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Development and Assessment of a Functional Activated Fore-modified Bio-hydrochar for Amoxicillin Removal

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1 **Development and Assessment of a Functional Activated Fore-modified Bio-**
2 **hydrochar for Amoxicillin Removal**

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11 **Abstract**

12 A fore-modified method was put forward and hybridized into hydrothermal
13 process with acid, neutral and alkali circumstances. The activated fore-modified
14 bio-hydrochars of feather and cornstalk (AFBF and AFBC) were manufactured. Some
15 thinner carbon layers/smaller micro carbon spheres and much more hydroxyls
16 functional groups were clearly observed in the acid and alkali fore-modified bio-
17 hydrochars (AFBs). Batch experiments were taken to assess the AMOX removal
18 abilities. By contrast, the AFB fore-modified by alkali, has got the most superior
19 adsorbability of 92.87 mg/g. Particularly, the BET surface areas of AFBs increased by
20 155.46% and the adsorbance of AMOX increased as much as 42.92% than traditional
21 bio-hydrochar. Zeta potentials were introduced to illustrate the interactions between
22 adsorbents and adsorbates under different pH. In addition, the powerful chemical

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