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Biochar supercapacitors: Recent developments in the materials and methods (Book Chapter)

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Abstract

Biochar receives significant importance as it exhibits extensive scientific and technological potential in many fields with the added advantages of environmental restoration as a carbon sink. Traditionally, biochar has been explored for the soil amendment purposes with lower economic impacts, which hampered the viability of their industrial sectors. Thus, the value added uses of biochar have become essential, which lead to the exploration of their application potential in many industrial sectors including catalysis, water treatment, composite fabrication and energy storage and conversion. Among them, carbonaceous biochar has potential usage in electrochemical energy storage devices especially supercapacitors. Though, the usage of biochar in supercapacitors is in preliminary stage, significant research accomplishments have been devoted in recent years. As the demand for high performance supercapacitors made with sustainable materials expands exponentially, this chapter summarizes the recent developments on biochar-based supercapacitors. © 2018 Scrivener Publishing LLC.

Author keywords

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Chapters in this book

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supercapacitor applications: An investigation on the impact of acid washing and activation

(2024) Energy Storage

Kalla, A. , Mayilswamy, N. , Kandasubramanian, B.

Biochar: a sustainable and an eco-friendly material for energy storage applications

(2024) International Journal of Green Energy

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