Natural Composite Sheet for Oil Spilled Cleanup

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Oil spilled into land, river or ocean always causes major problems for the environment. Absorbents made from structured fiber are found to be the best material to clean up oil spilled. In this study, natural fiber composites mainly composed of regenerated cellulose from rice straw through the viscose process, blended with kapok fiber and powdery pomelo alberdoes were developed. Firstly, holocellulose was extracted from rice straw, yielding approximately 41% (w/w). Then, xanthation of cellulose was performed to obtain a viscose paste. The viscose previously derived was mixed with kapok fibers, powdery pomelo alberdoes, and mixture of both (ratio 1:1 by wt). Then, the composites (6*6*1 cm3) were formed as regenerated cellulose through the Sulfuric acid. The oil absorption capacity of the composites was tested through the machine oil. The results showed that the oil absorption capacity of all studied composites was not significantly different (ca. 1 g oil/g composite). Next, we further tried to increase the porosity of our composites by adding sodium sulfate into viscose paste. Its oil absorption capacity was finally determined.

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