A NOVEL HYBRIDIZATION TECHNIQUE IN JUTE/POLYESTER HYBRID COMPOSITE

A PROJECT REPORT

Submitted by

G.GURU ROBIN **(Reg No : 950512114025)**

M.JEEVA **(Reg No : 950512114030)**

In partial fulfillment for the award of degree

Of

BACHELOR OF ENGINEERING

IN

MECHANICAL ENGINEERING

DR.SIVANTHI ADITANAR COLLEGE OF ENGINEERING

TIRUCHENDUR-628 215

ANNA UNIVERSITY : CHENNAI – 600 025

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DEPARTMENT OF MECHANICAL ENGINEERING

BONAFIDE CERTIFICATE

This is to certify that this is the project report "**A NOVEL HYBRIDIZATION TECHNIQUE IN JUTE/POLYESTER HYBRID COMPOSITE**" is the bonafide work of "**G.GURU ROBIN , M.JEEVA**" who carried out the project under our supervision.

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PROJECT GUIDE

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Submitted to the project Viva – Voce examination of Anna University held at Dr.Sivanthi Aditanar College of Engineering , Tiruchendur on _____

INTERNAL EXAMINER

EXTERNAL EXAMINER

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We are very much thankful to our parents for their help of finance in our project. We thank our almighty god for his presence guidance with us for the successful completion of this project.

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We wish to express our deep sense of gratitude in thanking all faculty members,lab technicians , and friends for making this project successful.

PREFACE

The project work may be defined as the outcome of our theoretical, practical knowledge experiences and responsibilities from the past four years. After entering to our mechanical department we have studied third, fourth, fifth, sixth, seventh semester presently we are doing Eighth semester. The idea, which we got in these six semester practical classes, we exactly apply the all to do a project. However a single man lone cannot do a project because when we form a group differences students will give different idea, accordingly we can have some good idea. By applying that we can successfully complete our project.

We may have a lot more advantage when doing a project, now a day if a student go for an interview in any industry then the first question him from the interview committee is, what type of project work have you done in the main project? This will be defined on that time the student can explain the project work very well and he can also win an opportunity.

So the student should have got the knowledge simply saying the project work is "THE MUST" for every student. Hence we express our "**ANNA UNIVERSITY-CHENNAI"** for providing a paper on "**PROJECT"** on the eighth semester.

ABSTRACT

Experimental investigation of hybrid composites are performed to study the mechanical property using flexural testing and to study the damage. Initiation and development in stitched jute/polyester composites subjected to flexural loading. The natural composite jute is stitched with polyester thread on the areas where stress concentration is more. The sample is drilled at the center and the stitch diameter around the hole is varied, Viz. 6.5mm around the hole, 7.5 mm around the hole, 8.5 mm around the hole, 8.5 mm around the hole, 9.5 mm around the hole,10.5 mm around the hole, 11.5 mm around the hole, 12.5 mm around the hole. Flexural test is conducted to obtain the flexural strength of the combination. Effect of variation of stitch diameter is assessed and it is found that the 12.5mm diameter stitch increases the flexural strength when compared to the natural fiber composite flexural strength. These results are compared with the unstitched fully hybridized composite and unstitched natural fiber and it is found that the flexural strength of the stitched composite is increased. Also the flexural strength of laminate plies with various stacking sequences (combination of jute and polyester layers) is taken. While comparing the strength of specimen having maximum number of stitches around the hole with the strength obtained in specimens with varying stacking sequence, it is observed that its strength is approximately equal to specimen with one layer of polyester at each extreme end (S2).

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