

Characterization of Surface Structures on Thermal Treated Carbon Black

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Carbon black (CB) have been widely applied as an anchor material, a conductive additive and a colorant. They are usually provided through a stage of high temperature treatment for adding functionality. Since the surface structures such as functional groups and size of basal plane critically affect interaction between CBs and guest molecules or ions, they are key factor determining the physical properties of the CB. It is quite important to clarify the surface structure including functional groups and bonding states (sp^2 and sp^3) for the fabrication of the desired CB. Heat of adsorption determined from gas adsorption isotherms becomes one of the effective indications for understanding the carbon surface. In this study, we characterized micro-structures of thermal-treated CBs by linking the structural factor with the heat of adsorption.