

A review on biochar feedstocks, production, characterization, modification and potential applications

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VIDEO MANUSCRIPT

ABSTRACT

Biochar is a stable carbon-rich by-product prepared from biomaterials through various heating methods. This video discusses different methods of biochar production, factors influencing biochar production and properties, mechanism of biochar production, methods to examine the structure and composition of biochar, techniques to modify the biochar for various applications. Biochar is usually produced through various techniques such as pyrolysis, torrefaction, gasification, flash carbonization and hydrothermal carbonization. The property of synthesized biochar depends on several factors, including feedstock composition and type, pyrolysis conditions such as temperature and time. The physical and chemical properties of biochar play a major role in several applications such as agriculture, environmental remediation, catalyst/support, fuel cells and supercapacitors. Recent research indicated that it is possible to alter the properties of biochar to suit the applications with the aid of various physical and chemical agents. Thus, this video review summarizes the advancements made in the field of biochar with special emphasis on agricultural applications and contaminant remediation.

KEYWORDS

Biomass; Carbon Sequestration; Chemical Modification; Pyrolysis; Syngas

FULL VIDEO LINK

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ACKNOWLEDGEMENTS

This work was financially supported by Ramalingaswami Re-entry Fellowship (Department of Biotechnology, Ministry of India, India). The author would also like to thank Hong Kong Baptist University (Hong Kong) for providing experimental facilities.

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Vijayaraghavan, K. (2016) Biochar: production strategies, potential feedstocks and applications. *Journal of Environment and Biotechnology Research*, 4, 41-49.

CITE THIS ARTICLE

K. Vijayaraghavan (2018) A review on biochar feedstocks, production, characterization, modification and potential applications, *Journal of Environment and Biotechnology Research*, 7(1), pp. 11.

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Received: 05-10-2017

Revised: 11-12-2017

Accepted: 17-12-2017

Available online: 01-01-2018