COMPOSITES OF HYDROPHILIC AND HYDROPHOBIC POLYMERS AS WICKING AGENTS

Ibe, Kenneth Abara Department of Chemistry College of Science Federal University of Petroleum Resources Effurun ,P.M.B.1221 Effurun, Delta State NIGERIA Otanocha, Benedict Omonigho Department of Mechanical Engineering College of Technology, Federal University of Petroleum Resources, Effurun P.M.B.1221 Effurun, Delta State, NIGERIA

ABSTRACT

Wicking action of hydrophilic polymers (different wood species)- Iroko, Melicia excels; Lagos Mahogany, Khayaspp; Afara, Terminaliasuperb; Malina, Gmelinaarborea and hydrophobic polymers(polythene) composites were explored in this investigation. The prepared wicking agents were tested for their wicking capacities with water and crude oil. The results showed that almost all the wicking agents had higher percentage of oil absorption than water. The range of oil absorption was 1.32 - 13.05% in Afara/Talc/polythene (5:1:4w/w) and Iroko/Talc/polythene (4:1:5w/w) respectively while the range for water absorption was 0.017%- 6.79% in Malina/Talc/ Polythene (5:1:4w/w) and Iroko/Talc/Polythene (4:1:5w/w) respectively. Since most of the matrices absorbed more oil than water, it suggests that the composites could be used as effective media for addressing challenges posed by clean- up of crude oil spills.

Keywords: Composites, wicking, waste polymer, hydrophilic, hydrophobic.