Vol. 5 Issue 02- Apr to Jun, 2022

Dr.M.G.R.
Educational and Research Institute
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Maduravoyal , Chennai - 600 095

FACULTY OF ENGINEERING AND TECHNOLOGY
DEPARTMENT OF MECHANICAL ENGINEERING

MEXPRESS

VOL. 5 ISSUE 2- 2022

HOD-DESK

MESSAGE

By,
Dr.K.RAJAN.,
HOD / MECHANICAL ENGG DEPT.

Greetings!!

I am glad that Dr.MGR University has provided us an opportunity and vision to support the release of Newsletter series through all the quarters of each academic year. It's a forum to connect with all stakeholder. I am very happy that the department is releasing the News letter for the period April 2022-to June 2022. Wishing for many more series and happy reading.

MESSAGE

By,
Dr.A.MANOJ BABU.,
DEPUTY HOD/MECHANICAL ENGG DEPT.

The Newsletter is a mirror that reflects the activities of the department. Students from all walks of life find their voices heard in this space that welcomes and encourages diversity of thoughts and perspectives with open arm. Pleased to see that our department is releasing its second quarter Newsletter for 2022. I wish the purpose is realized and achieved.

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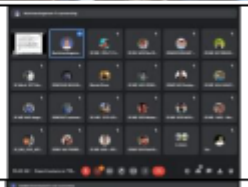
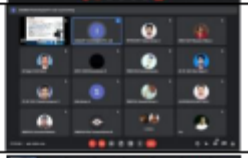
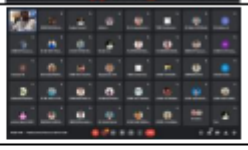
MESSAGE

It gives us immense pleasure to be an integral part of this news letter, a communication method suited to the needs of the time which would carry messages to all concerned about important events, happenings and achievements. This certainly should play an effective role in creating a sense of belongingness amongst faculty team, alumni and students. Life can't have rewinds rather only flashbacks. Talented alumni will likely have a wealth of experience and skills to share with current students via talks and newsletters. We consider that our endeavors will be successful only when ,after reading these articles you get motivated to contribute more in future issues.

EDITORIAL BOARD

ACTION CORNER

SNIPPETS FROM PALS

APRIL TO JUNE			
DATE	**EVENT TITLE**	**SPEAKERS**	**EVENT COORDINATE**
21-Apr-2022 to 27-Apr-2022	Certificate Training Program on Lean Six Sigma Yellow Belt Training Program	Dr. GOPAL SIVAKUMAR CEO, Vision Excellence	
22-Apr-2022	Motivational Talk on Entrepreneurs for students	Mr. S. SATHISH KUMAR Motivational Speaker, Management Consultant	
23-Apr-2022	Alumni Interaction PENTA Reunion 2017 batch	Mr. HIMANSHU SINGH, Resource Manager, HR GLOBAL SERVICE INDIA LTD.	
27-Apr-2022	National Conference on TIME - 2022 (Version - 5.O))	Dr. L.S. JAYAKUMARI, Associate Professor, MIT, Anna University	
28-Apr-2022	Subject Lecture on Composite Materials	Dr. J.JAYASEELAN, Associate Professor Department of Mechanical Engineering Dr.M.G.R Educational and Research Institute	
09-May-2022	Subject Lecture on Renewal Sources of Energy	P.RAVICHANDRA GANESH, Associate Professor Department of Mechanical Engineering Dr.M.G.R Educational and Research Institute	
17-May-2022	Technical Talk on Modeling & Simulation & Hardware solutions for Robotic	Mr. SIDDHESH TILEKAR, Application Engineer, India Soft Technologies (P) Ltd.,	
23-May-2022	Subject Lecture on Maintenance and Trouble Shooting of Hydraulic Systems	Dr. M.CHANDRAN, Associate Professor Department of Mechanical Engineering Dr.M.G.R Educational and Research Institute	

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ARTICLES CORNER

JOB OPPORTUNITIES AFTER STUDYING IN ABROAD

BY,
. MR. ANDREW NALLAYAN,
ASST. PROFESSOR/ MECH ENGG.

The global outlook you have as an international student is often appealing to employers, and along with your degree you'll have a lot to offer. While you studied abroad you may have even worked part-time depending on your visa restrictions and gained some experience in the area you want to pursue.

As your graduation gets nearer you'll need to consider what your job opportunities are after studying in abroad; whether you want to continue your studies, stay and work, or find a job back in your home country.

International student career support

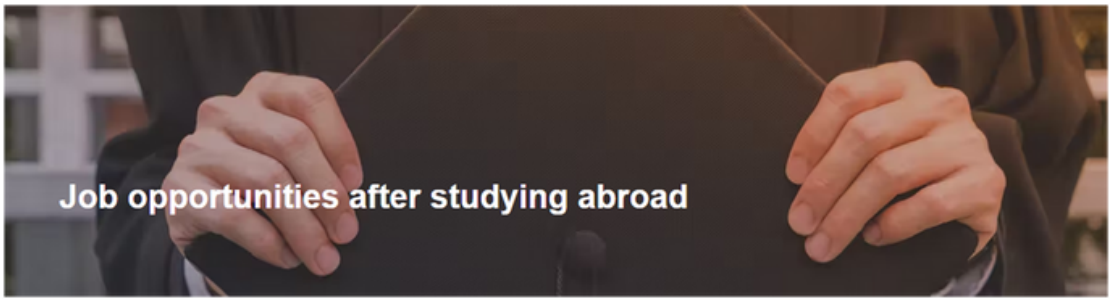
Universities often have dedicated services to help their students with careers, including those from overseas. Throughout the year workshops are held to provide students with new skills, or to help with CVs, interviews, and specific career advice. It's important to make use of any services like this, especially as universities are well connected across the fields they teach and can often put you in touch with contacts.

If you have a specific career in mind, it's important to understand the pathways that can get you there. Consider if you need to arrange for work experience, or an internship, or specific areas of study within your program. It could also be of benefit if you have been part of a relevant group or society linked to your career aspirations.

Returning to your home country

You may be returning to your home country with a job offer, or will be looking for work. A benefit of returning home to find work is that it's a system you're familiar with, and you'll understand your rights as an employee. It also means you won't need to arrange for a new visa.

Your time studying abroad is likely to enhance your career by impressing employers, highlighting your English language skills, independence, and outgoing attitude.



Working in your study country

If you want job opportunities in your study abroad country, then it's important to start planning for it in advance. The visa restrictions for your student visa are unlikely to allow you to stay in the country to work full time when your course finishes, so you'll have to arrange for a new type of visa.

It is possible that you will be denied a visa to stay in your study country for work. This can be due to certain country's restrictions on work visas depending on skills and finances needed.

When you're looking for work in your study country it's important to research your employment rights as an international worker. Your university's career services will be able to help you with this information, so make sure you make use of their support before you graduate.

Continuing your studies

You may decide that upon completion of your degree you want to learn more about your field of study and gain an additional qualification. If you're looking for a career in academia then this is a logical step to take. Your university can help arrange for your enrollment on a new course, otherwise you'll need to start applying for other universities.

If you're remaining in the same country this may require you to extend your current student visa status which your university can help with. If you're changing country then you'll need to ensure you apply at the right time for your new student visa before student intake and ensure you have plenty of time at your disposal.

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GREEN ENGINEERING

By,
S. DEEPANSHU ROY
2ND YEAR /MECH DEPT

Green Engineering

The idea of green engineering is to create a healthy living environment through the utilization of natural resources wisely and conservatively. It aims to lessen the amount of pollution that is being generated in a construction site.All engineers must be knowledgeable about what green engineering is all about. It is the newest way to become efficient and economic while still promoting sustainability. Through the use of green technology, it further reduces or eliminates the negative environmental impact of its processes. Aside from the positive effects of green engineering on the environment, it also has a positive impact on human health.• The First Airplanes, 1799 to 1853

Green engineering follows nine guiding principles:

1.Engineer processes and products holistically, use systems and integrate environmental impact assessment tools.
2. Conserve and improve natural ecosystems while protecting human health and well-being.
3. Use life-cycle thinking in all engineering activities.
4. Ensure that all material and energy inputs and outputs are as inherently safe and benign as possible.
5. Minimize the depletion of natural resources.
6. Prevent waste.
7. Develop and apply engineering solutions while being cognizant of local geography, aspirations, and cultures.
8. Create engineering solutions beyond current or dominant technologies; improve, innovate, and invent (technologies) to achieve sustainability.
9. Actively engage communities and stakeholders in development of engineering solution

TSpeaking of the benefits of green engineering, one may note its key characters such as a holistic approach to the environment. There is also a great business opportunity for profit based on green products: beginning with using less oil and ending with a high demand for monitoring and cleaning products. One of the specific engineering solutions is environmental monitoring in the Costa Rican Rain Forest. The use of wireless technology developed by engineers allows measuring the environmental indicators without any harm . Another vivid example is Enginuity that improved the efficiency of large internal combustion (IC) engines. Their innovation allows reducing the level of emissions such as nitric oxide and nitrogen dioxide. Other large industrial companies are also using green engineering in their products to be able to utilize them after minor repairs or recycling (IBM, General Electric, Procter & Gamble, etc.).

Examples of green engineering

•Wastewater treatment. .

•Elimination of industrial emissions. .

•Recycling and waste management. .

•Self-sufficient buildings.

•Waste-to-Energy.

•Generation of energy from the waves.

•Vehicles that do not emit gases.

•Harnessing solar energy

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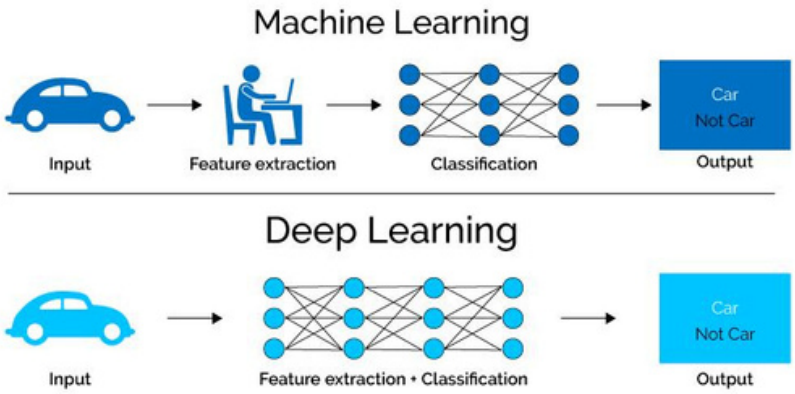
DEEP LEARNING

BY,
SUMIT R.,
3RD YEAR /MECH DEPT.

Deep Learning is a subset of Machine Learning, which on the other hand is a subset of Artificial Intelligence. Artificial Intelligence is a general term that refers to techniques that enable computers to mimic human behavior. Machine Learning represents a set of algorithms trained on data that make all of this possible.

Deep Learning, on the other hand, is just a type of Machine Learning, inspired by the structure of a human brain. Deep learning algorithms attempt to draw similar conclusions as humans would by continually analyzing data with a given logical structure. To achieve this, deep learning uses a multi-layered structure of algorithms called neural networks. Long before deep learning was used, traditional machine learning methods were mainly used. Such as Decision Trees, SVM, Naïve Bayes Classifier and Logistic Regression.
These algorithms are also called flat algorithms. Flat here means that these algorithms can not normally be applied directly to the raw data (such as .csv, images, text, etc.). We need a preprocessing step called Feature Extraction.



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PAPER CRAFT- DINING TABLE

BY,
MADHU SUDARSANAN.,
2ND YEAR /ROBO DEPT.

Miniature Dining table set from rolled newspaper sticks - Madhu Sudarsanan In my home, we have a nice old teak wood dining table set that is atleast 10 years older than me. The design is different from a conventional rectangular 4 seater set that it amuses me often. The table has a large circular top with a narrow pedestal. The chairs are woven with wires giving good seating comfort. Now you know what made me to make this rolled paper dining set. The newspapers are rolled as I described earlier. The measurements for the chairs are decided and cut. The cut pieces are glued together taking care that the rolled units are aligned well. The circular top is cut from a square or glued rolled papers. Fixing the pedestal is the most difficult task since it also has to be made from the rolled paper stick and should bear the weight of the top. If the pedestal is not fixed exactly at the centre point, there is every chance it will topple! Have a look and let me know what you feel about this miniature craft work!

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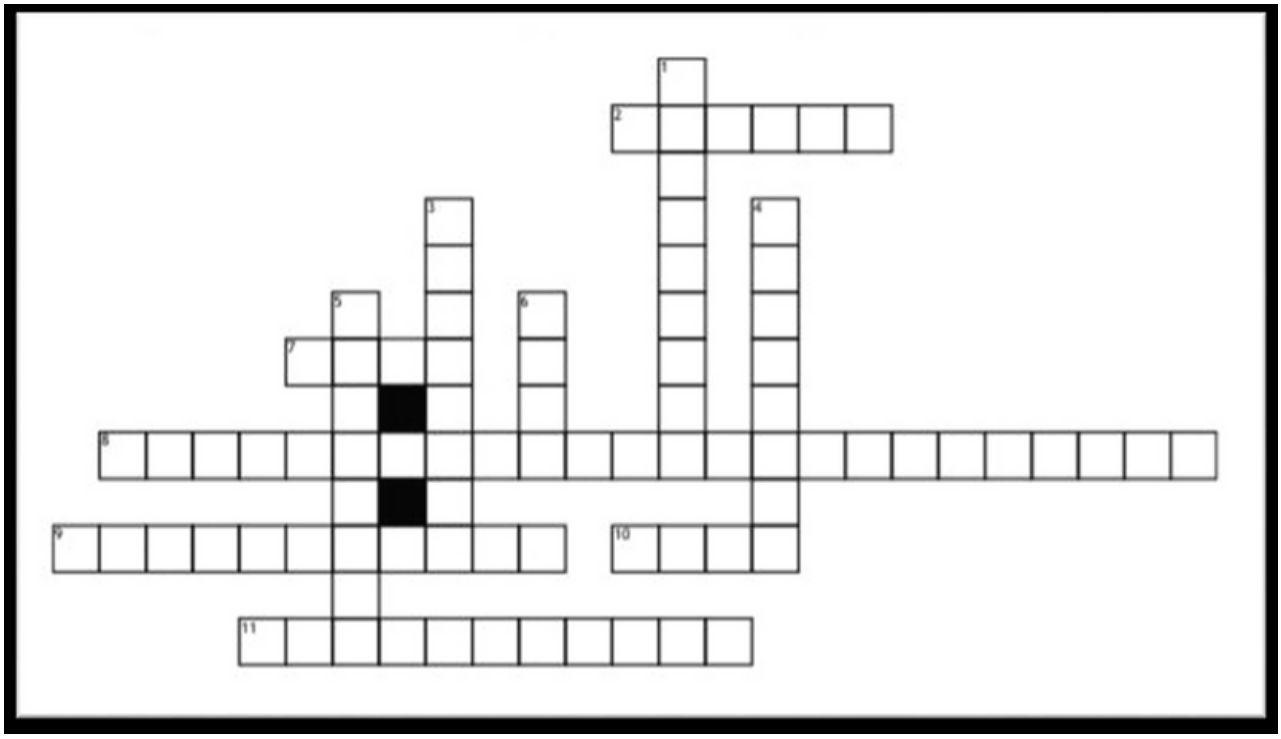
CROSS WORD- DESIGN PROCESS

By,
S. DEEPANSHU ROY
2ND YEAR /MECH DEPT.



Across

2. In which part of the Engineering Design Process would you follow your plan to make something?

7. In which part of the Engineering Design Process would you test out your solution?

8. A series of steps that engineers follow to come up with a solution to a problem

9. Discuss the results from the testing and the evaluation

10. after you brainstorm-research, the next step is..

11. What things to do you should do to make your stem project to have the most success.

Down

1. A working version of a created solution so the engineer can test whether it is a good solution.

3. What things to do you should do to make your stem project to have the most success.

4. What is the first step of the Engineering Design Process?

5. What is the last step of the Engineering Design Process?

6. In which step of the Engineering Design Process would you make a diagram/drawing/sketch?

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SUCCESS STORY OF AMAZON'S FOUNDER

BY,
RAVI RAJAN N.,
3 RD YEAR /ROBOTICS & AUTOMATION DEPT.

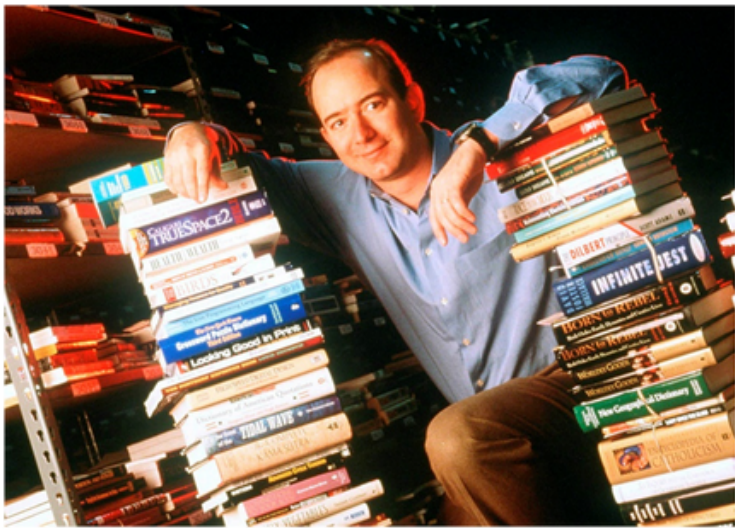
Introduction:

According to Forbes, Jeff Bezos has an estimated net worth of $136.1 billion at the time of writing, making him one of the richest people on the planet. Most of Bezos' wealth stems from his shares in Amazon, which he founded in 1994 from his garage in near Seattle, Washington. Behind the success of Amazon and, in turn, its founder, is innovation, creativity, and hard work. Let's take a deep dive into how the e-commerce giant and its founder made it to the top

Early Life: Bezos Before Amazon

1Jeff Bezos was born in Mexico to teenage parents Jacklyn and Ted Jorgensen. Not long after his birth, Bezos' parents separated and his mother married Miguel Bezos. As he grew up, Bezos developed a sharp interest in computer science, though spent much of his early years working on his maternal grandparents' ranch in Texas.In the mid-80s, Bezos graduated summa cum laude from Princeton University, with degrees in computer science and electrical engineering, and went on to join startupFitel after declining job offers from both Intel and Bell Labs. By the age of 30, Bezos was on a six-figure salary, but his realisation that the world of web was then growing at 2300% pushed him to start his own company — Amazon.

"We are stubborn on vision. We are flexible on details" - Jeff Bezos



How Bezos Founded Amazon

Once Bezos had realised the expansive possibilities of the web, he created a list of 20 potential products he believed could sell well online. He realised that even the largest bookstores could stock just a few hundred thousand books at one time — only a fraction of the almost infinite number of titles truly available. Books were Bezos' winner.

In 1994, Bezos took his idea to Seattle, home to a huge pool of high-tech talent and within close proximity to Ingram Book Group's Oregon warehouse. With $1 million raised from friends and family, Bezos rented a house in the city and established his new online book business from his garage.

For almost a year, Bezos and a team of five employees worked from the Seattle garage, learning how to source books and creating a computer system that would make Amazon.com easy to navigate. It called itself "Earth's Biggest Bookstore" with over 1 million titles for customers to choose from. By September 1996, Amazon.com had over 100 employees and had made over $15.7 million in sales.

Following Amazon.com's launch, Barnes & Nobles was quick to launch its own online presence and a marketing campaign claiming it offered twice as many books as Amazon. However, Bezos had already expanded Amazon's product line and changed the e-commerce's tagline to "Books, Music and More".

Thanks to its relentless expansion strategy, in 2019, Amazon was believed to control 37% of all online retail sales. And, as of July 2022, Amazon has a market cap of $1.105 trillion, making it the world's 5th most valuable company by market cap according to companiesmarketcap.com.

Why Is Amazon So Successful?

There are many reasons why Amazon is one of the most successful businesses in the world, though the primary reason is generally considered to be its devotion to customer experience. Amazon makes shopping quick and easy. Its every move comes back to its customer-centric philosophy. Its goal is to be the most customer-centric company in the world.

"Our vision is to be the world's most consumer-centric company, where customers can come to find anything they want to buy online" - Jeff Bezos

Other reasons for Amazon's success include its:

- Huge product range
- Quick and easy delivery
- Release of innovative technology, such as the Kindle, Amazon Alexa, and Amazon Fire TV
- Its 14 leadership principles

While Jeff Bezos stepped down as Amazon's CEO in 2021, his name will always go hand-in-hand with the e-commerce giant's status as one of the globe's top companies.

According to Bezos, one of the key lessons he learnt while building Amazon was "that success can come through iteration: invent, launch, reinvent, relaunch, start over, rinse, repeat, again and again," he said, adding that "the path to success is anything but straight."

ALUMNI CORNER

FOCUS

By,
Rajeshwar M Chandru
Batch: 2015-2019

Four years, 8 Semesters, more than 30 exams to get the Degree as an Engineer. In June 2015 I started my Engineering Studies Dr. MGR E&RI University, During this course of period I made sure that I set my goals and principles to the point - what i have to achieve with myself, what are the important decisions i had to make and what are all the small stepping stones i have to work with to achieve my goals. After graduating from my 12 th Grade, the world which I was living in grew vast. It was the first year where we would be meeting new people for the first time with whom we will be traveling along for quite a time after school life. I was nervous in the beginning but the goals were set so I had to work it out.

The life of a 1st year Engineering Graduate went like a bliss for me, the warmth and the guidance gave by professors like Mrs.Andal and Mrs.Dhanalakshmi. Then the initial stages of a Professional Life Started - Entering the Main Campus in 2nd year made my vision clear of what i had to do, through the proper direction from my fellow Seniors and Mr. Andrew Nallayan sir, who was my mentor at that time, guided me to what I had to do in order to survive in the outside world. I had an immersive interest in developing my own automobile designs and started to work on the skill sets that are required for it. The 3rd and 4th year came by and I took off with a different spin by involving myself with the sport Football.

With Dr Senthilvelan association we reached out for our first International conference and While I was involved with both my academic and sports I also had the time to engage myself with Research at IITM ,member of the PALS group and also became the MAA Mechanical Department Ambassador for my batch.

Today, I am a Design Engineer For A Korean Based Company designing the Headlights of the car which are currently in the global market. I am so thankful to the Mechanical Engineering Department headed by Dr. M. Ganesan at my time, Dr. Senthil Velan- Dean , Mr.Raja sir, and all the fellow professors who made me what I am today.The Values and Knowledge which was governed by Dr MGR E&RI University, President Er.Arun Kumar was such a great deed and appreciation during my 2015-2019 of my career. Through sheer Focus and Guidance the world is in our hands.

Sincerely,
Rajeshwar M Chandru
Class of 2015-2019

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ACHIEVERS CORNER

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PUBLICATIONS

STAFF PUBLICATIONS
APR-JUN 2022

1. MECHANICAL, THERMAL, AND FATIGUE BEHAVIOR OF ALOE VERAFBER/PISTACHIO SHELL POWDER TOUGHENED EPOXY RESIN COMPOSITE,
BIOMASS CONVERSION AND BIOREFINERY, VOL. , NO. 1, PP.8-0.957
S SENDILVELAN., MECHANICAL ENGINEERING, FACULTY OF ENGINEERING AND TECHNOLOGY


Home > Biomass Conversion and Biorefinery > Article

Original Article | Published: 14 May 2022

Mechanical, thermal, and fatigue behavior of aloe vera fiber/pistachio shell powder toughened epoxy resin composite

Suganya G, Senthil kumar S, Jayabalakrishnan D, Somasundaram S, Bhaskar K & Sendilvelan S

Biomass Conversion and Biorefinery (2022) | Cite this article

2.LONG TERM ACCELERATED INFLUENCE ON THERMO-MECHANICAL PROPERTIES OF GLASS/CARBON FIBER REINFORCED INTERPENETRATING POLYMER NETWORK HYBRID COMPOSITES,
JOURNAL OF REINFORCED PLASTICS AND COMPOSITES, Vol. , no. , pp.-1.342
VIJAYAKUMAR K R., Mechanical Engineering, FACULTY OF ENGINEERING AND TECHNOLOGY
KarjalaSanthoshPriya., Mechanical Engineering, FACULTY OF ENGINEERING AND TECHNOLOGY


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Journal of Reinforced Plastics and Composites

Impact Factor: 3.383 / 5-Year Impact Factor: 3.355 | JOURNAL HOMEPAGE | SUBMIT PAPER

Restricted access | Research article | First published online May 5, 2022

Long term accelerated influence on thermo-mechanical properties of glass/carbon fiber reinforced interpenetrating polymer network hybrid composites

Karjala Santhosh Priya, K R Vijaya Kumar, [...], and C M Meenakshi | View all authors and affiliations

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