

### Adsorption characteristics of phenol and 4-nitrophenol on corn-based activated carbons

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The highly porous novel corn grain-based activated carbons ( $> 2500 \text{ m}^2/\text{g}$ ), which have high surface area compared to the other biomass based carbons, were used in this study. The adsorption characteristics of phenol and 4-nitrophenol on the prepared activated carbons were analyzed in a batch mode. To investigate the adsorption properties of the prepared samples in liquid phase, the effects of adsorbate concentrations, pH, and temperatures were examined in detail. The adsorption equilibrium data were analyzed by using the Langmuir, Freundlich and Sips isotherm models. Also the pseudo first-order and pseudo second-order equation were employed in the kinetic studies.