



NANDHA COLLEGE OF TECHNOLOGY

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Academic Year

2020-21




PRINCIPAL
NANDHA COLLEGE OF TECHNOLOGY
ERODE-52.



Nandha College of Technology, Erode-52

Research and Development Cell

Academic Year 2020-21

Financial Support for Faculty Members

Year	Name of teachers	Name of conference/ workshop attended for which financial support provided	Name of the professional body for which membership fee is provided	Amount of support received (in INR)
2020-21	R.Girimurugan	Scopus-Journal of Impact and hardness behaviour of epoxy resin matrix composites reinforced with banana fiber /camellia sinensis particles	Scopus	3000
2020-21	Pon.Maheskumar	Scopus-Journal of Impact and hardness behaviour of epoxy resin matrix composites reinforced with banana fiber /camellia sinensis particles	Scopus	2000
2020-21	R.Girimurugan	Scopus-Journal of Experimental Setup on water absorption behaviour of treated and untreated hybrid bio-composites	Scopus	3000
2020-21	P.Manickavasagam	Scopus-Journal of Experimental Setup on water absorption behaviour of treated and untreated hybrid bio-composites	Scopus	2000




R&D Coordinator


Principal


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From

Dr.G.B.Mohankumar,
Head of the Department,
Dept. of Electrical and Electronics Engineering,
Nandha College of Technology,
Erode-52.

To

The Secretary,
Nandha College of Technology,
Erode-52.

Through,

The Principal,
Nandha College of Technology,
Erode-52.

Respected Sir,

SUBJECT: Seeking Financial Assistance for Scopus/WOS/UGC Care/SCI
AU Annexure Indexed Journal Publishing-Regarding.

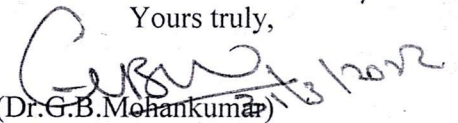
In connection with Journal Publications (Indexed in Scopus/WOS/UGC Care/SCI/Anna University Annexure List), We are in need of financial support from our institution. Hence I request you to give the publication charges to the faculty members.

Number of Journal Papers published in 2020-2021: 02 nos.

Publication fees for 2 papers × Rs. 5000/-: Rs.10,000/- ✓

Thank You

Yours truly,


(Dr.G.B.Mohankumar)

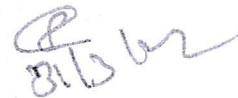
Date: 31.03.2022

Place: Erode

Enclosed:

1. Faculty Journal Publication List.








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NANDHA COLLEGE OF TECHNOLOGY, ERODE-638012
RESEARCH AND DEVELOPMENT CELL
DETAILS OF PUBLICATIONS

Sl. No.	Academic Year	Name of the Department	Name of the Faculty Members & Designation	Authors Position	Title of the publication	Name of the Journal	Month, Year, Volume and Issue Number	Scopus Indexed/ Web of Science/ SCI-Indexed Journal/ UGC Care List/ Anna University	50% of Publication Fees
1	2020 to 2021	Mechanical	I.R. Girmurugan, Associate Professor P. Pen Mahes Kumar, Assistant Professor	First and Second Author	Impact and hardness behaviour of epoxy resin matrix composites reinforced with banan fiber/camclilla sinasis particles	Elsevier-Materials Today: Proceedings	39(2021)	Scopus Indexed & Web of Science	5000
2		Mechanical	I.R. Girmurugan, Associate Professor P. Manickavasagam, Professor	First and Third Author	Experimental Studies on Water Absorption Behaviour of Treated and Untreated Hybrid Bio-Composites	IOP Conference Series: Materials Science	February 1059 (2021)	Scopus Indexed	5000

10000

(Signature)
R&D COORDINATOR
(Dr. G. B. MOHANKUMAR, HOD/EEE)

Dr. G. B. MOHANKUMAR,
B.E., M.Tech., PGDESM, Ph.D., FIE., C.Eng (I),
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Dr. S. NANDAGOPAL, M.E., Ph.D.,
PRINCIPAL
NANDHA COLLEGE OF TECHNOLOGY
ERODE - 638052.



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Impact and hardness behaviour of epoxy resin matrix composites reinforced with banana fiber/camellia sinensis particles

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ABSTRACT

In this article, the impact and hardness properties of the epoxy resin matrix, banana fiber-reinforced, and Camellia Sinensis particles, filled bio-composites were established. Four composite specimens for Izod impact test and Rockwell hardness test were prepared as per the ASTM standards by keeping weight percentage of the matrix material as constant (65%) and varying the weight percentage of banana fiber (35, 33, 31, 29%)/Camellia Sinensis particles (0, 2, 4, 6%) respectively. Izod impact test and Rockwell hardness tests are performed on the four composites specimens as per ASTM standards. Experimental results reveal that by adding Camellia Sinensis particles with epoxy resin matrix/banana fiber composites enhances the hardness and diminishes the impact of energy and impact strength of the composites considerably.

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1. Introduction

Due to biodegradable, completely or partly recyclable, and renewable, natural fiber-reinforced polymer composite materials are quickly increasing both in accordance with the conditions of their fundamental research and industrial applications. Investigators have come about with new product developments for composites utilizing natural fibers to decrease the damage of the environment and to create cost-efficient polymer reinforced composites, that are partly recyclable [1–4]. Initially, natural fibers were utilized 3000 centuries back in composite methods in ancient Egypt, in which clay and straw have been integrated together to create walls. During the past decade, natural fibers reinforced with polymer composite materials have been receiving ever-growing attention, both from different industries and from the university. The interest in polymer composite material reinforced natural fiber is increasing every day [5–8]. Their plentiful ease of use, low price and intensity, and reasonable mechanical characteristics are

making them a very attractive environmentally friendly option for the production of composite materials.

The natural fiber in accordance with the composite materials is more ecologically friendly and has a wide range of applications in the area of transport (aerospace, railway coaches, automobiles) construction and building industries (partition boards, ceiling paneling), consumer products, packaging, and so on [9–12]. There is a broad range of various natural fibers that can be applied as fillers or reinforcement. Because of ease to use and characteristics, the most essential kinds of natural fibers utilized in composite materials are sisal, kenaf, jute, hemp, and flax. Additionally, ecological appropriateness can be accomplished by utilizing post-consumer reused plastic instead of virgin polymer matrices [13–15]. Polymer utilized as a matrix material for those composite materials is usually categorized into two categories, thermosetting and thermoplastic. Thermoplastic materials presently stand out, as matrices for bio fibers: the most widely utilized thermoplastic for this objective are polyvinyl chloride (PVC), polyethylene, polypropylene; at the same time as polyester resins, epoxide and phenolic are the most frequently utilized thermosetting matrices [16–18]. The main obstacle discovered with natural fibers is the inconsistency among the hydrophilic thermoplastic matrices and the hydrophilic natural

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Experimental Studies on Water Absorption Behaviour of Treated and Untreated Hybrid Bio-Composites

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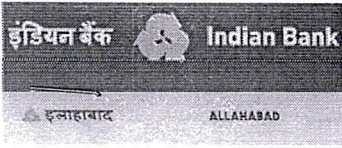
Abstract

Various experimental works were successfully accomplished over the past years on the natural resources reinforced composites. This research work is focused on the water absorption behaviour of the treated and untreated banana fiber reinforced, used camellia sinensis particles filled along with the epoxy resin matrix bio-composites. Different weight percentages of reinforcement and filler materials were taken to prepare the hybrid composite specimens, whereas the epoxy resin matrix were keeping constant. Traditional hand layup technique was adopted and the boards of the hybrid composites were effectively fabricated by using the same technique. Hybrid bio-composite specimens for water absorption tests were prepared by using the portable wood cutting machine as per the ASTM standards for the efficient justification on experimental results. Water absorption tests on the hybrid bio-composite specimens were carried out as per the ASTM standards. Water absorption behaviour of the treated and untreated banana fiber reinforced, used camellia sinensis particles filled, epoxy resin matrix hybrid composite specimens were absorbed and compared with each other. Experimental results shows that the chemically treated banana fiber reinforced with narrow amount of used camellia sinensis particle filled hybrid composite specimens exhibits the better water absorption behaviour than that of untreated banana fiber reinforced with elevated amount of used camellia sinensis particle filled hybrid composite specimens.




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11/04/2023	11/04/2023	THOTTANI	CHQ TRANSFER NEFT/SBIN/IDIBH23 101277190 /MEMBER SECRETRE/SRI NAND	00534814	16996.00		778694.00C R
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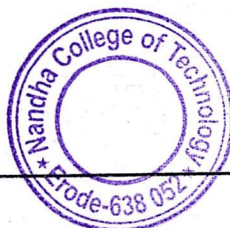
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