



Synthesis of activated carbon based on corn husks

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Abstract

Corn husks have a high cellulose content. Cellulose is the basic material for making carbon. Chemically activated carbon will have different properties and crystal structures from ordinary carbon. Therefore, in this study have purpose was to synthesize activated carbon from corn husks. The synthesis process is carried out by burning corn husks. Then the carbon from the combustion is mashed into carbon powder. After that, the carbon powder was activated by titrating with HCl for 20 minutes and NH_4OH for 30 minutes. The results of the titration powder were then washed to obtain a powder with a pH of 7. Then the activated carbon powder was carbonized at 100°C for 5 hours. From the synthesis of activated carbon from corn husk, activated carbon with an orthorhombic structure with space-group $Pc a 21 (29)$ corresponds to COD: 4026660 at hkl 131 and hkl 141.

METHODS

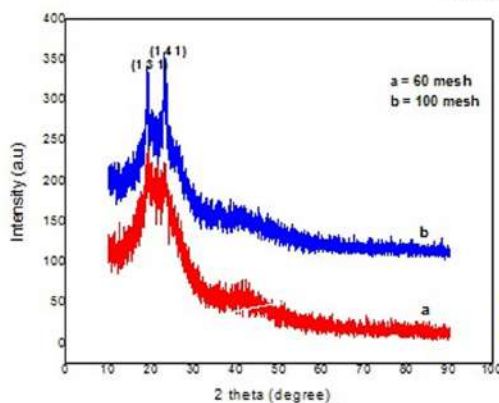
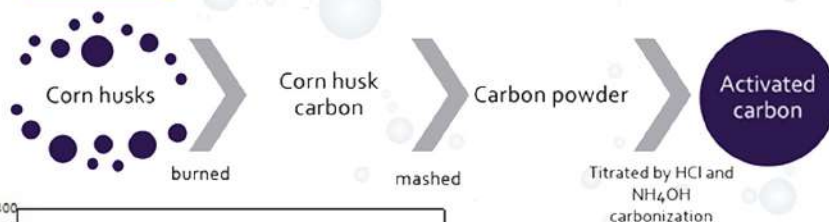


Fig. 2. X-ray diffraction pattern on corn husk charcoal powder heated for 5 hours at 100°C (a) 60 mesh, (b) 100 mesh

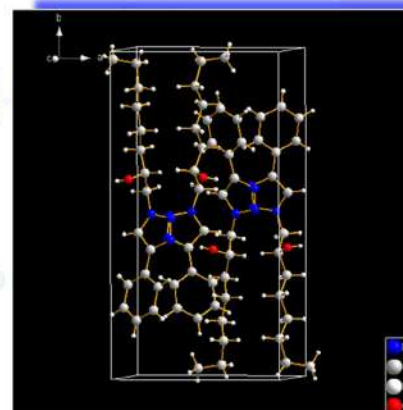


Fig. 1. Structure crystal orthorhombic of graphite

CONCLUSION

The result of the study was obtained activated carbon have an orthorhombic structure with space-group $Pc a 21 (29)$ corresponds to COD: 4026660 at hkl 131 and hkl 14.

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