



ChemTech

## International Journal of ChemTech Research

CODEN (USA): IJCRGG, ISSN: 0974-4290, ISSN(Online):2455-9555  
Vol.10 No.15, pp 312-316, 2017

# Synthesis and Characterization of Bio-Coke from Charcoal Coconut Shell

Meytij Jeanne Rampe<sup>1\*</sup> and Vistarani Arini Tiwow<sup>2</sup>

<sup>1</sup>Department of Chemistry, Faculty of Mathematics and Natural Science,  
State University of Manado, Tondano, Sulawesi Utara, Indonesia.

<sup>2</sup>Department of Physics, Faculty of Mathematics and Natural Science,  
State University of Makassar, Parang Tambung, Sulawesi Selatan, Indonesia.

**Abstract:** In this paper, This research was aimed to study the utilization of polyvinyl alcohol (PVA) as the stimulant agent in synthesis coke from the charcoal, to study the effects of PVA in the form of either powder or solution on the character of structural growth of crystal and its physical-chemical properties and to study the effect of temperature (1000°C) on the character of graphite carbon. Several methods were performed such as Fourier Transform Infrared (FT-IR) spectrometry to determine the functional groups of the carbon, X-ray diffraction (XRD) to identify the structure of carbon crystal, Scanning Electron Microscopy-Energy Dispersive Spectroscopy (SEM-EDS) to analyze the topography of surface and to analyze the component of material.

Several carbon technologies, such as calcinations, mixing and sintering at high temperature, were carried out by employing charcoal produced from coconut shell as the raw material and PVA as the stimulant. Characterization of carbon material showed that there was a change on the physical-chemical properties of raw material which has been sintered at 1000°C, at which coke was produced in this process.

**Keywords :** Coke; PVA; coconut shell; FTIR; XRD; SEM-EDS.

Meytij Jeanne Rampe *et al* /International Journal of ChemTech Research, 2017,10(15): 312-316.

\*\*\*\*\*