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| <b>Title (1)</b>              | : | <b>Biochar and the Circular Economy</b>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         |
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| <b>Abstract</b>               | : | <p>This chapter seeks to explore the role of biochar in the circular economy. Biochar is the product of biomass that has undergone heating in the presence of no or very little oxygen. It is historically known as charcoal but differs in its application. While charcoal is typically produced from wood and used as a fuel for heat and power generation as well as a reducing agent in metallurgical processes, biochar is deployed in nondestructive applications such as plant cultivation, animal husbandry, as an adsorbent in water treatment, and as a filler in composites. The increased interest in biochar stems from the fact that it can lock up carbon dioxide for centuries in the form of pyrogenic carbon and thus mitigate global warming. Equally important is the fact that biochar can be produced from a finite but renewable resource, primary biomass. The increased extraction and depletion of biogenic and mineral resources to satisfy the global demand of a rising human population puts pressure on the ecosystem on a local and global scale. There is a need to substitute fossil fuel-based carbonaceous materials such as conventional carbon black and activated carbon with a renewable alternative offering similar properties. Biochar may be a potential candidate. However, a one-to-one substitution of fossil fuel-based carbon with biochar may not be feasible due to the limited availability of biomass.</p> |