

**Title:**

Effects of luffa and glass fibers in polyurethane-based ternary sandwich composites for building materials

**Journal:**

SN Applied Sciences, Volume 3, Issue 12, December 2021.

**Document Type:**

Erratum (open access)

**Authors:**

*Jamaluddin, J.F.,*

*Firouzi, A.,*

*Islam, M.R.,*

*Yahaya, A.N.A.*

**Full text link:**

Publisher : <https://link.springer.com/article/10.1007/s42452-020-3037-0>

**Scopus preview:**

<https://www.scopus.com/record/display.uri?eid=2-s2.0-85120162017&doi=10.1007%2fs42452-021-04879-9&origin=inward&txGid=2b17ae71dca51bc3ab9c3278f40fb2ff>

**Abstract:**

Luffa fiber, glass wool (yellow) and glass fiber (white) were used into polyurethane (PU) to prepare sandwich composites. Effects of reinforcement in the composites were evaluated in terms of sound absorbance, water absorption and mechanical properties. In addition, the elastic and plastic nature along with the ignition property of the composites due to the reinforcement of the fibers was also revealed. The thermal properties of the composites were determined by differential scanning calorimetry and thermogravimetric analysis, whereas, the surface morphology of the samples before and after the ignition were examined by scanning electron microscopy (SEM). Result analysis revealed that the PU composites reinforced with glass fiber (white) showed the highest sound absorbance (21.3 dB) and tensile strength (0.96 MPa) compare to the others. The thermal stability was enhanced by 10 °C due to the reinforcement of the glass and luffa fiber. The glass transition temperature was increased significantly (58 °C) by the addition of glass fiber. The sound absorption coefficient changed from 0.21 to 0.27 due to the incorporation of the glass fiber. A large number of different-sized pores created in the composites as observed from the SEM analysis.