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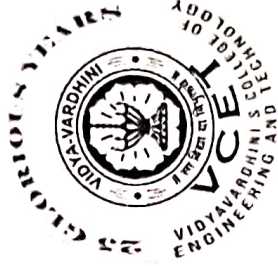
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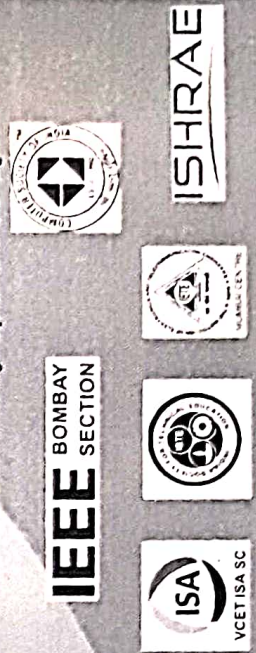
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4TH APRIL, 2020



Organized by:
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K.T. Marg, Vasai (W) - 401202
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BJIT - BVICAM's International Journal of Information
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VNC - 2020 TASU

About us:

Vidyavardhini means a Body committed to enhancement of Knowledge. Vidyavardhini was established as a registered society in 1970 by late Padmashri H. G. alias Bhausaheb Vartak for the noble cause of education in rural areas.

Vidyavardhini's College of Engineering and Technology, Vasai is located on the sprawling campus of Vidyavardhini, spread over an area of 12.27 acres. It is a short, two minutes walk from Vasai Road (W) Railway Station. The college is also accessible by road from Mumbai.

Vidyavardhini Society received approval from AICTE to start the new college of Engineering & Technology with effect from July, 1994. The college is affiliated to the University of Mumbai for the four year degree program, leading to the degree of Bachelor of Engineering in six branches.

Objective of VNC 2020 TASU

Technology has always been potential tool for simplifying the way we do things. Present time demands directing the technological advancements towards addressing societal challenges such as improving health care, education environment, sanitation, agriculture, smart city, etc., VNC 2020 TASU aims to provide an opportunity to researchers, academicians, Industrialist and students to interact and share their ideologies and contributions made for social upliftment with the aid of technological advancements.

Call for paper

We welcome submission in following area

1. Sustainable Computing
 2. High Performance Computing
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 4. Software Engineering and Emerging Technologies
 5. Mathematical, Experimental, Computational and AI, IoT Techniques in Mechanical Engg.
 6. Industrial Engg., ERP, MRP, SCM
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 8. Pollution control and Waste Management
 9. Advances in Structural engineering
 10. Present geotechnical practices
 11. Present practices in construction management
 12. Recent developments in Instrumentation, control and automation
 13. Embedded Systems, IoT and VLSI Design
 14. Optical and Wireless Communication for NGN
 15. Antenna and Microwave Devices
- Any other relevant topics

Publication Information

Proceedings of VNC - 2020 TASU will be published with ISBN number

1. Selected Papers will be published in International Journal of Information Technology, Published by Springer Nature, ISSN: 2511-2104 (Print Version), ISSN: 2511-2112 (Electronic Version)

2. All papers will be published in IJERT, ISSN: 2278-0181

***Best paper award
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Important Dates:

- Submission of full length paper
15TH Feb 2020
- Paper Acceptance Notification
22ND Feb 2020
- Submission of Final Version of Paper
29TH Feb 2020
- Registration Deadline
5TH March 2020
- PPT Submission
20TH March 2020
- Conference
4TH April 2020

Registration Fee Details:

Category of Delegates / Authors	Indian Authors & Delegates (in INR)
Full Time Students (UG)	1,500.00
Teachers/ Research Scholars/ PG students	2,500.00
Industry	3,500.00

Paper Submission:

Paper submission should be made strictly via Easy Chair the submission link for VNC 2020 "TASU":

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A Review on Structural Investigation and Experimental Behavior of Kevlar Fiber

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Abstract - We all are well familiar with the different types of fiber reinforced composites and its applications. As a Kevlar fiber has its own unique properties that have significant application in various fields. To increase the fiber utilization for tremendous emerging application needs the detail study of structural and behavioral pattern. This paper gives a detail review of structural and experimental behavior.

Keywords— Kevlar fiber, structural study, experimental view

I. INTRODUCTION

The compounds are used in a variety of applications where structural integrity and mechanical properties should be maintained in the face of adverse conditions such as pipes and tanks.[1]

Composites powered by carbon, glass and annular fibers are often used in aircraft structures, building structures, wind turbines and sports equipment. However, due to its breakage and generally an easy-to-break matrix, it is more susceptible to impact damage and is a glass fiber-reinforced composite (GFC) and Kevlar reinforced composite (KRC) has less impact resistance. The combination of two closely integrated fibers, such as Kevlar and CFRP, continuously improves capacity and impact resistance. Weight loss, impact resistance. Fatigue contributes to about 55% of aircraft structure failures. [2]

Fiber-reinforced polymer alloys have received great attention due to their high specific strength and toughness and are used as a kind of high performance material in the aerospace, marine and automotive industries. In order to improve the delineation hardness of composite laminates, attempts have been made to break down matrix resin from rubber particles, metal fibers and various powders.[3]

The results showed that Kevlar has good tensile strength and therefore it can be a good alternative to conventional materials for many applications in the mechanical engineering industry. Kevlar is a Paris Armide synthetic fiber that has good tensile modules, a high strength to weight ratio and a high energy absorption capacity. It also has good ballistic impact resistance, especially designed for defense applications. Kevlar composites were experimentally subjected to ballistic impact tests and improved sequences were shown on multi-structured multi-layer fabrics. Kevlar fiber as reinforcement and polycarbonate (PC) and acrylonitrile-butadiene-styrene (ABS) as a matrix [5].

Kevlar is the most used material for physical protection because it has more effect than synthetic fibers such as carbon, glass, etc. Shock waves caused by ballistic effect can cause severe wear and tear to the wearer. Different researchers have demonstrated

the ballistic performance of natural fibers based polymer compounds. (Crova, Malwa, Mallow, Kenaf, Bagsy, Rami and Bamboo). Research has focused on the effect of editing epoxy matrix with different weights. Ballistic performance of composites was enhanced by graphene nanoplates (GnPs) with Kevlar / cocas nucifera shells [7].

A matrix of fiber-linked composites (FRCs) glues the fibers together and, in turn, transmits the force to the fibers, which provide greater strength and flexibility. Due to its high strength, low viscosity and low volatility, epoxy is the most popular thermosetting polymer available and shrinking rates compared to other thermosetting polymers. [9]

Vacuum auxiliary resin transfer molding process is a preferable process for less insecure and flawless fiber pieces. Fiber volume and stacking order are important parameters that should be considered for obtaining better composite materials with superior mechanical properties. The proposed work focuses on the manufacture of covalent and E-Glass-reinforced epoxy matrix composites to maximize the hybrid structure of different volume ratios and impact and bending behavior through vacuum assisted resin transfer molding. The author's inclusion of Kevlar fibers in the phenolic resin reduced the friction ability. The reason is that glass fiber composites have weaker compression than other fiber-reinforced resins, but can also be attributed to the resin matrix.

II. MATERIAL AND MANUFACTURING PROCESS

Two four-layer laminates were fabricated using hybrid fabric with e-glass and Kevlar 49 fibers and orthophilic unsaturated thermosetting polyester resin, which is Novapole-120 (Fig. 1 (a)). The two pieces use different methods of hybridization of more reinforced fabrics, as shown in Figure 1 (b) and (c). The hybrid fabric in Fig. 1 (b) is a hybrid-stranded two-dimensional textile, that is, each of the standalone E-fibers comprising of fibers and Kevlar 49 fibers, in both directions (weft and warp), obtained from the Tax Lugs Company. And is commercially known as the KV-650.

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