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(57) Abstract :

APPLICANT: Dr. PAULMONY THARMARAJ AND Dr. JUSTUS SHAKINA TITLE: A PROCESS OF PREPARATION OF NATURAL FIBER REINFORCED POLYMER COMPOSITE SHEETS AND PRODUCT THEREOF ABSTRACT The present invention discloses a process of preparation of natural fiber reinforced polymer composite sheets for use as sound proof and damping control materials. The process of the present invention comprises of following step; (a) preparation of hydroxylated triglyceride oil comprising of mixing predetermined volume of triglyceride oil and predetermined volume of formic acid in a predetermined ratio under vigorous stirring at predetermined temperature followed by slowly adding predetermined volume of hydrogen peroxide under continues stirring for predetermined time with predetermined temperature to form a residue which is extracted plurality of times with predetermined volume of diethyl ether and separating organic layer followed by drying over anhydrous sodium sulphate and filtering solvent diethyl ether and evaporating to form hydroxylated triglyceride oil; (b) preparation of poly (triglyceride oil fumarate) polyester resin comprising of blending predetermined volume of the formed hydroxylated triglyceride oil with predetermined volume and concentration of maleic anhydride in predetermined temperature and heating to predetermined temperature for predetermined time followed by adding catalytic amount of morpholine base upon vigorous blending to form poly (triglyceride oil fumarate) polyester resin; (c) preparation of natural fiber reinforced polymer composite comprises of adding predetermined volume of the formed poly (triglyceride oil fumarate) polyester resin with predetermined volume of monomer and natural fiber in predetermined ratio and treated with catalytic amount of benzoyl peroxide as a free radical initiator and N, N-dimethylaniline as an accelerator followed by vigorous stirring for predetermined time to form natural fiber reinforced polymer composite; (d) Preparation of natural fiber reinforced polymer composite sheets comprises of pouring the formed natural fiber reinforced polymer composite onto a mould spread out with silicon oil and obtaining natural fiber reinforced polymer composite sheets of predetermined size by compression molding technique. The present invention also discloses a natural fiber reinforced polymer composite sheets for use as sound proof and damping control materials prepared by the process described above.

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