

**SYNTHESIS AND CHARACTERIZATION OF BENZOYL THIOUREA  
DERIVATIVES IMPREGNATED IN BAMBOO CHARCOAL**

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## ABSTRACT

### SYNTHESIS AND CHARACTERIZATION OF BENZOYL THIOUREA DERIVATIVES IMPREGNATED IN BAMBOO CHARCOAL (*Gigantochloa Scortechinii*)

An effective method for treating wastewater is adsorption. Charcoal is an option for adsorbent used in adsorption process. By modifying charcoal chemically, its uptake capacity will be improved. Thiourea is an organic compound that has sulfide in its molecule and can participate in a chemical reaction upon chelating. In this study, thiourea and its newly synthesized derivatives were impregnated into bamboo charcoal (*Gigantochloa Scortechinii*). N-(phenylcarbamothioyl) benzamide, **L1** was synthesized and characterized spectroscopically using FTIR methods. The presence of C=O group and C=S peaks, appeared in FTIR around  $1671\text{ cm}^{-1}$  and  $1254\text{ cm}^{-1}$ , respectively, indicates the attachment of benzoyl thiourea and aniline. Bamboo charcoal was used as starting material to prepare composite adsorbent starting with pre-treatment with distilled water, impregnation in thiourea solutions, followed by heating (reflux). To confirm the impregnation of the charcoal with thiourea derivatives, FTIR analyses was performed on the generated material, as well as the raw charcoal and thiourea derivatives. FTIR shown the presence of different functional groups. Different functional group and size enlargement are expected to improve intake capacity of bamboo charcoal.