Applications of reinforced composites of coconut fiber and rubber resin

Victor H.Oliveira, Zélia M. C. Ludwig, Victor R. Silva, Diogo R. S. Dores, Valdemir Ludwig

Universidade Federal de Juiz de Fora

Célia R. da Costa

Politecnico di Milano

In the last decades, the degradation of sustainability and other environmental issues have become a matter of great importance and priority for modern society. In order to preserve the environment, research using biomass materials has grown.

Natural fiber-reinforced polymer studies are cost-effective options for replacing synthetic fiber composites. Areas, such as materials engineering, have used alternative polymeric compounds reinforced with natural fibers for design and other applications.

This work focuses on the processing, characterization and analysis of the composite that applies viability to the development of footwear, rapes and other utensils. The compound was made with natural resin derived from rubber tree (Hevea brasiliensis) and coconut fiber (Cocos nucifera L.). We know that a high concentration of cellulose increases the tensile strength of the fibers and the percentage of lignin gives structural resistance to the walls and is a natural antibacterial. For the characterization of the compound, the samples were submitted to tensile force, Raman spectroscopy, DTA / TG and the result of the pyrolysis was analyzed by the FTIR method.

The results of the characterization of the composite showed close resistance and composition in comparison with other vegetal fibers found in the literature.

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