

## **Effect of pyrolysis temperature on the synthesis of carbon fiber from natural organic waste**

### **Abstract**

Carbon fibers are produced from natural sources of water hyacinth plants that have been dried, ground and sieved to three different particle sizes of 600  $\mu\text{m}$ , 300  $\mu\text{m}$  and less than 300  $\mu\text{m}$ . Through the analysis of data obtained from Differential Thermal Analysis (DTA) and Thermal Gravimetric Analysis (TGA), pyrolysis process was carried out at three different temperatures that is 320 ° C, 330 ° C and 350 ° C. Effect of different pyrolysis temperature on the properties of carbon fibers produced have been studied using Scanning Electron Microscope (SEM) analysis method. Results of SEM observed the carbon of the smallest particle size give the best structure and texture of surface morphology for optimum pyrolysis temperature of 330°C.

**Keywords;** Carbon Fiber (CF), Pyrolysis, Temperature, Water Hyacinth