 14, 16093	0
27	Effects of differently aged biochar to soil NH3 volatilization, N2O emissions and microbial diversity, and interaction.	0
26	Performance, life cycle assessment, and economic comparison between date palm waste biochar and activated carbon derived from woody biomass. **2022**, 8, e12388	0
25	Sustainability assessment of biochar applications. **2023**, 415-441	0
24	PAHs, PCBs and Environmental Contamination in Char Products.	0

23	New insight into the synergy of nitrogen-related sites on biochar surface for sulfamethoxazole adsorption from water. **2023**, 108159	0
22	Biochar: Porous Carbon Material, Its Role to Maintain Sustainable Environment. **2023**, 595-621	0
21	Porous carbon derived from waste corrugated paper with KOH-NaOH mixture and its adsorption property for methylene blue.	0
20	A critical review on using biochar as constructed wetland substrate: Characteristics, feedstock, design and pollutants removal mechanisms. **2023**, 190, 106927	0
19	Preparation and application of biochar from co-pyrolysis of different feedstocks for immobilization of heavy metals in contaminated soil. **2023**, 163, 12-21	0
18	Double-edged sword effect of nano-biochar for Cd2+ adsorption on zeolite. **2023**, 11, 109901	0
17	Biosourced adsorbent prepared with rice husk part 1: A complete understanding of the structure of materials, the major role of mineral impurities for metal extraction. **2023**, 36, e00601	0
16	Effects of Biochars Derived from Sewage Sludge and Olive Tree Prunings on Cu Fractionation and Mobility in Vineyard Soils over Time. **2023**, 12, 416	0
15	On validity, physical meaning, mechanism insights and regression of adsorption kinetic models. **2023**, 376, 121416	1
14	Soil amendments for vanadium remediation: a review of remediation of vanadium in soil through chemical stabilization and bioremediation.	0
13	Bamboo for producing charcoal and biochar for versatile applications.	0
12	Advances and prospects of biochar in improving soil fertility, biochemical quality, and environmental applications. 11,	0
11	Unravelling the Recent Developments in the Production Technology and Efficient Applications of Biochar for Agro-Ecosystems. **2023**, 13, 512	0
10	Complementing compost with biochar for agriculture, soil remediation and climate mitigation. **2023**, 1-90	0
9	Insight into the Speciation of Heavy Metals in the Contaminated Soil Incubated with Corn Cob-Derived Biochar and Apatite. **2023**, 28, 2225	0
8	A Critical Review of Biochar Application for the Remediation of Greenhouse Gas Emissions and Nutrient Loss in Rice Paddies: Characteristics, Mechanisms, and Future Recommendations. **2023**, 13, 893	0
7	Biochar supported nanoscale zero-valent iron for the kinetics removal and mechanism of decabromodiphenyl ethane in the sediment.	0
6	Chromium-Sorbed Maize Stalk Biochar and Its Power Benefited Disposal: An Effective Power Generation Method for Removal of Chromium. **2023**, 234,	0

5	Effects of Pyrolysis and Ball-Milling on the Physicochemical and Rhodamine B Removal Characteristics of Rice-Bran-Derived Biochar. **2023**, 13, 4288	0
4	Role of Biochar in the Adsorption of Heavy Metals. **2023**, 293-307	0
3	Recent Advances in Nano-metal Oxide-Biochar Composites for Efficient Removal of Environmental Contaminants. **2023**, 261,	0
2	Efficient removal of chromium by a novel biochar-microalga complex: Echanism and performance. **2023**, 103156	0
1	Corn husk biochar and chromium(VI) ions blended soil as fuel in soil microbial fuel cell.	0