Office of the Controller General of Patents, Designs & Trade Marks
Department for Promotion of Industry and Internal Trade
Ministry of Commerce & Industry,
Government of India

सत्यमेव जयते

INTELLECTUAL PROPERTY INDIA
PATENTS | DESIGNS | TRADE MARKS
GEOGRAPHICAL INDICATIONS

Application Details	
APPLICATION NUMBER	202141000670
APPLICATION TYPE	ORDINARY APPLICATION
DATE OF FILING	07/01/2021
APPLICANT NAME	**1 . Mr. S. GOKULKUMAR** **2 . Dr. P.R. THYLA**
TITLE OF INVENTION	CAMELLIA SINENSIS/ANANAS COMOSUS FIBER BASED CORRUGATED PANEL FOR SOUND DAMPING
FIELD OF INVENTION	BIO-CHEMISTRY
E-MAIL (As Per Record)	
ADDITIONAL-EMAIL (As Per Record)	gokulkumarmeprof@gmail.com
E-MAIL (UPDATED Online)	
PRIORITY DATE	
REQUEST FOR EXAMINATION DATE	07/01/2021
PUBLICATION DATE (U/S 11A)	15/01/2021

Application Status	
APPLICATION STATUS	**Abandoned U/s 21(1)**

View Documents

Filed → RQ Filed → Published → Under Examination → Disposed

E7 5047031 3IN

D/1489

FORM 1 THE PATENTS ACT 1970 (39 of 1970) and THE PATENTS RULES, 2003**APPLICATION FOR GRANT OF PATENT** (See section 7, 54 and 135 and sub-rule (1) of rule 20)		(FOR OFFICE USE ONLY) 700295924
	Application No.	202141000670
	Filing date:	07/01/2021
	Amount of Fee paid:	1750/-
	CBR No:	611
	Signature:	
1. APPLICANT'S REFERENCE / IDENTIFICATION NO. (AS ALLOTTED BY OFFICE)		

2. TYPE OF APPLICATION [Please tick (✓) at the appropriate category]

Ordinary (✓)		Convention ( )		PCT-NP ( )	
Divisional ( )	Patent of Addition ( )	Divisional ( )	Patent of Addition ( )	Divisional ( )	Patent of Addition ( )

3A. APPLICANT(S)

Name in Full	Nationality	Country of Residence	Address of the Applicant	
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			Country	India
			Pin code	641407
			Mobile	9791756828
			E-mail id	gokulkumarmeprof@gmail.com
Dr. P.R. Thyla	Indian	India	Address	Professor and Head, Department of Mechanical Engineering, PSG College of Technology, Coimbatore
			State	Tamil Nadu
			Country	India
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			Mobile	9443134432
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3B. CATEGORY OF APPLICANT [Please tick (✓) at the appropriate category]

Natural Person (✓)	Other than Natural Person		
	Small Entity ( )	Startup ()	Others ( )

4. INVENTOR(S) [Please tick (✓) at the appropriate category]

Are all the inventor(s) same as the applicant(s) named above?	Yes ()	No (✓)

If "No", furnish the details of the inventor(s)

Name in Full	Nationality	Country of Residence	Address of the Inventor	
1.Mr.S. Gokulkumar	Indian	India	Address	Assistant Professor in Department of Mechanical Engineering, KPR Institute of Engineering and Technology, Arasur, Coimbatore
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2. Dr. P.R. Thyla	Indian	India	Address	Professor and Head, Department of Mechanical Engineering, PSG College of Technology, Coimbatore
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			E-mail id	thylapr@gmail.com
3. Dr.S.Sathish 4. Mr.L.Prabhu 5. Mr.N.Karthi 6. Dr. Balaji. D 7. Mr.Vidurvarshan .M 8. Mr. Suryaprakaash .A 9. Mr. Reavanth .S	Indian	India	Address	Department of Mechanical Engineering, KPR Institute of Engineering and Technology, Arasur, Coimbatore
			State	Tamil Nadu
			Country	India
			Pin code	641407
			Mobile	7338714790
			E-mail id	balaji.ntu@gmail.com

5. TITLE OF THE INVENTION		
Camellia sinensis / Ananas comosus fiber based corrugated panel for sound damping		
6. AUTHORISED REGISTERED PATENT AGENT(S)	IN/PA No.	
	Name	
	Mobile No.	
7. ADDRESS FOR SERVICE OF APPLICANT IN INDIA	Name	Mr. S. Gokulkumar
	Postal Address	Assistant Professor in department of Mechanical Engineering, KPR Institute of Engineering and Technology, Arasur, Coimbatore
	State	Tamil Nadu, India
	Mobile	9791756828
	E-mail id	gokulkumarmeprof@gmail.com

8. IN CASE OF APPLICATION CLAIMING PRIORITY OF APPLICATION FILED IN CONVENTION COUNTRY, PARTICULARS OF CONVENTION APPLICATION

Country	Application Number	Filing date	Name of the applicant	Title of the invention	IPC (as classified in the convention country)

9. IN CASE OF PCT NATIONAL PHASE APPLICATION, PARTICULARS OF INTERNATIONAL APPLICATION FILED UNDER PATENT CO-OPERATION TREATY (PCT)

International application number	International filing date

10. IN CASE OF DIVISIONAL APPLICATION FILED UNDER SECTION 16, PARTICULARS OF ORIGINAL (FIRST) APPLICATION

Original (first) application No.	Date of filing of original (first) application

11. IN CASE OF PATENT OF ADDITION FILED UNDER SECTION 54, PARTICULARS OF MAIN APPLICATION OR PATENT

Main application/patent No.	Date of filing of main application

12. DECLARATIONS

(i) Declaration by the inventor(s)

(**In case the applicant is an assignee**: the inventor(s) may sign herein below or the applicant may upload the assignment or enclose the assignment with this application for patent or

send the assignment by post/electronic transmission duly authenticated within the prescribed period).

I/We, the above named inventor(s) is/are the true & first inventor(s) for this Invention and declare that the applicant(s) herein is/are my/our assignee or legal representative.

(a) Date
(b) Signature
(c) Name: 1.Mr.S.Gokulkumar

(a) Date
(b) Signature
(c) Name: 2. Dr. P.R. Thyla

(a) Date
(b) Signature
(c) Name: 3. Dr.S.Sathish

(a) Date
(b) Signature
(c) Name: 4. Mr.L.Prabhu

(a) Date
(b) Signature
(c) Name: 5. Mr.N.Karthi

(a) Date
(b) Signature
(c) Name 6. Dr. Balaji. D

(a) Date
(b) Signature
(c) Name: 7. Mr.Vidurvarshan .M

(a) Date
(b) Signature
(c) Name: 8. Mr. Suryaprakaash .A

(a) Date
(b) Signature
(c) Name 9. Mr. Reavanth .S

(ii) Declaration by the applicant(s) in the convention country

(In case the applicant in India is different than the applicant in the convention country: the applicant in the convention country may sign herein below or applicant in India may upload the assignment from the applicant in the convention country or enclose the said assignment with this application for patent or send the assignment by post/electronic transmission duly authenticated within the prescribed period)

I/We, the applicant(s) in the convention country declare that the applicant(s) herein is/are my/our assignee or legal representative.

(a) Date

(b) Signature(s)

(c) Name(s) of the signatory

(iii) Declaration by the applicant(s)

I/We the applicant(s) hereby declare(s) that: -

- € ✓I am/ We are in possession of the above-mentioned invention.
- € ✓The ~~provisional~~/complete specification relating to the invention is filed with this application.
- € ✓The invention as disclosed in the specification uses the biological material from India and the necessary permission from the competent authority shall be submitted by me/us before the grant of patent to me/us.
- € ✓There is no lawful ground of objection(s) to the grant of the Patent to me/us.
- € ✓I am/we are the true & first inventor(s).
- € I am/we are the assignee or legal representative of true & first inventor(s).
- € The application or each of the applications, particulars of which are given in Paragraph-8, was the first application in convention country/countries in respect of my/our invention(s).
- € I/We claim the priority from the above mentioned application(s) filed in convention country/countries and state that no application for protection in respect of the invention had been made in a convention country before that date by me/us or by any person from which I/We derive the title.
- € My/our application in India is based on international application under Patent Cooperation Treaty (PCT) as mentioned in Paragraph-9.
- € The application is divided out of my /our application particulars of which is given in Paragraph-10 and pray that this application may be treated as deemed to have been filed on DD/MM/YYYY under section 16 of the Act.
- € The said invention is an improvement in or modification of the invention particulars of which are given in Paragraph-11.

13. FOLLOWING ARE THE ATTACHMENTS WITH THE APPLICATION

(a) ✓Form 2

Item	Details	Fee	Remarks
Complete/ provisional specification)#	No. of pages		
No. of Claim(s)	No. of claims and No. of pages		
Abstract	No. of pages		
No. of Drawing(s)	No. of drawings and No. of pages		

In case of a complete specification, if the applicant desires to adopt the drawings filed with his provisional specification as the drawings or part of the drawings for the complete specification under rule 13(4), the number of such pages filed with the provisional specification are required to be mentioned here.

(b) Complete specification (in conformation with the international application)/as amended before the International Preliminary Examination Authority (IPEA), as applicable (2 copies).

(c) Sequence listing in electronic form

(d) Drawings (in conformation with the international application)/as amended before the International Preliminary Examination Authority (IPEA), as applicable (2 copies).

(e) Priority document(s) or a request to retrieve the priority document(s) from DAS (Digital Access Service) if the applicant had already requested the office of first filing to make the priority document(s) available to DAS.

(f) Translation of priority document/Specification/International Search Report/International Preliminary Report on Patentability.

(g) Statement and Undertaking on Form 3

(h) ✓Declaration of Inventorship on Form 5

(i) ✓Power of Authority

(j).....

.....

Total fee □.....in Cash/ Banker's Cheque /Bank Draft bearing No..... Date on ..... Bank.

I/We hereby declare that to the best of my/our knowledge, information and belief the fact and matters slated herein are correct and I/We request that a patent may be granted to me/us for the said invention.

Dated this.....day of.....20.....

Signature

Name: 1.Mr.S.Gokulkumar2. Dr. P.R. Thyla

To,
The Controller of Patents
The Patent Office, at.....

Note: -

* Repeat boxes in case of more than one entry.
* To be signed by the applicant(s) or by authorized registered patent agent otherwise where mentioned.
* Tick (✓)/cross (x) whichever is applicable/not applicable in declaration in paragraph-12.
* Name of the inventor and applicant should be given in full, family name in the beginning.
* Strike out the portion which is/are not applicable.

For fee: See First Schedule";

FORM 2

THE PATENTS ACT, 1970
(39 of 1970)
And
THE PATENTS RULES 2003

COMPLETE SPECIFICATION
(See Section 10; Rule 13)

"Camellia sinensis / Ananas comosus fiber based corrugated panel for sound damping"

Mr. S. Gokulkumar

Having address at

Assistant Professor in Department of Mechanical Engineering,
KPR Institute of Engineering and Technology
Arasur, Coimbatore
Tamil Nadu, India

Indian National

Dr. P.R. Thyla

Having address at

Professor and Head, Department of
Mechanical Engineering, PSG College of Technology, Coimbatore
Tamil Nadu, India

Indian National

THE FOLLOWING SPECIFICATION PARTICULARLY DESCRIBES THE INVENTION AND THE MANNER IN WHICH IT IS TO BE PERFORMED:

Abstract: -

A new class of Camellia Sinensis / Ananas Comosus fibers enhanced corrugated sandwich panel was developed and manufactured to achieve a durable, rigid, and weight-efficient structure. The crushing core layer consists of a sinusoidal corrugation and is produced by a mould pressing method.

Title: - Camellia sinensis / Ananas comosus fiber based corrugated panel for sound damping

APPLICANT NAME

1. Mr. S. Gokulkumar, 2. Dr.P. R. Thyla

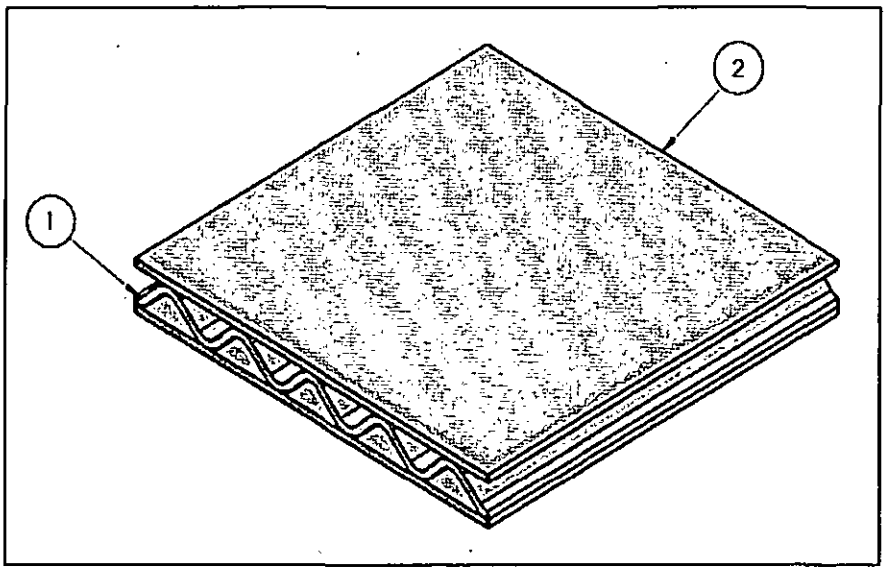

Figure 1

APPLICANT SIGNATURE

1. Mr. S. Gokulkumar

2. Dr. P.R. Thyla

Title: - Camellia sinensis / Ananas comosus fiber based corrugated panel for sound damping

5 **APPLICANT NAME**

1. Mr. S. Gokulkumar, 2. Dr.P. R. Thyla

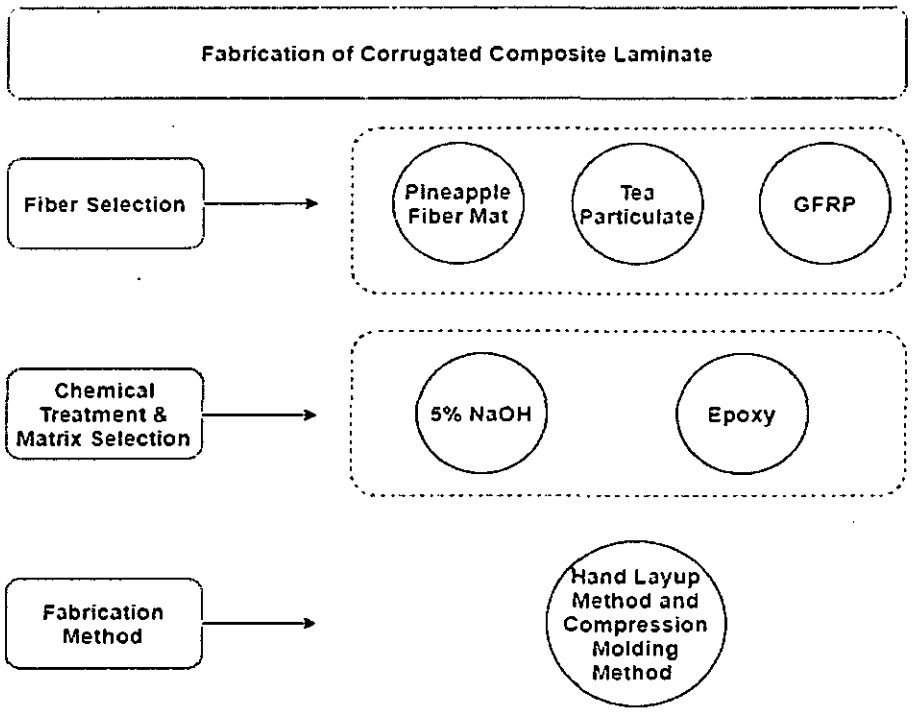

Figure 2

APPLICANT SIGNATURE

10

1. Mr. S. Gokulkumar

2. Dr. P.R. Thyla

Title of the invention: -

Camellia sinensis / Ananas comosus fiber based corrugated panel for sound damping

Field of the invention: -

The present invention relates to the field of materials and particular relates to field of fiber reinforced polymer composite manufactured with the application for absorbing the sound.

Prior art to the invention: -

A patent document with application number "KR1020120007604", titled with "Direct air supply type wall-mounted combined function ventilation device with built-in sound-absorbing pipe", describes, "PURPOSE: A direct supply hybrid ventilation system of wall mounted type having a sound absorption pipe is provided to directly exhaust polluted indoor air in a close distance and to implement direct ventilation at high velocity and high flow rate. CONSTITUTION: A direct supply hybrid ventilation system of wall mounted type (100) comprises a linear flowing structure machine part(A), and a sound absorption and a flowing air guide unit(B). The flowing structure machine part comprises a blocking plate (110), a plurality of heat generators (140), a pre-dust collecting filter (150), a post-dust collecting filter (151), a supply fan (120), an exhaust fan (130), and an anion generator (160). The heat generators implement a hybrid function for dehumidification, deodorization, and heat storage. The anion generator purifies the air by ionizing pollutants in the air using electric discharge of a discharge tube. The guide unit comprises acorrugated sound - absorption pipe (180) and a line diffuser (190). The line diffuser discharges downstream the air, which is horizontally guided from the machine part, to the inside"

A patent document with application number "CN208871825", titled with "Digital composite operating room active noise reduction system", describes, "The invention discloses a digital composite operating room active noise reduction system. wherein an air inlet (2) is formed in one side of the seat body (1); an annular air outlet (3) is formed in the other side; a corrugated sound absorption structure (8) is arranged on the inner wall of the annular air outlet (3); A partition plate (4) is installed at the separation position of the air outlet (3) and the air inlet (2). a poplar device (5) is arranged; a first sound pickup (6) is mounted on one

side of the air inlet (2); A second sound pick-up device (9), a control module (7) and a communication module (10) are installed on one side of the air outlet (3), the first sound pick-up device (6), the second sound pick-up device (9) and the loudspeaker (5) are connected with the control module(7), the control module (7) is connected with the communication module (10), and the communication module (10) is connected with the background controller (30) through the Ethernet (20). The noise reduction device has the advantage that the noise entering the air inlet pipeline of the digital composite operating room air conditioner can be obviously reduced. And the noise reduction device can absorb used for other spaces with higher requirements on noise reduction."

wherein, the present invention providesthe sound absorption corrugated structured panel gives equivalent sound absorption of existing panels with less in weight.

Objects of the invention: -

The primary object of the present invention is to provide the sound absorption corrugated structured panel gives equivalent sound absorption of existing panels with less in weight. The secondary object of the present invention is to provide sound absorption corrugated structured panel made up of biodegradable materials with synthetic binder which is easily disposable.

Summary of the invention: -

A new class of Camellia Sinensis / Ananas Comosus fibres enhanced corrugated sandwich panel was developed and manufactured to achieve a durable, rigid, and weight-efficient structure. The crushing core layer consists of a sinusoidal corrugation and is produced by a mould pressing method.The corrugated structure is mainly preferred for less weight application.Comparing to normal acoustic panel, corrugated structured panel gives equivalent sound absorption with less weight.The corrugated structure has different types such as honeycomb, sine wave, curved and so on.

Brief description of diagram: -

Figure 1 is the schematic representation of Camellia sinensis / Ananas comosus fiber based corrugated panel for sound damping.

Figure 2 is the schematic representation of process flow chart for preparing the panel.

Detailed description: -

The following specification particularly describes the invention and the manner in which it is to be performed.

The natural fiber materials like tea particulates (Camellia Sinensis) / pineapple (Ananas comosus) was selected as novel materials for binding with synthetic epoxy resin as shown in Table.1

Table 1: Fiber and Matrix Materials

S. No	Name of the Fiber & Matrix material	Biological/Common Name	Density (g/cm^3)	Hemicellulose (%)	Lignin, Pectin and Waxes (%)
1	Industrial Tea leaf waste	Camellia sinensis	0.7255	2.1	12.8
2	Pineapple fiber	Ananas comosus	1.526	21.8	58.35
3	E – Glass fiber	Alumino-borosilicate	2.55	-	-
4	Epoxy	$C_{21}H_{25}ClO_5$	1.17	-	-

The chemical pre-treatment was done to convert the natural fibers fromhydrophobic to hydrophilic state in-order to increase the binding nature as tabulated in Table.2.The treated fibers with reduced hemicellulose, lignin, waxes, and pectin acts as a stumbling block for achieving better interlocking.Alkaline treatment (NaOH) increases copolymerization.

Weight fraction calculation for fabrication of corrugated panel was tabulated in Table.3. It is designated as 25 wt.% of Camellia Sinensis, 5 wt.% of Ananas comosus, 10 wt.% of E-Glass fiber and 60 wt.% of epoxy synthetic resin. The cost estimation was tabulated in Table.4

Table 2: Chemical Compositions of Fiber

Hydrophilic Content	% of composition present before chemical treatment		% of composition present after chemical treatment	
	Camellia sinensis	Ananas comosus	Camellia sinensis	Ananas comosus
Cellulose	56.11	21.8	32.11	15.85
Lignin	37.25	28.34	28.12	13.54
Hemicellulose	13.24	29.74	4.32	12.41
Wax	2.32	0.32	1.37	0.27
Ash	4.95	0.81	1.97	0.63

Table 3: Laminate Concoction

Weight (gms) w_f				Weight Fraction (%) W_f			
w_t	w_p	w_g	w_m	W_t	W_p	W_g	W_m
180	30	60	360	25	5	10	60

Laminate sequence: G – P – G – T – G – P – G

G - Glass fiber; **P** - Ananas comosus (pineapple fiber); **T** - Camellia sinensis (tea particulates).

The 15 mm sandwich fiber reinforced laminate consist of dual 5 mm top and bottom layer and corrugated sinusoidal wave structure of 5 mm thickness. The corrugated core (1) and outer sheet (2) was fabricated by using press moulding method. It exhibits Noise Reduction Coefficient (NRC) of 0.64 which is 18.75% ahead from Single plane membrane structure's NRC rate.

Table 4: Cost Estimation – Fabrication and Testing

Fabrication Cost	
Materials and components	**Cost**
Pineapple / Tea Particulates	Available in nature (Reusable)
Glass Fiber	Rs.230
Epoxy Resin / Natural binder	Rs.550
Compression Moulding Charge	Rs.350
Total	**Rs. 1130**

Table 5: Acoustical Analysis of Hybrid laminates

Snippet	**Volume Fraction of *Camellia Sinensis***	**Frequencies (Hz)**				**NRC**
		250	**500**	**1000**	**2000**	
Single plane membrane structure (15mm thickness)	**25%**	0.43	0.51	0.53	0.59	**0.52**
Corrugated structure panel (15mm thickness)	**25%**	0.55	0.61	0.69	0.71	**0.64**
Percentage increase in NRC (%) of Corrugated structure panel (15mm thickness) from Single plane membrane structure (15mm thickness)						**18.75**

5 The results show Noise Reduction Coefficient (NRC) for single plane membrane (15 mm thick) of 0.52. It is then compared with corrugated material to establish the potential of using it in sound-proofing acoustical applications such as architectural acoustics, sound

recording and reproduction room, noise barrier walls, loudspeaker design, and so on. Noise Reduction Coefficient (NRC) of 0.64 was attained for corrugated material. An increase in 18.75% was achieved in corrugated shape structure composite panel when compared with single membrane structure as shown in Table.5.

Claims: -

1) We claim,

A Camellia sinensis / Ananas comosus fiber based corrugated panel for sound damping: comprises of,

A corrugated core (1); and

An outer sheet (2);

wherein, the corrugated core (1) material is the inner core and external material as an outer sheet (2), to form the natural fiber based sound absorption unit.

2) The Camellia sinensis / Ananas comosus fiber based corrugated panel for sound dampingas claimed in claim 1, wherein, the said panel is light weight and absorb the equivalent sound in par the other existing absorbing materials.

INTELLECTUAL PROPERTY INDIA
एकस्व/PATENTS|अभिकल्प/DESIGNS|
व्यापार चिह्न/TRADE MARKS|भौगोलिक
उपदर्शन/GEOGRAPHICAL INDICATIONS

सत्यमेव जयते

भारत सरकार
GOVERNMENT OF INDIA

एकस्व कार्यालय / THE PATENT OFFICE
बौद्धिक सम्पदा भवन / I.P.O. BUILDING
जी.एस.टी.रोड, गिंडी/ G.S.T.Road, Guindy,
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फ़ैक्स/ Fax: 044 22502066

Email/ई मेल : Chennai-patent@nic.in
वेबसाइट /Website:http://ipindia.nic.in

सं.संख्या/Ref.No /आवेदन संख्या/Application No/ 202141000670 दिनांक/Date of Dispatch/Email: 31-07-2023

सेवा मे,/To
S. GOKULKUMAR,
Mr. S. GOKULKUMAR, ASSISTANT PROFESSOR IN DEPARTMENT OF MEHCANICAL ENGINEERING, KPR INSTITUTE OF ENGINEERING AND TECHNOLOGY, ARASUR, COIMBATORE, TAMIL NADU, INDIA-641407. gokulkumarmeprof@gmail.com
Email : gokulkumarmeprof@gmail.com

विषय: एकस्व अधिनियम, 1970 की धारा 12 व 13 तथा एकस्व नियम, 2003 के अधीन परीक्षण रिपोर्ट
Subject: Examination report under sections 12 & 13 of the Patents Act, 1970 and the Patents Rules, 2003.

1. उपर्युक्त आवेदन के संदर्भ मे परीक्षण रिपोर्ट (अर्थात, एकस्व नियम, 2003 (यथा संशोधित) के नियम 24-ख(3) में विनिर्दिष्ट आपत्तियों का प्रथम कथन) इसके साथ संलग्न है। यह रिपोर्ट परीक्षण हेतु अनुरोध दिनांक 07-01-2021 के उत्तर मे जारी की गयी है। परीक्षण रिपोर्ट का उत्तर दाखिल करने की अंतिम तिथि (अर्थात, इस रिपोर्ट में लगाई गयी सभी आवश्यकताओं के अनुपालन की अवधि) आवेदक को आपत्तियों का प्रथम कथन जारी होने की तिथि से छः माह है।
   Please find enclosed herewith an Examination Report (i.e. a first statement of objections as specified in Rule 24-B(3) of The Patents Rules, 2003 (as amended)) in respect of above-mentioned application. This report is issued with reference to a request for examination dated 07-01-2021.The last date for filing a response to the Examination Report (i.e. a period to comply with all the requirements raised in this examination report) is six months from the date on which the first statement of objections is issued to the Applicant.

2. यदि रिपोर्ट के अंतर्गत लगाई गयी आवश्यकताओं का अनुपालन एकस्व नियम, 2003 (यथा संशोधित) के नियम 24 ख(5) में विनिर्दिष्ट अवधि के भीतर अंदर अनुपालन नहीं किया गया तो एकस्व अधिनियम 1970 की धारा 21(1) के अधीन वर्तमान आवेदन को परित्यक्त माना जाएगा।
   The instant application shall be deemed to have been abandoned under Section 21(1) of The Patents Act, 1970, unless all the requirements raised in this report are complied with in the period as specified in Rule 24-B (5) of The Patents Rules, 2003 (as amended).

3. आपका ध्यान एकस्व नियम, 2003 के नियम 24 ख(6) के प्रावधानों की ओर भी आमंत्रित किया जाता है।
   Your attention is also invited to the provisions of Rule 24-B (6) of the Patents Rules 2003.

4. आपको सलाह दी जाती है कि शीघ्र निपटान हेतु अपना उत्तर शीघ्र प्रस्तुत करें।
   You are advised to file the reply at the earliest for early disposal.

Jayant Anand
नियंत्रक पेटेंट/ Controller of Patents

संलग्न/Enclosed: अपरोक्त अनुसार/As above

टिप्पणी: यह इलेक्ट्रोनिक रूप से उत्पन्न रिपोर्ट है।
NOTE: This is an electronically generated report.

सभी पत्राचार नियंत्रक एकस्व को उपरोल्लिखित पते पर भेजा जाये।
All communications should be sent to the Controller of Patents at the above mentioned address.

THE PATENT OFFICE

परीक्षण रिपोर्ट /Examination Report

आवेदन संख्या /Application Number	202141000670
दाखिल करने की तिथि /Date of Filing	07-01-2021
पूर्विक्ता दिनांक /Date of Priority	--
पीसीटी अंतर्राष्ट्रीय आवेदन की संख्या व दिनांक / PCT International Application No. & Date	--
आवेदक /Applicant	Mr. S. GOKULKUMAR
परीक्षण हेतु अनुरोध की संख्या व दिनांक /Request for Examination No. & Date	R20214000581 07-01-2021
प्रकाशन की तिथि /Date of Publication	15-01-2021

इस परीक्षण रिपोर्ट के चार भाग हैं, अर्थात रिपोर्ट का सारांश, विस्तृत तकनीकी रिपोर्ट, औपचारिक आवश्यकताएँ तथा रिकॉर्ड मे दस्तावेज़ /
This examination report consists of four parts, namely summary of the report, detailed technical report, formal requirements and documents on record.

भाग -1: रिपोर्ट का सारांश
PART-I: SUMMARY OF THE REPORT

क्र. सं. /Sl. No.	अधिनियम के तहत आवश्यकताओं पर विस्तृत टिप्पणियां /Requirements under the Act		दावों की संख्या /Claim Numbers	टिप्पणी /Remarks
1.	धारा 2(1)(ज) के तहत आविष्कार /Invention u/s 2(1)(j)	नवीनता /Novelty	दावे /Claims:	हाँ /Yes
			दावे /Claims: 1 and 2	नहीं /No
		आविष्कारी कदम / Inventive step	दावे /Claims:	हाँ /Yes
			दावे /Claims: 1 and 2	नहीं /No
2.	धारा 3 के अधीन पेटेंट-अयोग्यता (यदि हाँ, खंड 3(क-त) /Non-patentability u/s 3 (if yes, specify section3(a-p))		दावे /Claims: 1 and 2	हाँ /Yes 3 (d)
			दावे /Claims:	नहीं /No
3.	[धारा 10(5) व 10(4) (ग)] के अधीन दावे /Claims [u/s 10(5) & 10(4) (c)]	परिभाषिकता /Definitive	दावे /Claims:	हाँ /Yes
			दावे /Claims: 1	नहीं /No
		विवरण द्वारा समर्थित /Supported by description	दावे /Claims:	हाँ /Yes
			दावे /Claims: 1 and 2	नहीं /No
		क्षेत्र /Scope	दावे /Claims:	हाँ /Yes
			दावे /Claims: 1 and 2	नहीं /No

भाग –II विस्तृत तकनीकी रिपोर्ट
PART-II: DETAILED TECHNICAL REPORT

क. उद्धरित दस्तावेजों की सूची /A.List of documents cited:

(क) पेटेंट साहित्य / (a). Patent Literature :

कोई दस्तावेज़ उद्धृत नहीं है /No Document Cited

(ख) गैर-पेटेंट साहित्य /(b).Non-patent literature

क्र. सं.		प्रकाशन तिथि(दिन/माह/वर्ष)	उद्धरित दस्तावेज़ का प्रासंगिक विवरण (पृष्ठ व अनुच्छेद संख्या) /Relevant	अभिकथित आविष्कार के दावे	अभिकथित आविष्कार के दावे

/ Sl.no	दस्तावेज़ों का विवरण /Details of documents	/Publication date	description (page and paragraph no.) of cited document	/Relevant claims of cited document	/Claims of alleged invention
1	D1. S Gokulkumar, PR Thyla, L Prabhu & S Sathish (2019): Characterization and Comparative Analysis on Mechanical and Acoustical Properties of Camellia Sinensis/Ananas Comosus/Glass Fiber Hybrid Polymer Composites, Journal of Natural Fibers, DOI:10.1080/15440478.2019.1675215. https://doi.org/10.1080/	06/10/2019	Whole document		1 and 2
2	D2. Prabhu L, Krishnaraj V, Sathish S, Gokulkumar S, Sanjay MR, Siengchin S. Mechanical and acoustic properties of alkali-treated sansevieria ehrenbergii/camellia sinensis fiber –reinforced hybrid epoxy composites: incorporation of glass fiber hybridization. Applied Composite Materials. 2020 Dec;27:9	01/12/2020	Whole document		1 and 2
3	D3. Putra A, Or KH, Selamat MZ, Nor MJ, Hassan MH, Prasetiyo I. Sound absorption of extracted pineapple-leaf fibres. Applied Acoustics. 2018 Jul 1;136:9-15.	01/07/2018	Whole document		1 and 2

ख. अधिनियम के तहत आवश्यकताओं पर विस्तृत टिप्पणियां /B. Detailed observations on the requirements under the Act:

(1).नवीनता / NOVELTY:

(I) ऊपर उद्धरित दस्तावेज़ के संदर्भ (1 and 2) मे दिये गए प्रकटन के पूर्वानुमान को ध्यान मे रखते हुए, निम्नलिखित कारणों से दावा(वों) (1 and 2) मे नवीनता की कमी है /
Claim(s) (1 and 2) lack(s) novelty, being anticipated in view of disclosure in the document cited above under reference D1 for the following reasons:

The instant application describes about a camellia sinensis/ananas cosmosus fiber based corrugated panel for sound damping.

The subject matter of the claims 1 and 2 of the instant application is not novel over the document D1, as the document discloses all the essential features of claims.

D1 discloses the fiber-reinforced composite materials are made with Camellia sinensis–Ananas comosus hybridized by glass fiber and epoxy resin matrix.

Hence the subject matter of the claims 1 and 2 of the instant application is not novel over the cited document D1.

(2).आविष्कारी कदम / INVENTIVE STEP:

(I) ऊपर उद्धरित दस्तावेज़(जों) के संदर्भ D1-D3 मे स्पष्ट अध्यापन(नों) को ध्यान मे रखते हुए, निम्नलिखित कारणों से दावा(वों) (1 and 2) मे

आविष्कारी कदम की कमी है
Claim(s) (1 and 2) lack(s) inventive step, being obvious in view of teaching (s) of cited document(s) above under reference D1-D3 for the following reasons:

The claims 1 and 2 of the alleged invention are not novel, hence it is also not inventive under section 2 (1) (j).

As it is already objected in novelty of claims 1 and 2 considering the prior art document D1, the said document also considered for the lack of inventive step.

The subject matter of the claims 1 and 2 are obvious to a person skilled in the art, and do not constitute an invention as per the section 2(1)(j) of The Patents Act, 1970, as they do not involve an inventive step, in view of the documents D1-D3.

D2 discloses the acoustic behaviour of snake grass/camellia sinensis fibers with glass fiber-reinforcement to form the hybrid epoxy composites.

D3 discloses the use of pineapple fibers in preparing sound absorbing material.

Document D1 is considered as closest prior art to the instant application. In view of the D1, it would have been obvious for a person skilled in the art at the time of invention to develop a camellia sinensis/ananas cosmosus fiber based corrugated panel for sound damping, by combining the teachings of D2 and D3.

Hence, in view of the documents D1-D3, the subject matter of the instant application do not constitute an invention as per the section 2 (1) (ja) of The Patents Act, 1970.

(3).पेटेंट अयोग्यता /NON PATENTABILITY:

(I) निम्नलिखित कारणों से धारा 3 के खंड (3 (d))के प्रावधान के तहत दावा(वे) (1 and 2) सांविधिक रूप से पेटेंट योग्य नहीं हैं /
Claim(s) (1 and 2) are statutorily non-patentable under the provision of clause (3 (d)) of Section 3 for the following reasons:

Subject matter of the claims 1 and 2 attracts section 3(d) of The Patents Act, 1970, as it is not new, in view of the cited prior art.

(4).प्रकटन की दक्षता /SUFFICIENCY OF DISCLOSURE:

(I) दावा(वे) 1 and 2 विनिर्देश मे प्रकट विषय पर आधारित नहीं है अथवा निम्नलिखित कारणों से विनिर्देश मे प्रकटन द्वारा समर्थित नहीं है।
Claim(s)'1 and 2' are not fairly based on the matter disclosed in the specification or not supported by the disclosure in the specification for the following reasons:

The complete specification does not fully and particularly disclose the alleged invention and its operation or use and the method by which it is to be performed. There is no data or experimental evidence to establish the alleged effect of claimed product and method. Further, it does not disclose the best method of performing the invention, which is known to the applicant. The disclosure in the specification is so insufficient that it does not disclose everything with data or experimental evidence, which is technically required to perform the claimed invention, to use the product and to perform the method. There is no example, which enables the claimed product and method using the product of present application and in absence of it, a person skilled in the art would require performing undue experimentation. Thus, in all, the complete specification fails to meet the requirements of Section 10(4) (a) and (b) of the Act.

The claims 1-2 are not fully and particularly described with working example and hence the description provided does not full fill the requirements of section 10 (4) (a), (b) & (c) of the Patents Act, 1970.

(II) आविष्कार मे उपयोग की गयी जैविक सामग्री के स्रोत व भौगोलिक उद्गम की सूचना.

Information of source and geographical origin of biological material used in the invention:

Source/geographical origin of used biological materials should be specified in the specification as per requirements u/s 10 and declaration need to be furnished at para 12(iii) of the Form-1 (*Tick/Cross whichever is applicable/not applicable to the declaration); if the place of origin is from India, National Biodiversity Authority (NBA) approval is required.

If the biological material is not from India then the specification should be amended by way of incorporation of a separate heading/paragraph at the beginning of the description that the biological materials used in the invention is not from India and should clearly specify the country of source & geographical origin of the same.

(5).क्षेत्र /SCOPE:

(I) दावा(वे) 1 and 2 आविष्कार के उस क्षेत्र जिस के लिए संरक्षण का दावा किया गया है उसे निम्नलिखित कारणों से परिभाषित नहीं करता(ते) है.
Claim(s) 1 and 2 does/do not define the scope of invention for which the protection is claimed for the following reasons:

1. Principal/independent claims must contain all the essential technical features, based on which novelty and inventive step can be established.

2. Subject matter of the claim 2 is not a technical feature.

3. Claims 1 and 2 have been drafted in vague and broad manner, which makes the scope of claims indefinite /unclear for which protection is sought and hence not allowable.

(6).परिभाषिकता /DEFINITIVENESS:

(I) दावा(वे)1 निम्नलिखित कारणों से आविष्कार को पर्याप्त रूप से परीभाषित नहीं करता(ते) हैं
Claim(s) 1 do not sufficiently define the invention for the reasons as follows:

Independent claim should contain the subject matter related to a product or process defined by its essential technical features. Claims shall clearly characterize the structural features of the product, a functional/purpose limitation will not define the product.

(7).राष्ट्रीय जैव विविधता अधिनियम (एनबीए) का अनुमोदन आवश्यक है /National Biodiversity Act(NBA) Approval Required :

(I) Attention of the applicant is invited towards Section 6 of the Biodiversity Act 2002 which mandates that if biological material obtained from India is used in the application for Patent, then permission and other information for making application for patent should be obtained from the National Biodiversity Authority and details should be furnished in the application Form 1 column 9 (iii). Relevant application form (Form 3,Rule 18) for such permission is available in the website of National Biodiversity Authority

(8).अन्य आवश्यकताएँ /OTHERS REQUIREMENTS:

(I)

The applicant is required to provide a marked up copy of all amendments made in the description and claims to meet the requirements of the objections raised.

भाग – III: औपचारिक आवश्यकताएँ /PART-III: FORMAL REQUIREMENTS

कोई आपत्ति नहीं /No Objections

भाग-IV: रिकॉर्ड मे दस्तावेज़ /PART-IV: DOCUMENTS ON RECORD

निम्नलिखित दस्तावेज़ों के आधार पर यह परीक्षण रिपोर्ट तैयार की गयी है
The examination report has been prepared based on the following documents:

कार्यसूची तिथि / Docket Date	कार्यसूची संख्या /Docket Number	प्रविष्टि संख्या विवरण /Entry Number Description
07 Jan 2021	1489	1-New Application For Patent With Provisional /Complete Specification
07 Jan 2021	1489	2-Complete After Provisional Specification - Form 2 Check For No. OF Pages & Claims
07 Jan 2021	1489	3-Statement & Undertaking - Form 3
07 Jan 2021	1489	12-Request For Early Publication - Form 9
07 Jan 2021	1489	5-Declaration As To Inventorship - Form 5
07 Jan 2021	1489	28(i)-Request For Examination After 18 months Publication - Form 18

नियंत्रक का नाम /Name of the Controller: Jayant Anand

नियंत्रक स्थान /Controller Location: Kolkata

टिप्पणी: परीक्षण रिपोर्ट का उत्तर दाखिल करने की अंतिम तिथि / Note: Last date for filing response to the Examination Report: 31-01-2024