



**INTELLECTUAL
PROPERTY INDIA**

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



भारत सरकार
GOVERNMENT OF INDIA

एकस्व कार्यालय / THE PATENT OFFICE
बौद्धिक सम्पदा भवन / I.P.O. BUILDING
जी.एस.टी.रोड, गिन्डी / G.S.T.Road, Guindy,
चेन्नई / Chennai- 600032
दूरभाष / Tel. No. : (091)(044)22502081-84
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/ 201941034016

दिनांक/Date of Dispatch/Email: 03/03/2021

सेवा मे, /To

VENKATARAMAN SHANKAR,

Indian Institute of Technology Madras, IPM cell, Industrial Consultancy & Sponsored Research (IC&SR) building,
IIT P.O., CLRI opposite, Adyar, Chennai 600036

Email : ipoffice@iitm.ac.in, cmipm-icsr@imail.iitm.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 25/08/2020 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 25/08/2020. 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.

Raman Kumar
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	201941034016
दाखिल करने की तिथि /Date of Filing	23/08/2019
पूर्विका दिनांक /Date of Priority	--
पीसीटी अंतर्राष्ट्रीय आवेदन की संख्या व दिनांक / PCT International Application No. & Date	--
आवेदक /Applicant	Indian Institute of Technology Madras
परीक्षण हेतु अनुरोध की संख्या व दिनांक /Request for Examination No. & Date	R20204025792 25/08/2020
प्रकाशन की तिथि /Date of Publication	26/02/2021

इस परीक्षण रिपोर्ट के चार भाग हैं, अर्थात् 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: 2, 3, 5 and 8-9 हाँ /Yes
		आविष्कारी कदम / Inventive step	दावे /Claims: 1, 4, 6 and 7 नहीं /No
		औद्योगिक उपयोगिता /Industrial Applicability	दावे /Claims: हाँ /Yes
		दावे /Claims: 1-9 नहीं /No	
2.	[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
		दावे /Claims: 1-9 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. / 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	उद्धरित दस्तावेज के प्रासंगिक दावे / Relevant claims of cited document	अभिकथित आविष्कार के दावे /Claims of alleged invention
1	D1: US20190070566A1	07/03/2019	Whole document		1-9
2	D2: US20190224628A1	25/07/2019	Whole document		1-9

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

कोई दस्तावेज़ उद्धृत नहीं है / No Document Cited

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, 4, 6 and 7) में दिये गए प्रकटन के पूर्वानुमान को ध्यान में रखते हुए, निम्नलिखित कारणों से दावा(वों) (1, 4, 6 and 7) में नवीनता की कमी है /

Claim(s) (1, 4, 6 and 7) lack(s) novelty, being anticipated in view of disclosure in the document cited above under reference D1 for the following reasons:

Without prejudice to the other objections, the subject matter of claims 1, 4, 6 and 7 are not novel under section 2(1) (j) in the light of Document D1.

Document D1 discloses regarding claim 1, An osmotic power generator system (160) comprising: a housing; a porous scalable membrane (membrane include a porous substrate; abstract)

having a first surface and a second surface placed within the housing (a porous substrate; and an active layer disposed upon the substrate; claim1)

the porous scalable membrane comprising: a first membrane selected from SiNx (Silicon nitride) or Cu (Copper) membrane (growing graphene on a substrate, such as a copper substrate; para [0068])

and a monolayer graphene membrane (monolayer sheets; para [0042])

mounted on a surface of the first membrane wherein the first membrane and the monolayer graphene membrane have one or more pores (the active layer having a plurality of open pores; para [0004])

a first chamber disposed on the first surface of the membrane and comprising a first electrode and a first electrolyte; a second chamber disposed on the second surface of the membrane and comprising a second electrode and a second electrolyte, and a load connected between the first electrode and the second electrode, wherein the system is configured to pass ions between the first and second surfaces of the porous membrane due to an osmotic gradient between the first and the second electrolytes to generate a difference in potential and an ionic current between the first and second electrodes (the active layer having a plurality of open pores that allow transport of some species through the membrane while restricting transport of other species through the membrane; para [0004])

Regarding claim 4, The system as claimed as in claim 1, wherein a thickness of the scalable membrane (160) is in a range of 16 to 20 μm (Graphene thickness 18 μm ; para [0130])

Regarding claims 6 and 7, The system as claimed as in claim 1, wherein the first electrolyte (112) is saltwater or seawater, wherein the second electrolyte (122) is freshwater or river water or saline water of predetermined concentration (the first group of species includes at least one salt or salt ion; claim 14)

Hence the subject matter of claims 1, 4, 6 and 7 does not contain any new additional feature in view of the cited document D1 under section 2(1) (j) of the Indian Patents Act 1970.

(2). आविष्कारी कदम / INVENTIVE STEP:

(I) ऊपर उद्धरित दस्तावेज़(जों) के संदर्भ D1-D2 में स्पष्ट अध्यापन(नों) को ध्यान में रखते हुए, निम्नलिखित कारणों से दावा(वों) (1-9) में

आविष्कारी कदम की कमी है

Claim(s) (1-9) lack(s) inventive step, being obvious in view of teaching (s) of cited document(s) above under reference D1-D2 for the following reasons:

The subject matter of claims 1-9 does not constitute an invention under section 2(1) (ja) of the Patents Act, 1970 (as amended) because it does not involve an inventive step in view of D1 with the help of D2.

Document D2 discloses a process for preparing a porous graphene-based film comprising providing a porous graphene oxide film comprising a multilayer array of graphene oxide sheets; and subjecting the graphene oxide film to a photo-reduction process whereby an oxygen-containing functional group situated (i) in a pore of a graphene oxide sheet and/or (ii) in between two or more graphene oxide sheets is reduced, to thereby form a porous graphene-based film comprising at least one reduced graphene oxide sheet, wherein the reduced graphene oxide sheet has a pore of different size and/or is separated from a sheet overlapping it by a different interlayer distance, relative to a corresponding graphene oxide sheet in the graphene oxide film prior to the photo-reduction (whole document)

The alleged invention lacks an inventive step in view of documents d1-d2 and with the common general knowledge since a person having ordinary skill in the art can arrive at the alleged invention by combining the teachings of d1-d2 with common general knowledge.

Hence, the subject matter of the invention as claimed in claims 1-9 lacks inventive step under section 2(1)(ja) of the Indian Patents Act 1970.

(3).पूकटन 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 vague and imprecise term 'spirit' in the description in the last paragraph implies that the subject-matter for which protection is sought may be different from that defined by the claims, thereby resulting in a lack of clarity of the claims when the description is used to interpret the claims. Such a statement should, therefore, be amended to remove this inconsistency.

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

(I) दावा(वे) 1-9 के संबंध में स्पष्ट रूप से परिभाषित नहीं हैं।

Claim(s) 1-9 are not clearly worded in respect of:

The subject matter of independent claims shall be drafted according to section 10(4) (c) to define the scope of the invention for which protection is claimed; therefore the subject matter of independent claims shall be redrafted in a two-part claim which defines the preamble of the claimed invention having the known features from the prior art in one part and the novel/inventive feature over prior art shall be characterized in the second part to satisfy the criteria of the novelty/inventive step under section 2(1) (j) of the Patents Act, 1970.

(5).अन्य आवश्यकताएँ /OTHERS REQUIREMENTS:

(I)

1. If any amendment is necessitated in the complete specification then it is required to identify (submission of marked copy) the amendments carried out and to indicate the portion (page no and line no) of the complete specification as filed on which these amendments are based on. Further, the pages wherever amendments are carried out need to be freshly typed on white pages and to be filed in duplicate.

2. Details regarding the search and/or examination report including claims of the application allowed, as referred to in Rule 12(3) of the Patent Rule, 2003, in respect of same or substantially the same invention filed in all the major Patent offices along with appropriate translation where applicable, should be submitted within a period of six months from the date of receipt of this communication as provided under section 8(2) of the Indian Patents Act.

3. All the submitted documents and forms have been presumed as originally signed by the authorized signatory under the provisions of the Patents Act, 1970. If not, submit the original signed copy of the same failing to which the document may not be considered filed.

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

आपत्तियाँ /Objections	टिप्पणी /Remarks
Form 13	Form 13 needs to file for the change of service address of the application for patent/complete specification/any document related thereto under section 39 of The Patents Act, 1970 and as per rule 18(1) of The patents Rules, 2003.
Power of Attorney (Whether GPA, SPA, Stamped, requisite fee etc.)	1. The application number should be mentioned on GPA. 2. GPA should be notarized.
Format of Specification (rule 13)	1. The date and sign of the authorized person should be mentioned at the end of the claims. 2. Paragraphs [0025], [0026] and [0039] of the complete specification are not relevant to the invention. The Irrelevant matter shall be excluded from complete specification according to rule 13(5) of the Patents Rules, 2003.
Format of Drawings	Drawings do not meet the requirement of rule 15(6) (iii) of the Patents Rules, 2003.
Other Deficiencies	1. At the time of filing complete specifications, three inventors are added. However, form-5 is not filed declaring new three inventors within the prescribed time limit under section 10(6) of the Patents Act, 1970 and under rule 13(6) of the Patents Rules, 2003. 2. Inventor NANDIGANA, Vishal V.R and NAYAK, Pramoda Kumar should authorize new three inventors for the application "OSMOTIC POWER GENERATION SYSTEM".

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
23 Aug 2019	70635	1-New Application For Patent With Provisional /Complete Specification

THE PATENT OFFICE

27 Aug 2019	71643	OTHERS(NON CASH)
27 Aug 2019	71643	OTHERS(NON CASH)
27 Aug 2019	71643	OTHERS(NON CASH)
27 Aug 2019	71643	OTHERS(NON CASH)
24 Aug 2020	74025	2-Complete After Provisional Specification - Form 2 Check For No. OF Pages & Claims
25 Aug 2020	74147	28(i)-Request For Examination After 18 months Publication - Form 18
26 Aug 2020	74929	Proof of Right
29 Aug 2020	75957	Proof of Right
25 Sep 2020	98589	49A. For preparation of certified copy of priority document and e-transmission through WIPO DAS.
28 Sep 2020	85013	OTHERS(NON CASH)

नियंत्रक का नाम /Name of the Controller: [Raman Kumar](#)

नियंत्रक स्थान /Controller Location: [Chennai](#)

टिप्पणी: परीक्षण रिपोर्ट का उत्तर दाखिल करने की अंतिम तिथि / Note: Last date for filing response to the Examination Report:
03/09/2021