Development of a Low-cost Ceiling Material Based on Local Rice Husks and Waste Plastics

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In the modern world, plastics play a dominant role among all other types of materials. However, not like other materials, plastics take long time to degrade in normal environmental conditions. Plastics used in packaging industry are often discarded to the environment and generates many environmental issues. Due to these issues, past few years many researches focused on recycling and reusing waste plastics. One of the main methods of recycling plastic is makingcomposites.

This study was focused to develop a composite material for ceiling sheets using virgin and waste low-density polyethylene and local rice husk. The rice husk- LDPE composite samples were made by using compression moulding techniques after mixing different proportions of rice husk with LDPE.

Tensile strength, Flexural strength, swelling, water absorption, Impact strength, hardness and thermal conductivity were checked for all the samples. Results show increasing of hardness, swelling, water absorption and thermal conductivity and reduction of tensile strength, flexural strength, and impact strength with increasing percentage of rice husk. According to the test results, Sample with 20:80 rice husk to LDPE ratio shows better results to use as ceiling materials based on the test results.

Keywords: Composite, Rice husk, LDPE, Waste plastic, Ceiling Material