

ABSTRACT NO.: 522

TITLE: Astrobiology-Cation Exchange Capacity (CEC) of Mud Volcanoes

AUTHOR: Ian T. Latchman

SUPERVISORS: Dr. Shirin Haque and Mr. Riad Hosein

This project was centred on the elucidation of the chemical properties of mud volcanic soil. The property selected was Cation Exchange Capacity (CEC) values and was done for eleven volcanoes found in a wide geographical distribution around the southern regions of Trinidad. This study was carried out to contribute to a model which will be used as an analogue to the volcanic conditions on Mars. The approach of the project was to use an optimal procedure for the measurement of the property. The results obtained for the cation exchange capacity experiments have values that range between 4 to 12 and there seems to be a range of values for entire experiment. Different methods were tried such as the ammonium acetate method (buffered) and the unbuffered method which yielded better results and was more accurate. This project being the first time to ever be attempted on this scale is very comparative to the one that was attempted in the past only for the Piparo mud volcano which was found to have a CEC of 4.57.