

## **Identification of Peat Profile, Physicochemical Properties and Microstructures on Different Peat Soil Vegetation Types**

### **ABSTRACT**

Peat commonly known as highly organic soil, is a key issue at tropical and coastal infrastructure building. As a result, understanding the peat's characteristics is critical. To investigate the characteristics of several peats in Sabah is the purpose of this study. For this study, peat samples were taken from two different locations in the Beaufort Sabah, namely Klias and Lumadan, with different land vegetation types. Field work and laboratory testing were aimed to figure out the degree of humification and peat depth, as well as the physical and chemical properties of the peat. In addition, EDX and SEM tests were conducted to study the peat's chemical composition and its microstructural characteristics. The outcome shows that Klias and Lumadan samples are under classification of hemic (pseudo-fibrous) peat, which displays H6 to H7 on the von Post scale, indicating an intermediate degree of breakdown. Both research sites show different peat depths of 4 and 4.5m, respectively. The moisture content, organic content, fibre content, specific gravity, liquid limit, and acidity of peat from Klias to Lumadan sites are found to be different. Chemical composition shows that the peat sample in Klias contains more elements of carbon compared to the Lumadan sample. The SEM result of Klias peat samples is made up of fibres that are woody, porous in nature and shows a little looser fibric arrangement. In contrast, the SEM result for Lumadan samples are lack on organic matter and fibre in soil, shows flaky granular nature and low quantity of void pores than the Klias sample. In this study, the SEM results are used to support the findings of the field and laboratory tests.