

CV (Prof. Adel Rabie Ahmed Usman)

Adel Usman, PhD Environmental Soil Chemist

Professor of Soil Science

Assiut University

Department of Soils and Water

Faculty of Agriculture

Statistics

- *Scopus H index (37)*
- *Citations (3936)*

Skills & Activities

Skills Bioremediation, Environmental Biotechnology, Environmental Impact Assessment, Soil Science, Heavy Metals Analysis, Sorption, Environmental Pollution, Trace Elements, Soil, Environment, Environmental Analytical Chemistry, Analytical Chemistry, Nanocomposites, Heavy Metals, Salinity, Arsenic, Irrigation, Fertilizers, Remediation, Soil Analysis, Biochar, Phytoremediation, Pyrolysis, Waste, Water Quality, Environmental Analysis, Environmental Management, Wastewater Treatment

Patents

Mohammad I Al-Wabel, Jamal Elfaki, Adel Usman: *Encapsulated Sustained Release Urea Fertilizer*. Year: 07/2018

Publication Highlights

Book Chapters

Avanthi Deshani Igalavithana, Yong Sik Ok, Adel R.A. Usman, Mohammad I. Al-Wabel, Patryk Oleszczuk, Sang Soo Lee: *The Effects of Biochar Amendment on Soil Fertility*. Agricultural and Environmental Applications of Biochar: Advances and Barriers, SSSA Special Publication 63 11/2015; Soil Science Society of America, Inc., ISBN: 978-0-89118-967-1, DOI:10.2136/sssaspecpub63.2014.0040

Adel Usman, Yakov Kuzyakov, Karl Stahr: *Einfluss von Tonmineralen und Fe-Oxiden auf die Mobilität von Schwermetallen und deren Aufnahme durch Weizen*. *Wurzelinduzierte Bodenvorgänge*, 01/2004: pages 123-128; , DOI:10.1007/978-3-322-80084-8_19

Abdel R. A. Usman, Yakov Kuzyakov, Karl Stahr: *Einfluss des Pflanzenwachstums und der organischen Substanz auf C- und N- Umsatz im Boden*. *Prozessregulation in der Rhizosphäre*, 01/2003: pages 125-128; , DOI:10.1007/978-3-663-07809-8_17

Journal Publications (more than 90 ISI indexed articles)

Selected ISI indexed articles

Alazzaz A, Usman A R A, Ahmad M, Ibrahim HM, ElfakiJ, SallamAS, et al. (2020) Potentialshort-termnegativeversuspositiveeffectsof olive mill-derived biocharon nutrientavailabilityin a calcareousloamysandsoil. *PLoS ONE* 15(7):e0232811.

Munir Ahmada, Adel R.A. Usmana,b, Qaiser Hussainc, Abdullah S.F. Al-Farraja, Yiu Fai Tsangd, Jochen Bundschuhe, Mohammad I. Al-Wabel (2020) Fabrication and evaluation of silica embedded and zerovalent ironcomposited biochars for arsenate removal from water. *Environmental pollution*. 266:115256.

Yassir Abdin, Adel Usman, Yong Sik Ok, Yiu Fai Tsang, Mohammad Al-Wabel: *Competitive sorption and availability of coexisting heavy metals in mining-contaminated soil: Contrasting effects of mesquite and fishbone biochars*. *Environmental Research* 10/2019; , DOI:10.1016/j.envres.2019.108846

Mohammad I. Al-Wabel, Munir Ahmad, Adel R.A. Usman, Sallam S. Abdulazeem, Qaiser Hussain, Ridwan B. Binyameen, Muhammed R. Shehu, Yong Sik Ok: *Evaluating the efficiency of different natural clay sediments for the removal of chlortetracycline from aqueous solutions*. *Journal of Hazardous Materials* 10/2019; , DOI:10.1016/j.jhazmat.2019.121500

Jahangir Ahmad, Shoaib Naeem, Munir Ahmad, Adel R.A. Usman, Mohammad I Al-Wabel: *A critical review on organic micropollutants contamination in wastewater and removal through carbon nanotubes*. *Journal of Environmental Management* 09/2019; 246:214-228., DOI:10.1016/j.jenvman.2019.05.152

Muhammad Imran Rafique, Adel R. A. Usman, Munir Ahmad, Abdelazeem Sallam, Mohammad I. Al-Wabel: *In situ immobilization of Cr and its availability to maize plants in tannery waste-contaminated soil: effects of biochar feedstock and pyrolysis temperature*. *Journal of Soils and Sediments* 07/2019; , DOI:10.1007/s11368-019-02399-z

Abdulaziz S. Alsewaileh, Adel R. Usman, Mohammad I. Al-Wabel: *Effects of pyrolysis temperature on nitrate-nitrogen (NO₃⁻-N) and bromate (BrO₃⁻) adsorption onto date palm biochar*. *Journal of Environmental Management* 05/2019; 237:289-296., DOI:10.1016/j.jenvman.2019.02.045

Mohammad I Al-Wabel, Jamal Elfaki, Adel Usman, Qaiser Hussain, Yong Sik Ok: *Performance of dry water and porous carbon-based sorbents for carbon dioxide capture*. *Environmental Research* 04/2019; 174., DOI:10.1016/j.envres.2019.04.020

- Munir Ahmad, Adel R. A. Usman, Muhammad Imran Rafique, Mohammad I. Al-Wabel: *Engineered biochar composites with zeolite, silica, and nano-zerovalent iron for the efficient scavenging of chlortetracycline from aqueous solutions*. Environmental Science and Pollution Research 03/2019;, DOI:10.1007/s11356-019-04850-7
- Balal Yousaf, Guijian Liu, Qumber Abbas, Muhammad Ubaid Ali, Ruwei Wang, Rafay Ahmed, Chengming Wang, Mohammad I. Al-Wabel, Adel R. A. Usman: *Operational control on environmental safety of potentially toxic elements during thermal conversion of metal-accumulator invasive ragweed to biochar*. Journal of Cleaner Production 05/2018; 195., DOI:10.1016/j.jclepro.2018.05.246
- Mohammad I. Al-Wabel, Muhammad Imran Rafique, Mahtab Ahmad, Munir Ahmad, Abid Hussain, Adel R.A. Usman: *Pyrolytic and hydrothermal carbonization of date palm leaflets: Characteristics and ecotoxicological effects on seed germination of lettuce*. Saudi Journal of Biological Sciences 05/2018; 26(4)., DOI:10.1016/j.sjbs.2018.05.017
- Meththika Vithanage, Tharanga Bandara, Mohammad I. Al-Wabel, Adel Abduljabbar, Adel R. A. Usman, Mahtab Ahmad, Yong Sik Ok: *Soil Enzyme Activities in Waste Biochar Amended Multi-Metal Contaminated Soil; Effect of Different Pyrolysis Temperatures and Application Rates*. Communications in Soil Science and Plant Analysis 02/2018;, DOI:10.1080/00103624.2018.1435795
- Abdul-Aziz Al-Enazy, Fahad Al-Barakah, Saud Al-Oud, Adel Usman: *Effect of phosphogypsum application and bacteria co-inoculation on biochemical properties and nutrient availability to maize plants in a saline soil*. Archives of Agronomy and Soil Science 02/2018; 64(10)., DOI:10.1080/03650340.2018.1437909
- Abdelazeem Sallam, Abdulrahman Bader Alharbi, Adel R. A. Usman, Qaiser Hussain, Yong Sik Ok, Mohammad Alshayaa, Mohammad Al-Wabel: *Environmental consequences of dam construction: a case study from Saudi Arabia*. Arabian Journal of Geosciences 02/2018; 11(3)., DOI:10.1007/s12517-018-3387-8
- Khaled A M Alsaleh, Helmut Meuser, Adel R A Usman, Mohammad I Al-Wabel, Abdullah S Al-Farraj: *A comparison of two digestion methods for assessing heavy metals level in urban soils influenced by mining and industrial activities*. Journal of Environmental Management 01/2018; 206:731-739., DOI:10.1016/j.jenvman.2017.11.026
- Prasanna Kumarathilaka, Mahtab Ahmad, Indika Herath, Kushani Mahatantila, B C L Athapattu, Jörg Rinklebe, Yong Sik Ok, Adel Usman, Mohammad I Al-Wabel, Adel Abduljabbar, Meththika Vithanage: *Influence of bioenergy waste biochar on proton- and ligand-promoted release of Pb and Cu in a shooting range soil*. Science of The Total Environment 12/2017; 625:547-554., DOI:10.1016/j.scitotenv.2017.12.294
- Mohammad I. Al-Wabel, Adel Rabie A. Usman, Abdullah S. Al-Farraj, Yong Sik Ok, Adel Abduljabbar, Abdulelah I. Al-Faraj, Abdelazeem S. Sallam: *Date palm waste biochars alter a soil respiration, microbial biomass carbon, and heavy metal mobility in contaminated mined soil*. Environmental Geochemistry and Health 12/2017; 41(4)., DOI:10.1007/s10653-017-0049-9

- Munir Ahmad, Mahtab Ahmad, Adel R. A. Usman, Abdullah S. Al-Faraj, Adel Abduljabbar, Yong Sik Ok, Mohammad I. Al-Wabel: *Date palm waste-derived biochar composites with silica and zeolite: synthesis, characterization and implication for carbon stability and recalcitrant potential*. Environmental Geochemistry and Health 12/2017; 41(4)., DOI:10.1007/s10653-017-0047-y
- Anesh Manjaly Poulouse, Ahmed Yagoub Elnour, Arfat Anis, Hamid Shaikh, S M Al-Zahrani, Justin George, Mohammad I Al-Wabel, Adel R Usman, Yong Sik Ok, Daniel C W Tsang, Ajit K Sarmah: *Date palm biochar-polymer composites: An investigation of electrical, mechanical, thermal and rheological characteristics*. Science of The Total Environment 11/2017; 619-620:311-318., DOI:10.1016/j.scitotenv.2017.11.076
- Munir Ahmad, Adel R.A. Usman, Abdullah S. Al-Faraj, Mahtab Ahmad, Abdelazeem Sallam, Mohammad I. Al-Wabel: *Phosphorus-loaded biochar changes soil heavy metals availability and uptake potential of maize (Zea mays L.) plants*. Chemosphere 11/2017; 194., DOI:10.1016/j.chemosphere.2017.11.156
- Abd El-Azeem Sallam, Mateb S. Al-Zahrani, Mohammad I. Al-Wabel, Abdullah S. Al-Farraj, Adel R. A. Usman: *Removal of Cr(VI) and Toxic Ions from Aqueous Solutions and Tannery Wastewater Using Polymer-Clay Composites*. Sustainability 10/2017; 9(11):1993., DOI:10.3390/su9111993
- Mohammad I. Al-Wabel, Qaiser Hussain, Adel R. A. Usman, Mahtab Ahmad, Adel Abduljabbar, Sallam, S. Abdulazeem, Yong Sik Ok: *IMPACT OF BIOCHAR CHARACTERISTICS ON SOIL CONDITIONS AND AGRICULTURAL SUSTAINABILITY: A REVIEW*. Land Degradation and Development 10/2017;
- Mohammad I. Al-Wabel, Qaiser Hussain, Adel R.A. Usman, Mahtab Ahmad, Adel Abduljabbar, S. Abdulazeem, Yong Sik Ok: *Impact of Biochar Properties on Soil Conditions and Agricultural Sustainability: A Review*. Land Degradation and Development 10/2017;, DOI:10.1002/ldr.2829
- Munir Ahmad, Mahtab Ahmad, Adel R. A. Usman, Abdullah S. Al-Faraj, Adel S. Abduljabbar, Mohammad I. Al-Wabel: *Biochar composites with nano zerovalent iron and eggshell powder for nitrate removal from aqueous solution with coexisting chloride ions*. Environmental Science and Pollution Research 09/2017; 25(2)., DOI:10.1007/s11356-017-0125-9
- Munir Ahmad, Mahtab Ahmad, Ahmed H. El-Naggar, Adel R.A. Usman, Adel Abduljabbar, Meththika Vithanage, Jamal Elfaki, Abdulelah Al-Faraj, Mohammad I. Al-Wabel: *Aging effect of organic and inorganic fertilizers on phosphorus fractionation in a calcareous sandy loam soil*. Pedosphere 08/2017;, DOI:10.1016/S1002-0160(17)60363-1.