

**SYNTHESIS AND CHARACTERIZATION OF POROUS
CARBON USING WATER SOLUBLE TEMPLATE**

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JULY 2014

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ABSTRACT

SYNTHESIS AND CHARACTERIZATION OF POROUS CARBON USING WATER SOLUBLE TEMPLATE

Synthesizing porous carbon from carbohydrates using metal chloride template has been found to be the latest method which is easier to be administered and cost effective. This method involves a specific procedure using glucose as precursor, with zinc chloride and sodium chloride as templates. Since they are soluble in water, the study proven that the carbon can mix homogenously with the three elements. Porous carbon was developed for the preparation of macropores. Carbon material in combination of micropores have been synthesized using water soluble template ZnCl_2 and NaCl method which was combined with carbohydrates. In this study, porous produced are large micropores with size of 2500 nm which was developed through low cost and eco-friendly method. This was done with the use of SEM. Thermogravimetric analysis (TGA) shows that 93.891% carbon lost at temperature ranges between 380-720 °C when mixed with 2.5 ml ZnCl_2 template. Fourier Transform Infrared (FTIR) analysis on the other hand shows that C–H, O–H and C=O features appeared on the porous carbon. This study proven that preparation of porous carbon using water soluble is carbon templates were produced a macropores for ZnCl_2 template and for NaCl template the carbon porous was not obtained.