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सं.संख्या/Ref.No /आवेदन संख्या/Application No/ 202141005142

दिनांक/Date of Dispatch/Email: 15/12/2022

सेवा में,/To

BADIADKA NARAYANA,

Mangalore University (Department of Industrial Chemistry), Mangalore University, Mangalagangothri 574199.

Email : nbadiadka@gmail.com, patentcell@mangaloreuniversity.ac.in

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 में परीक्षण रिपोर्ट (अर्थात्, 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 23/09/2021 के उत्तर में जारी की गयी है। परीक्षण रिपोर्ट का उत्तर दाखिल करने की अंतिम तिथि (अर्थात्, 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 23/09/2021. 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.

Dr. Jitender Sharma
नियंत्रक पेटेंट/ Controller of Patents

संलग्न/Enclosed: अपरोक्त अनुसार/As above

टिप्पणी: यह इलेक्ट्रॉनिक रूप से उत्पन्न रिपोर्ट है।

NOTE: This is an electronically generated report.

सभी पत्राचार नियंत्रक एकस्व को उपरोक्त लिखित पते पर भेजा जाये।

All communications should be sent to the Controller of Patents at the above mentioned address.

परीक्षण रिपोर्ट / Examination Report

आवेदन संख्या /Application Number	202141005142
दाखिल करने की तिथि /Date of Filing	06/02/2021
पूर्विका दिनांक /Date of Priority	--
पीसीटी अंतर्राष्ट्रीय आवेदन की संख्या व दिनांक / PCT International Application No. & Date	--
आवेदक /Applicant	Mangalore University
परीक्षण हेतु अनुरोध की संख्या व दिनांक /Request for Examination No. & Date	R20214032069 23/09/2021
प्रकाशन की तिथि /Date of Publication	12/08/2022

इस परीक्षण रिपोर्ट के चार भाग हैं, अर्थात रिपोर्ट का सारांश, विस्तृत तकनीकी रिपोर्ट, औपचारिक आवश्यकताएँ तथा रिकॉर्ड में 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 टिप्पणियाँ /Requirements under the Act	दावों की संख्या /Claim Numbers	टिप्पणी /Remarks
1.	धारा 2(1)(ग) के तहत आविष्कार /Invention u/s 2(1)(j)	नवीनता /Novelty	दावे /Claims: 1-8 हाँ /Yes
		आविष्कारी कदम / Inventive step	दावे /Claims: हाँ /Yes
		औद्योगिक उपयोगिता /Industrial Applicability	दावे /Claims: 1-8 हाँ /Yes
			दावे /Claims: 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: 1-6,7 हाँ /Yes	हाँ /Yes 3(d), 3(e),3(f)
3.	धारा 10(4) के अधीन प्रकटन की दक्षता (हाँ/नहीं निर्दिष्ट करें) /Sufficiency of disclosure u/s 10 (4) (Specify Yes/No)	NO	हाँ /Yes
4.	[धारा 10(5) व 10(4) (ग)] के अधीन दावे /Claims [u/s 10(5) & 10(4) (c)]	स्पष्टता/ संक्षिप्तता /Clarity / Conciseness	दावे /Claims: हाँ /Yes
		परिभाषिकता /Definitive	दावे /Claims: 1,4 नहीं /No
			दावे /Claims: हाँ /Yes
		क्षेत्र /Scope	दावे /Claims: 1,8 नहीं /No
		दावे /Claims: हाँ /Yes	हाँ /Yes
		दावे /Claims: 3,6-8 नहीं /No	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 :

क्र. सं.	दस्तावेजों का विवरण	प्रकाशन	उद्धरित दस्तावेज का प्रासंगिक विवरण (पृष्ठ व अनुच्छेद संख्या) /	उद्धरित दस्तावेज के प्रासंगिक दावे /	अभिकथित आविष्कार के
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/ Sl.no	/Details of documents	तिथि(दिन/माह/वर्ष) / Publication date	Relevant description (page and paragraph no.) of cited document	प्रासंगिक विवरण / Relevant claims of cited document	दावे /Claims of alleged invention
1	D2 US10800966B2	13/12/2020	whole document	1-12	1-8

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

क्र. सं. / Sl.no	दस्तावेजों का विवरण /Details of documents	प्रकाशन तिथि(दिन/माह/वर्ष) /Publication date	उद्धरित दस्तावेज का प्रासंगिक विवरण (पृष्ठ व अनुच्छेद संख्या) /Relevant description (page and paragraph no.) of cited document	अभिकथित आविष्कार के दावे /Relevant claims of cited document	अभिकथित आविष्कार के दावे /Claims of alleged invention
1	D1 Pai, A. J., Sarojini, B. K., Harshitha, K. R., Shivarama Holla, B., & Lobo, A. G. (2019). Spectral, morphological and optical studies on bischalcone doped polylactic acid (PLA) thin films as luminescent and UV radiation blocking materials. Optical Materials, 90, 145–151. doi:10.1016/j.optmat.2019	12/03/2019	whole document		1-8
2	D3 Zhang, X. H., Wu, S. K., Gao, Z. Q., Lee, C. S., Lee, S. T., & Kwong, H.-L. (2000). Pyrazoline derivatives for blue color emitter in organic electroluminescent devices. Thin Solid Films, 371(1-2), 40–46. doi:10.1016/s0040-6090(00)00976-7	21/05/1999	whole document		1-8
3	D4 Bliznyuk, V. N., Seliman, A. F., Ishchenko, A. A., Derevyanko, N. A., & DeVol, T. A. (2016). New Efficient Organic Scintillators Derived from Pyrazoline. ACS Applied Materials & Interfaces, 8(20), 12843–12851. doi:10.1021/acsami.6b02719	04/03/2016	whole document		1-8
4	D5 PubChem CID-139086729	03/10/2019	whole document		1-8

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

(1). आविष्कारी कदम / INVENTIVE STEP:

(I) ऊपर उद्धरित दस्तावेज(जों) के संदर्भ में स्पष्ट अध्यापन(जों) को ध्यान में रखते हुए, निम्नलिखित कारणों से दावा(वों) (1-8) में आविष्कारी कदम की कमी है

Claim(s) (1-8) lack(s) inventive step, being obvious in view of teaching (s) of cited document(s) above under reference for the following reasons:

The application relates to a composition containing Polylactic acid (PLA) doped with organic fluorophore containing pyrazoline derivative and methods for preparing the same.

D1 discloses bischalcone doped polylactic acid (PLA) thin films as luminescent and UV radiation-blocking materials. The UV absorbance of the pristine PLA film is observed at λ_{max} 300 nm and for the doped films at λ_{max} 330 nm. The prominent photoluminescence (PL) emission peak at 440 nm is obtained for doped PLA with dopant dependent increase in absolute quantum yield of 41–62%.

The subject matter of D1 differs from the alleged composite in a mere selection of a different dopant i.e. D1 has utilized bischalcone as a dopant rather than pyrazoline derivatives.

However, D2 has provided a plastic scintillator comprising a polymeric matrix and substituted pyrazoline incorporated in the polymeric matrix.

Further D3 has described four derivatives of pyrazoline as a doping dye in EL devices wherein it was observed that the pyrazoline derivatives show very strong PL and EL. Compound EP3 in fig-1 has substantially overlapped the alleged compound.

Also, D4 has disclosed scintillation properties of pyrazoline core-based fluorophores such as compound pz1 in scheme-1 that has 2 phenyl substituted rings attached to the carbon atom of the pyrazoline moiety.

In addition, D5 has provided 1-{3-(4-Chlorophenyl)-5-[4-(propan-2-yl)phenyl]-4,5-dihydro-1H-pyrazol-1-yl}propan-1-one which is the same dopant that has been claimed in the instant application, thus indicating about a mere second use of an existing compound.

Consequently from the subject matter of D1 in combination with the incorporation of pyrazoline derivatives as a dopant from D2 to D5, any person skilled in the art can arrive at the claimed invention as disclosed in the present application without any technological advancement.

Further, no outstanding technical advancement as compared to the subject matter described in the prior art has been described in the specification by comparing the enhancement obtained through the claimed mixture and the efficacy obtained through an individual component.

To prove an inventive step, the applicant should compare the distinguishing features of the cited prior art documents to a surprising technical effect.

Thus, claims 1-8 lack an inventive step u/s 2(1)(ja) of The Patents Act.

(2).पेटेंट अयोग्यता /NON PATENTABILITY:

(I) निम्नलिखित कारणों से धारा 3 के खंड (3(d), 3(e),3(f))के प्रावधान के तहत दावा(वे) (1-6,7) सांविधिक रूप से पेटेंट योग्य नहीं हैं / Claim(s) (1-6,7) are statutorily non-patentable under the provision of clause (3(d), 3(e),3(f)) of Section 3 for the following reasons:

1. Claims 1-8 are not patentable u/s 3(d) of the Act, appear to be "mere use of a known compound" and fall under the said clause. In the absence of experimental data showing an unexpected effect, it is not clear if the claimed compound act to provide an enhancement of the known efficacy i.e., demonstrates a greater technical effect and/or differs significantly in properties w.r.t the known compound in D5.

2. Claims 1-6 fall u/s 3(e) of The Patents (Amendment) Act, 1970 as the said claims define a mere admixture resulting in the aggregation of the properties of the components thereof. It is not clear if the combined components act together to provide a technical effect that is greater than just the sum of the two or more compounds alone, or whether the combination is, in fact, a mere juxtaposition with no interaction of the compounds over D1-D4.

3. Claim-7 of the alleged invention attract the provision of section 3(f) of the act as it seems to be a mere

arrangement or re-arrangement or duplication of known device each functioning independently of one another in a known way.

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

(I) विनिर्देश पूर्णतया: व विशेषकर आविष्कार तथा इसके संचालन तथा विधि के निष्पादन के संबंध में विवरण नहीं देते हैं।

The complete specification does not fully and particularly describe the invention and its operation and the method by which it is to be performed in respect of:

The preamble of claims: 7 and 8 relate to a photo-electrochemical and/or optoelectronic device and security element respectively however the subject matter relates to the inherent properties of the luminescent material and is thus being treated as the intended use of the same. Hence, these claims are not allowable u/s 10(4)(a) and 10(4)(b) of The Patents Act, 1970 pertaining to application claims.

(4). क्षेत्र /SCOPE:

(I) दावा(ते) 3,6-8 आविष्कार के उस क्षेत्र जिस के लिए संरक्षण का दावा किया गया है उसे निम्नलिखित कारणों से परिभाषित नहीं करता(ते) है।
Claim(s) 3,6-8 does/do not define the scope of invention for which the protection is claimed for the following reasons:

The subject matter of claims: 3, 6-8 relates to inherent properties of the components such as "emitting Ultraviolet radiation, use in bioimaging as a detection means, photo-electrochemical and/or optoelectronic device, and security element for the protection of value documents or value commercial goods". Since, these features don't include any special technical features, therefore, the scope is unclear. Hence not allowable u/s 10(4) of The Patents Act pertaining to application claims.

(5). स्पष्टता एवं संक्षिप्तता /CLARITY AND CONCISENESS:

(I) दावा(ते) 1,4 के संबंध में स्पष्ट रूप से परिभाषित नहीं हैं।

Claim(s) 1,4 are not clearly worded in respect of:

The subject matter of Claims: 1 and 4 lack clarity in terms of "which on doping significantly emitting radiation having a wavelength in the UV spectrum range" and "activators emit radiation with a wavelength ", as the initial phrase is silent about the quantitiveness of wavelength while the latter phrase lacks clarity about the component that is representing the activators. Thus, it is not allowable u/s 10(4)(c) of The Patents Act, 1970.

(6). परिभाषिकता /DEFINITIVENESS:

(I) दावा(ते) 1,8 निम्नलिखित कारणों से आविष्कार को पर्याप्त रूप से परिभाषित नहीं करता(ते) हैं

Claim(s) 1,8 do not sufficiently define the invention for the reasons as follows:

Claims 1, and 8 of the present application are very broad in terms of "Polylactic acid (PLA) based biopolymer, pyrazoline derivative, and dopant material" and disclose a large number of possible compounds. However, support and disclosure in sense of section 10(5) are found for only a small number of compounds claimed. Therefore, the subject matter should be restricted as per the examples cited in the description.

(7).अन्य आवश्यकताएँ /OTHERS REQUIREMENTS:

(I)

1. The term "further comprising" must be deleted in claim-5. Further, all the essential technical features of the invention must be included in the principal claim.
2. The term "of claims" in the dependent claims should be replaced with "as claimed in".

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

आपत्तियाँ /Objections	टिप्पणी /Remarks
Statement & Under Taking (Form 3 Details)	<p>1. Details regarding applications for Patents that may be filed outside India from time to time for the same or substantially the same invention should be furnished within six months from the date of filing of the said application under clause (b) of subsection(1) of section 8 and rule 12(2) of the Patents Act and Rules.</p> <p>2. Details regarding the search and/or examination report including claims of the application allowed, as referred to in section 8(2) of the Patens Act, in respect of the same or substantially the same invention filed in all the major Patent offices such as USPTO, EPO, and JPO, etc., along with appropriate English translation where applicable, should be submitted within a period of six months from the date of receipt of this communication as provided under rule 12(3) of the Patents Rules.</p>
Format of Specification (rule 13)	As the complete specification doesn't contain claims, therefore the applicant needs to file a fresh set of claims. Meanwhile, the examination has been done on the basis of claims present in the "view CS" header in the patent module.
Format of Drawings	Drawings should be prepared in accordance with Rule 15 (6) of the Patents Rules, 2003 (as amended).

भाग-IV: रिकॉर्ड में 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
06 Feb 2021	10763	1-New Application For Patent With Provisional /Complete Specification
23 Sep 2021	85901	28(i)-Request For Examination After 18 months Publication - Form 18

नियंत्रक का नाम /Name of the Controller: **Dr. Jitender Sharma**

नियंत्रक स्थान /Controller Location: **Delhi**

टिप्पणी: परीक्षण रिपोर्ट का उत्तर दाखिल करने की अंतिम तिथि / Note: Last date for filing response to the Examination Report: 15/06/2023