

Abstract

Swelling soils are a major engineering problem and their detection is one of the most important site investigation undertakings in the construction industry. Methods of their detection have been developed over the years, most of which utilize the soil physical properties as the indices of their identification. Some of these have proved quite expensive and time-consuming. In this research an alternative, relatively faster and cheaper method is explored. The method involves the use of Methylene Blue Absorption (MBA) as the engineering index to estimate the Cation Exchange Capacity (CEC) and spectral absorption feature characteristics as the mineral identification method. The relationship between the MBA and the characteristics of the absorption features is used to explore the possibility of estimating CEC from spectral data.