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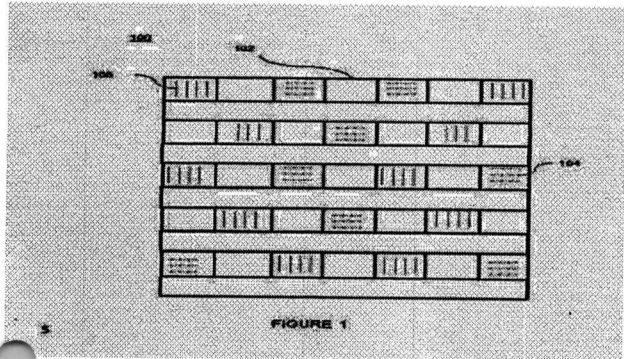
(71)Name of Applicant :
1)KALINGA UNIVERSITY RAIPUR
Address of Applicant :NAYA RAIPUR, CHHATTISGARH, INDIA, PIN-492101 -----

Name of Applicant : NA
Address of Applicant : NA

(72)Name of Inventor :
MR. NURESH KUMAR KHUNTE
Address of Applicant :KALINGA UNIVERSITY RAIPUR, NAYA RAIPUR, CHHATTISGARH, INDIA, PIN 492101 NAYA RAIPUR -----

(57) Abstract :

The present invention relates to a hybrid polymer composite with randomly oriented short fibers. The composite comprises a polymer matrix, banana fibers randomly oriented and embedded in the polymer matrix in a weight percentage range of 20-40%, and glass fibers randomly oriented and embedded in the polymer matrix in a weight percentage range of 60-80%. The composite exhibits enhanced strength and stiffness properties due to the combination of banana and glass fibers, which are present in a weight ratio ranging from 10:90 to 70:30. The banana fibers are preferably treated with an alkali solution before being embedded in the polymer matrix, and the glass fibers are surface-treated. The polymer matrix may comprise a thermoplastic or a thermoset resin, such as polypropylene, polyethylene, or a combination thereof. The composite can be fabricated using various processes such as injection molding, compression molding, vacuum-assisted resin transfer molding, and hand lay-up.



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