* **IN THE HIGH COURT OF DELHI AT NEW DELHI**

% ***Judgment Reserved on: 11.07.2025***
Judgment pronounced on: 11.09.2025

\+ **C.A.(COMM.IPD-PAT) 13/2024 with I.A. 8216/2024**

SAINT GOBAIN GLASS FRANCE .....Appellant
Through: Mr. Hemant Singh, Ms. Mamta Rani Jha, Mr. Siddhant Sharma, Mr. Abhay Tandon and Mr. Shreyansh Gupta, Advocates.

versus

ASSISTANT CONTROLLER OF PATENTS AND DESIGNS & ANR. .....Respondents
Through: Mr. Nishant Gautam with Mr. Vardhman Kaushik, Mr. Shaurya Mani Pandey and Mr. Prithvi Raj Dey, Advocates for R-1.
Mr. Ranjan Narula, Advocate for R-2.

CORAM:
HON'BLE MR. JUSTICE AMIT BANSAL

JUDGMENT

AMIT BANSAL, J.

1. The present appeal has been filed under Section 117A of the Patents Act, 1970 (hereinafter 'Act') and is directed against the order dated 5th January, 2024 (hereinafter 'impugned order') passed by the Assistant Controller of Patents and Designs (hereinafter 'Controller'), whereby the Indian Patent Application No. 201717045317 titled *'Material comprising a stack of thin layers'* (hereinafter 'subject patent application') has been refused.

2. The matter came up for the first time before the predecessor Bench of this Court on 11th April 2024. On the said date, the predecessor Bench issued notice in the appeal and directed the Controller that during the pendency of the appeal, the status of the subject patent application shall be reflected as 'pending'.

3. Oral submissions in the matter were heard on 11th December 2024, 17th January 2025, 17th March 2025, 21st April 2025, and 4th July 2025. *Vide* order dated 11th July 2025, the judgment was reserved in the appeal.

BRIEF FACTS

4. Brief facts necessary for deciding the present appeal are set out below:

4.1. The appellant, Saint Gobain Glass France, is an entity based in France and is engaged in manufacturing, research, and development of a wide range of glass products for various applications, including architectural glass for buildings, automotive glass for vehicles, and glass solutions for industries such as aerospace, solar energy, and interior design.

4.2. The subject patent application was filed as a national phase application under the Patent Cooperation Treaty (hereinafter 'PCT') claiming priority from the French application no.FR1556502 dated 9th July 2015. The bibliographic details of the application are given below:

PCT Application No.	PCT/FR2016/051677
Priority Application No. FR	1556502
Priority Date	09.07.2015
Patent Application No.	201717045317
National Phase Filing Date	18.12.2017
Request for Examination	18.12.2017

Publication Date (under Section 11A)	19.01.2018
First Examination Report ('FER')	25.04.2019
Pre-grant Opposition ('PGO')	20.08.2019
Response to FER	11.10.2019
Reply statement to PGO	23.06.2023

4.3. A request for examination of the said application was filed by the appellant on 18th December 2017, and the subject application was published under Section 11A of the Act on 19th January 2018.

4.4. A First Examination Report (hereinafter 'FER') was issued by the Controller on 25th April, 2019. The following substantive objections were communicated to the appellant *via* the said FER:

a. Lack of novelty and inventive step under Section 2(1)(j) and 2(1)(ja) of the Act;
b. Non patentable under Section 3(d) of the Act;
c. Lack of clarity under Section 10(4)(c) and 10(5) of the Act.

4.5. On 20th August 2019, a pre-grant opposition was filed by the respondent no.2 under Section 25 of the Act.

4.6. Pursuant to the objections raised in the FER, a detailed response along with amended claims was submitted by the appellant *vide* letter dated 11th October 2019, wherein the appellant removed the optional lower blocking layer (LBL) from the independent Claim 1 and added it as a dependent Claim 5 in the subject patent application.

4.7. On 23rd March 2023, notice was issued by the Controller in the pre-grant opposition filed by the respondent no.2 and the first hearing notice was issued.

4.8. On 23rd June 2023, the Reply to the pre-grant opposition was filed by the appellant.

4.9. On 7th September 2023, the respondent no.2 shared additional prior art with the Controller and the appellant.

4.10. On 11th September 2023, a hearing notice was issued, and the hearing was scheduled for 25th September 2023. The following objections were communicated to the appellant *vide* the said hearing notice:

i. Lack of novelty and inventive step under Section 2(1)(j) and 2(1)(ja) of the Act;

ii. Non patentable under Section 3(d) of the Act;

iii. Lack of clarity under Section 10(4)(c) and 10(5) of the Act.

iv. Voluntary amendments are beyond the scope of original claims and are not allowable under Section 59 of the Act.

4.11. On 9th October 2023, written submissions in respect of the hearing held on 25th September 2023, along with amended specifications and an affidavit of expert Mr. Uditendu Mukhopadhyay, were filed by the appellant before the Patent Office.

4.12. On 10th October 2023, written submissions were filed by the respondent no.2 in respect of the hearing held on 25th September 2023.

4.13. On 11th October 2023, another hearing notice was issued by the Controller, reiterating the objections of the previous hearing notice, along with raising the following objection.

> "*Applicant has submitted an amended set of claims along with a new affidavit (Annexure-1) from the expert Mr. Uditendu Mukhopadhyay, therefore this hearing is offered to discussed with both the party.*"

4.14. On 24th October 2023, a fresh hearing notice was issued, and a hearing

in the pre-grant opposition and under Section 14 of the Act was scheduled on 15th December 2023.

4.15. On 13th December 2023, respondent no.2 filed additional prior arts, two days before the hearing dated 15th December 2023. On 15th December 2023, a hearing was held in the pre-grant opposition as well as under Section 14 of the Act.

5. The impugned order was passed by the Controller on 5th January 2024, refusing the subject patent application on the ground that the claims of the subject patent application lack inventive step as required under Section 2(1)(ja) of the Act and under Section 25(1) (e) of the Act.

THE IMPUGNED ORDER

6. To analyse the aspect of inventive step in the subject patent application, the Controller relied on the judgment of the Supreme Court in ***Bishwanath Prasad Radhey Shyam* v. *Hindustan Metal Industries***[1], and the judgment of the Division Bench of this Court in ***F. Hoffmann-La Roche Ltd.* v. *Cipla Ltd*[2].**

7. In ***F. Hoffmann-La Roche Ltd* v. *Cipla Ltd*[3],** Division Bench of this Court has propounded a five-step test for determining whether an invention is obvious or lacks inventive step.

7.1. For **Step 1,** *i.e.,* '*To identify an ordinary person skilled in the art',* the Controller determined that a person skilled in the art for the purposes of the present subject patent application would be a person conversant in glass construction and glass manufacturing.

[1] (1979) 2 SCC 511
[2] 2015 SCC OnLine Del 13619
[3] id.

7.2. For **Step 2,** '*Identification of the relevant common general knowledge of that person at the priority date*', the Controller identified the following relevant prior arts, which existed prior to the priority date of the subject patent application:

i. **Document A:** WO 2014/164674
ii. **Document B:** WO2014177798
iii. **Document D2:** WO2011062574A1
iv. **Document:** 3022/KOLNP/2010
v. **Document:** 3417/KOLNP/2010

7.3. For **Step 3**, '*Identification of the inventive concept of the claim(s) in question*', the Controller, upon analysing the subject patent application, concluded that the inventive concept resides in:

i. The use of one silver-based functional metal layer along with specific characterised layers in Claim 1 to achieve a stack exhibiting neutral transmission colours.
ii. The attainment of a glossy silver appearance in external reflection without impairing the solar performance, and in particular without increasing the solar factor, while ensuring that the light reflection at the external side is higher than 30%.

7.4. For **Step 4**, '*Identification of what, if any, differences exist between the matter cited as forming part of the "state of the art" and the inventive concept of the claim(s)*', the Controller analysed the prior arts in the following manner:

i. **Document A:** Document A discloses three metallic layers comprising two continuous layers and one subcritical discontinuous layer, whereas the invention claimed in the subject patent application employs only one silver-based functional metal layer.

ii. **Document B** –Document B discloses the same sequence of layers and overlapping thicknesses of the Nickel /Chromium layer and dielectric layer, aiming to improve the aesthetic appearance along with internal and external reflection. It teaches the same sequence as in the present invention, *i.e.,* a silver layer sandwiched between the lower dielectric layer and the upper blocking layer, with multiples of the same stack. However, Document B differs from the invention claimed in the subject patent application as it shows a triple silver coating with all three silver functional layers being mandatory, and further discloses a maximum external light reflection value of only 23.7%, whereas the subject invention achieves a light reflection at the external side exceeding 30%.

iii. **Document D2:** Document D2 discloses coated articles having a bronze glass appearance, with a light reflection on the external side of less than 28%, preferably between 22% and 26%. It also suggests that a combination of reflection greater than 20% and transmission greater than 35% may be achieved for monolithic windows and/or insulating glass ('IG') units. In D2, the coated article is designed such that the monolithic coated article or IG units exhibit blue transmissive colouration. In contrast, the invention in the subject patent application provides for a glossy silver appearance in external reflection, with the light reflection on the external side exceeding 30%.

iv. **Document 3022/KOLNP/2010**: Document 3022/KOLNP/2010 discloses a substrate with a lower blocking layer intended to

achieve a light reflection in the range of 30% to 50%, but with different characterising features from the subject patent application.

v. **Document 3417/KOLNP/2010**: Document 3417/KOLNP/2010 discloses a monolayer of silver sandwiched between antireflective coating layers. It further teaches that the thickness of the dielectric layer is in the range of 5 to 25 nm.

7.5 For **Step 5,** '*Viewed without any knowledge of the alleged invention as claimed, do those differences constitute steps which would have been obvious to the person skilled in the art or do they require any degree of inventive ingenuity?*', the Controller analysed the subject patent application and held that the subject patent application lacks inventive step. The Controller has given the following reasons to arrive at the conclusion:

i. Although the invention was claimed to achieve improved technical effects (neutral transmission colours, glossy silver reflection, and maintained solar performance), the Complete Specification does not contain supporting data demonstrating such results without the lower blocking layer.

ii. Experimental data in Tables 2 and 3 do not show any significant technical advancement over comparative examples, particularly with respect to solar factor, light transmission, light reflection, or colour values.

iii. Even the expert affidavit filed by the appellant's expert lacked crucial data such as values for solar factor (g), energy transmission of incident solar radiation (ET%) and energy reflection of incident solar radiation measured on the external side (ER_{ext}), and failed to establish the claimed technical advancement over prior arts.

iv. Documents A, B, and D2 disclose similar stack arrangements (silver sandwiched between dielectric and blocking layers) and optimisation of thickness to achieve reflective/solar properties. D2 further teaches optimisation of thickness to achieve colour variations, making it obvious to arrive at silver colour without inventive ingenuity.

v. The appellant's own prior applications (3022/KOLNP/2010 and 3417/KOLNP/2010) already disclose stacks achieving transmission below 60% and reflection of at least 30% or 50% with mono-silver layers, *albeit* with different characterisations.

8. Based on the above reasoning, the Controller held that the subject invention failed to meet the requirement of inventive step under Section 2(1)(ja) of the Act. The Controller concluded that the claimed invention was obvious to a skilled person, as the key elements and results claimed in the subject patent application could be achieved by routine thickness adjustment and optimisation.

SUBMISSIONS ON BEHALF OF THE PARTIES

SUBMISSIONS ON BEHALF OF APPELLANT

9. Mr. Hemant Singh, Advocate appearing on behalf of the appellant has made the following submissions:

9.1. The Controller has failed to appreciate the claimed invention as well as the technical advancement thereof over the cited prior art documents.

9.2. The Controller has erred in applying the well-settled test for determining inventive step and obviousness. The Controller has 'cherry-picked' various constituents from the cited prior art documents and applied hindsight reconstruction, and wrongly arrived at the conclusion that the

subject invention lacks an inventive step. Such hindsight reconstruction and mosaicing of prior arts is impermissible.

9.3. The Controller has failed to provide any cogent reason to justify the mosaicing of cited prior art documents. The impugned order does not disclose any reason as to what teaching, suggestion, or motivation would have prompted a hypothetical 'person skilled in the art' to combine or link the cited prior art documents to arrive at the claimed invention. Consequently, the impugned order is not a well-reasoned order and is liable to be set aside for failing to correctly apply the well-settled test of inventive step.

9.4. Controller has erred in construing Claim 1 of the subject application in isolation, without considering the exemplified embodiments provided in the Complete Specification and the advantages provided therein.

9.5. Controller has failed to appreciate the experimental data provided in the Complete Specification of the subject patent application and the data provided in Mr. Mukopadhyay's affidavit dated 9th October 2023.

9.6. Controller has also erred in rejecting the subject patent application on the ground that the results of the invention have not been disclosed in the Complete Specification.

9.7. In the impugned order, the Controller has observed that "*there is no result provided in the Complete Specification which reflects the exact value of light reflection at the external side higher than 30% without using LB layer…,*", the said observation is self-contradictory, as the Controller, in the same breath, acknowledges that there is no insufficiency of disclosure in the specification of the subject patent application.

9.8. The data furnished in Tables 2 and 3 of the Complete Specification, which compares the subject invention with prior existing materials, is not

expressly mandated under Section 10 of the Act. Section 10 merely requires the applicant to provide data necessary to demonstrate the working of the invention claimed in the subject patent application.

SUBMISSIONS ON BEHALF OF RESPONDENT NO.1

10. Mr. Nishant Gautam, CGSC appearing on behalf of the respondent no.1 has made the following submissions:

10.1. The refusal of the subject patent application is based on a thorough examination of the prior art documents, the claimed invention, and the evidence presented during the proceedings.

10.2. The refusal of the subject patent application was not on the ground of insufficiency of disclosure, rather, the refusal was based on 'lack of inventive step' as the claimed invention was found to be obvious to a person skilled in the art.

10.3. To address the expert affidavit of the appellant, the respondent no.2 also filed two additional documents for consideration. The Controller gave sufficient time to both parties to rebut the same, and all documents submitted by them were duly taken on record for consideration before passing the impugned order.

10.4. Any person skilled in the art, equipped with the knowledge of prior art and existing technical literature, would be motivated to modify and improve the appellant's claimed invention without exercising any inventive skill. The claimed subject matter involves optimisation of known parameters, such as layer thicknesses and material combinations, which are described in the prior art documents.

10.5. The appellant's reliance on the grant of patents for corresponding applications in foreign jurisdictions, including the European Patent Office

(EPO), is misplaced. Patent rights are territorial in nature, and their grant in one jurisdiction does not bind the Controller in any way whatsoever.

SUBMISSIONS ON BEHALF OF RESPONDENT NO.2

11. Mr. Ranjan Narula, Advocate appearing on behalf of the respondent no.2 has made the following submissions:

11.1. The Controller, after examining all the cited prior art and affording both parties two detailed hearings, has passed a well-reasoned order refusing the patent application. The Controller has correctly applied the five-step framework for assessing inventive step as laid down in ***F. Hoffmann-La Roche Ltd*** **v.** ***Cipla Ltd***[4].

11.2. The combined teachings of the prior art documents clearly disclose the same stack in terms of both positioning and thickness. Once the stack is known, its properties would also be deemed to be known.

11.3. The fundamental coating stack and the knowledge regarding the positioning of layers, such as a silver layer sandwiched between an upper dielectric layer and a lower dielectric layer, or a silver layer positioned between a dielectric layer and a blocking layer in various configurations, have long been known and are specifically disclosed in the cited prior art documents. Consequently, it would be obvious to a person skilled in the art to adjust the layer thicknesses to obtain a desired property.

11.4. The appellant already holds several patents and pending applications relating to similar stacks, which indicates its intention to evergreen the protection in respect of the stack.

[4] id.

ANALYSIS AND FINDINGS

12. I have heard counsel for the parties and perused material on record.

13. I shall now proceed to examine the subject patent application in order to assess whether the claimed invention satisfies the requirement of inventive step as prescribed under Section 2(1)(ja)[5] of the Act.

14. In ***Novartis AG* v. *Union of India***[6], the Supreme Court of India analysed Section 2(1)(ja) of the Act and prescribed a three-step test for assessing inventive step in an invention. The relevant paragraph of the said judgment is reproduced below:

> "***76.*** *On a combined reading of clauses (j), (ac) and (ja) of Section 2(1), in order to qualify as "invention", a product must, therefore, satisfy the following tests:*
>
> *(i) It must be "new";*
>
> *(ii) It must be "capable of being made or used in an industry";*
>
> ***(iii) It must come into being as a result of an invention which has a feature that:***
>
> ***(a) entails technical advance over existing knowledge;***
>
> ***or***
>
> ***(b) has an economic significance;***
>
> ***and***
>
> ***(c) makes the invention not obvious to a person skilled in the art.***"
>
> [Emphasis supplied]

[5] Patents Act, 1970, §2(1)(ja) –"inventive step" means a feature of an invention that involves technical advance as compared to the existing knowledge or having economic significance or both and that makes the invention not obvious to a person skilled in the art;

[6] (2013) 6 SCC 1

FEATURES OF THE INVENTION

15. The prerequisite of the three-step test extracted above is to identify the features of the invention. In order to determine the same, I shall first analyse the Complete Specification of the subject patent application.

16. In the section titled '***Field of the Invention***' of the Complete Specification of the subject patent application, the appellant has described the claimed invention as follows:

> "*The invention relates to a material and to a process for obtaining a material, such as* ***a glazing, comprising a transparent substrate coated with a stack of thin layers comprising a silver-based functional layer.***"

17. In the section titled '***Background of the Invention***' of the Complete Specification of the subject patent application, the appellant has identified the core problem in the prior art, which is given below:

> **"***In countries where the levels of exposure to sunlight are high, there exists a strong demand for glazings exhibiting a light transmission of the order of 40% and solar factor values of less than 0.33, preferably of less than 0.31. The light transmission is then sufficiently low to eliminate dazzle and sufficiently high for the decrease in the amount of light penetrating inside the space delimited by said glazing not to make it necessary to use artificial light.*"

18. The invention in the subject patent application claims to solve the problem in the prior art by providing a glass substrate with a shiny silver appearance in reflection, neutral colours in transmission, and a high external reflection (in particular, greater than 30%), which can be achieved by employing a material comprising a transparent substrate coated with a specific stack of thin layers.

19. The said inventive concept of the subject application is covered in the claims of the subject patent application, which have been amended multiple

times during the prosecution. Nevertheless, for the sake of the present analysis, I shall consider the latest amended claims filed by the appellant subsequent to the hearing held on 15th December 2023. The amended Claims filed by the appellant are reproduced below:

> "***We Claim:***
> *1. A material comprising a transparent substrate coated with a stack of thin layers comprising just one silver-based functional metal layer, the stack comprising, starting from the substrate:*
>
> *- a dielectric coating comprising at least one dielectric layer,*
>
> *- a silver-based functional metal layer,*
>
> *- an upper blocking layer located above and in contact with the silver-based functional metal layer,*
>
> ***characterized in that:***
>
> ***- the thickness of the dielectric coating located below the silver-based functional metal layer is in the range of 5 nm to less than 30 nm,***
>
> ***- the upper blocking layer is a layer based on nickel or on chromium or on both and exhibits a thickness in the range of 2.1 nm to 8.0 nm,***
>
> ***- the thickness of the upper blocking layer is greater than or equal to the thickness of the lower blocking layer, if such a layer is present,***
>
> ***- the sum of the thicknesses of the blocking layer or layers chosen from metal layers based on nickel or on chromium or on both located directly in contact with the silver-based functional layer is between 3.0 and 10.0 nm,***
>
> ***- the material presents a light reflection at the external side higher than 30%.***
>
> *2. The material as claimed in claim 1, wherein the silver-based functional metal layer exhibits a thickness between 12 and 20 nm.*
>
> *3. The material as claimed in either one of the preceding claims, wherein the blocking layers based on nickel or on chromium or on both, comprise*

at least 95% by weight of nickel or of chromium or of both, with respect to the total weight of the blocking layer.

4. The material as claimed in any one of the preceding claims, wherein the upper blocking layer exhibits a thickness of between 2.1 and 6.0 nm.

5. The material as claimed in claim 1, wherein the stack comprises a lower blocking layer located below and in contact with the silver-based functional metal layer.

6. The material as claimed in the preceding claim, wherein the lower blocking layer exhibits a thickness of between 0.5 and 2.5 nm.

7. The material as claimed in any one of the preceding claims, wherein the thickness of the dielectric coating located below the silver-based functional metal layer is in the range of 5nm to less than 20 nm.

8. The material as claimed in any one of the preceding claims, wherein the dielectric coating located below or above the silver-based functional metal layer comprises at least one dielectric layer based on a nitride or on an oxynitride of silicon or of aluminum or of both.

9. The material as claimed in any one of the preceding claims, wherein the dielectric coating located below the silver-based functional metal layer comprises just one layer consisting of a nitride or of an oxynitride of aluminum or of silicon or of both, with a thickness of between 10 and 30 nm.

10. The material as claimed in any one of the preceding claims, wherein the stack comprises a protective layer.

11. The material as claimed in any one of the preceding claims, such that the substrate is made of glass, in particular soda-lime-silica glass, or of a polymeric organic substance.

12. The material as claimed in any one of the preceding claims, wherein it exhibits a light transmission between 35% and 50%or a light reflection on the exterior side of greater than 35% or both.

13. A process for obtaining a material as claimed in any one of the preceding claims, in which the layers of the stack are deposited by magnetron cathode sputtering."

20. From the above-extracted claims, it is clear that the invention claimed in the subject patent application has several known features, including a transparent substrate, a dielectric layer, a silver-based functional layer, and a blocking layer structure. The novel and distinguishing features, which are specified after the term '*characterized in that*', are as follows:

i. An upper blocking layer (UBL) made of either nickel or chromium or both, with a thickness ranging between 2.1 nm and 8.0 nm.

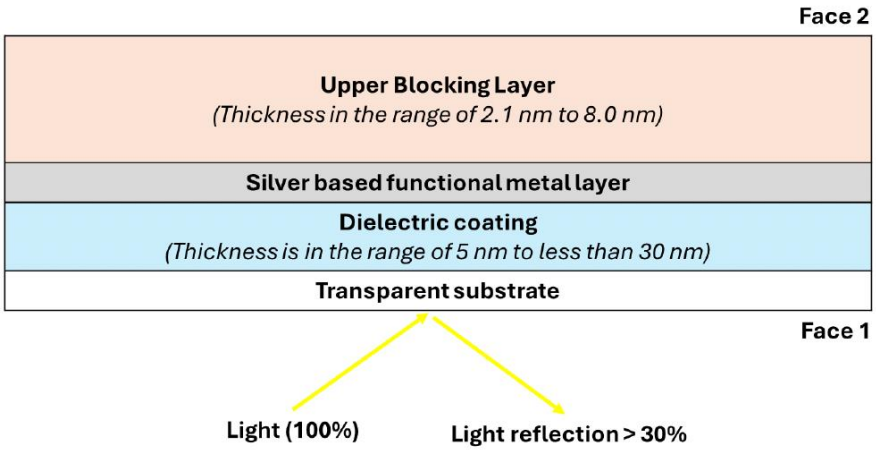
ii. A dielectric coating (DC) with at least one dielectric layer with a thickness ranging from 5 nm to 30 nm and positioned below the silver functional layer.

iii. The **thickness of the upper blocking layer (UBL) is greater than or equal to the thickness of the lower blocking layer (LBL)**, if such a layer is present.

iv. The blocking layer(s) (Nickel and/or Chromium based) located directly in contact with the silver-based functional layer collectively exhibit a thickness between 3.0 nm and 10.0 nm,

v. The material exhibits a light reflection of more than 30% at the external side (preferably greater than 35%).

21. The features of the independent Claim 1 have been illustrated by the appellant in the appeal paper book in the following manner:



22. Since the appellant amended its claims and the lower blocking layer (LBL) was removed from the independent Claim 1 and added as the dependent Claim 5, the feature (iii) cannot be considered as an essential element of the subject patent application, as there is still a reference to the lower blocking layer (LBL).

ANALYSIS OF TECHNICAL ADVANCEMENT

23. Now I shall assess whether the features of the claimed invention show any technical advancement over existing knowledge.

24. Before going to the merits, it is to be noted that one of the grounds taken by the appellant for assailing the Controller's order is that the Controller has erred in rejecting the subject application on the ground that the evidentiary data provided by the appellant in the Complete Specification of the subject patent application is insufficient to show technical advancement over the existing knowledge.

25. The test discussed by the Supreme Court in ***Novartis AG* v. *Union of India***[7] and a plain reading of Section 2(1)(ja) of the Act clearly shows that it

[7] id.

is essential for an invention to either be technically advanced in comparison to the existing knowledge or have economic significance to fulfil the requirement of inventive step. The present case is concerned with the technical advancement of the claimed invention over the prior art. On the facts of this case, such technical advancement is best demonstrated and can credibly be established through objective comparative experimental data *vis-à-vis* existing knowledge.

26. In this regard, a reference may be made to the judgment of the High Court of Madras in ***Ollos Biotech Private Limited*** **v.** ***Omega Ecotech Products India Limited***[8], wherein the Court allowed a petition for revocation of a patent as the patentee was not able to show the technical advancement of the claimed invention over the prior knowledge. The relevant extract is set out below:

> "*17.* ***The first respondent asserts that the use of trapezoidal-shaped containers with a plurality of perforations constitutes technical advancement and makes the invention non-obvious.*** *The use of containers wherein the bottom end of the container has a smaller diameter than the top end is also part of common general knowledge in as much pots that are commonly used in composting in households contain the same feature.* ***Does the trapezoidal shape with a plurality of perforations represent a technical advance? On closely examining the complete specification of the invention, at internal page 11 thereof, the first respondent recites as under in respect of the invention:***
>
> > *"Provides a hassle free, convenient and rapid composting of organic material, which permits us to do the composting in a domestic residential environment."*
>
> ***However, I find no comparative data therein to support the assertion that the use of containers with trapezoidal shape results in faster composting or that it is otherwise beneficial. As regards the use of a plurality of perforations, it would be obvious from common general knowledge and,***

[8] MANU/TN/1598/2024

> ***in any case, the complete specification lacks experimental data to support an inference of technical advancement on that count.*** *I next examine the use of dividers between the containers. The invention consists of dividers with a hole in the centre between each container. As regards these separators also, the complete specification does not contain recitals or disclosures with regard to the benefits accruing therefrom.*"
>
> [Emphasis supplied]

27. Accordingly, I proceed to analyse the subject patent application in light of the data provided in the Complete Specification to examine whether the appellant was able to establish technical advancement over the existing knowledge.

28. In the section titled '***Examples'*** of the Complete Specification of the subject patent application, the appellant has provided examples of different embodiments of the invention claimed in the subject patent application in comparison with the existing materials. The same are given in Tables 2 and 3 of the Complete Specification, which are reproduced below:

> "***Table 2 lists the materials and the physical thicknesses in nanometers (unless otherwise indicated) of each layer or coating which forms the stacks as a function of their positions with regard to the substrate carrying the stack (final line at the bottom of the table).*** *The thicknesses given in table 1 correspond to the thicknesses before tempering. The substrates undergo a heat tempering under the following conditions: heat treatment at a temperature of between 600 and 750°C for 5 to 15 minutes.*

Tab. 2		Comparatives				Invention		
Material		Cmp.1	Cmp.2	Cmp.3	Cmp.4	Mat.1	Mat.2	Mat.3
DC	TiO_2	2	2	2	2	2	2	2
	Si_3N_4	50.1	47.5	47.5	47.5	47.5	47	47.5
Upper BL	NiCr	1.7	1.0	2.0	2.5	3.9	4	2.5
FL	Ag	18.8	16	16	16	16	16	16
Lower BL	NiCr	3.6	3.0	3.0	3.9	1.0	1.0	2.5
DC	Si_3N_4	31.3	14.2	14.2	14.2	14.2	15.1	14.2
Substrate (mm)	Glass	6	6	6	6	6	6	6
Upper BL/Lower BL	-	0.5	0.3	0.7	0.6	3.9	4	1.0

BL: Blocking layer; FL: Functional layer; DC: Dielectric coating

II. Energy performance results of the glazings

The main optical characteristics measured in a double glazing exhibiting a 6/12/6 structure: 6-mm glass/12-mm air-filled interlayer space/6-mm glass, the stack being positioned on face 2 (the face 1 of the glazing being the outermost face of the glazing, as usual), are listed in table 3.

In this table:

- LT indicates: the light transmission in the visible region in %, measured according to the illuminant D65 at 2° Observer;

- LRext indicates: the light reflection in the visible region in %, measured according to the illuminant D65 at 2° Observer on the side of the outermost face, the face 1;

- LRint indicates: the light reflection in the visible region in %, measured according to the illuminant D65 at 2° Observer on the side of the innermost face, the face 2 in the case of a single glazing;

- ET indicates: the energy transmission corresponding to the ratio of the transmitted energy flow to the incident energy flow in %, measured for wavelengths of between 0.3 and 2.5 µm according to the illuminant D65 at 2° Observer;

- ERext indicates: the energy reflection corresponding to the ratio of the reflected energy flow to the incident energy flow in %, measured for wavelengths of between 0.3 and 2.5 µm according to the illuminant D65 at 2° Observer on the side of the outermost face, the face 1;

- L*T, a*T and b*T indicate the colors in transmission L*, a* and b* in the L*a*b* system, measured according to the illuminant D65 at 2°

Observer and measured perpendicularly to the glazing;

- L*Rext, a*Rext and b*Rext indicate the colors in reflection a* and b* in the L*a*b* system, measured according to the illuminant D65 at 2° Observer on the side of the outermost face and measured thus perpendicularly to the glazing.

Tab. 3	Target val.	Cmp.1	Cmp.2	Cmp.3	Cmp.4	Mat.1	Mat.3
g	< 0.31	0.31	**0.33**	0.31	0.26	0.30	0.31
LT%	≈ 40	44	43.3	41.0	36.2	40.2	40.7
LRext%	> 33	**31**	36.5	35.0	38.5	38.4	35.8
LRint%	-	22	18.6	19.9	18.2	17.8	19.3
ET%	-	25	27	25.3	22.6	24.9	25.2
ERext%	-	36	38.9	37.2	39.1	39.8	37.9
- L*T	-	72.2	71.8	70.2	66.6	69.5	69.9
- a*T	-5 to 0	-4.40	-4.70	-5.0	-4.8	-4.7	-4.9
- b*T	-3 to 0	**+1.0**	-0.60	**0.3**	-0.6	-1.1	0.0
- L*Rext	-	63.0	67.0	65.7	68.6	68.5	66.4
- a*Rext	-2 to -1.5	-1.40	-1.6	-2.0	-2.1	-1.8	-1.9
- b*Rext	-6 to -5	-2.4	-6.3	-5.6	-4.2	-5.5	-5.5
BL1 ≥ BL2	yes	no	no	no	no	yes	no
BL1 + BL2	4.5-6.0	5.3	4.0	5.0	6.4	4.9	5.0

,,

[Emphasis Supplied]

29. In Tables 2 and 3 above, the appellant has provided data to compare the parameters of the materials exemplified in the claimed invention with those of the comparative examples. The data, according to the appellant, highlights variations in terms of solar factor values (g), light transmission (LT%), and light reflection (LR_{ext}%), which were relied upon to demonstrate the alleged technical advancement of the claimed invention over the prior art.

30. An analysis of the results shown in Table 3 would illustrate the following:

i. The solar factor value (g) gives the target value of '< 0.31'. Both comparative materials (Cmp.1 and Cmp.3) have the solar factor value of '0.31', like Mat.3. Only Mat.1 has a value of '0.30'.

ii. The light transmission (LT%) target value is shown as '≈ 40'. Once again, Cmp.3 has a value of '41.0', and Mat.1 and Mat.3 have a value of '40.2' and '40.7', respectively.

iii. For light reflection (LR_{ext}%), the target to be achieved is '>33'. Once again, Cmp.3 meet this target, and the values for Cmp.3 and Mat.3 are very similar i.e., 35.0 and 35.8, respectively.

iv. Similarly, in respect of colour values in light reflection from the external side (a^*R_{ext} and b^*R_{ext}), Cmp.3 meets that target value.

31. In my considered view, the comparison table itself indicates that the claimed invention does not significantly improve over at least one comparative material (Cmp.3), which already achieved near-identical values.

32. The analysis given by the appellant for the data given in Table 3 of the Complete Specification of the subject application is that the subject invention shows technical advancement over the comparative examples. According to the appellant, the claimed invention achieves all the relevant properties cumulatively compared to the comparative examples, which only partially achieve these properties. The relevant paragraph from the Complete Specification is set out below:

> ***"According to the invention, it is possible to produce a glazing comprising a stack comprising a functional metal layer which exhibits a light transmission of approximately 40%, a high external light reflection and a low solar factor, and also an excellent compromise for the colors in transmission and in external reflection.***
> *The use of the material in a double glazing fitted so that the substrate corresponding to the exterior wall comprises the stack on face 2 contributes to these better results being obtained.*
> *The examples according to the invention all exhibit a pleasant and subdued coloration in transmission, preferably within the range of the blues or blue-greens.*

The comparative examples do not exhibit solar factor values of less than or equal to 0.31 and/or an external reflection of greater than 35 and/or a shiny silver appearance in external reflection and/or neutral colors in transmission.
The glazings according to the invention simultaneously exhibit a solar factor of less than or equal to 0.31 and/or an external reflection at least of greater than 35%. These glazings also have colors in transmission which are more neutral and a shiny silver appearance in external reflection."

[Emphasis Supplied]

33. According to the Controller, the data provided in the Complete Specification was insufficient to the extent that it included the lower blocking layer (LBL) in Table 3, which was contrary to the amended independent Claim 1 of the subject patent application. In my considered view, this omission was of material significance, since the claim as amended excluded the lower blocking layer, and thus supporting data without such a layer became critical to establish if the claimed invention satisfied the requirement of inventive step. Therefore, to overcome this aspect, the appellant filed an affidavit of an expert, Mr. Mukhopadhyay.

34. Table 2, as given in the expert affidavit, shows the properties achieved by the invention without the lower blocking layer (LBL). For ease of reference, the same is reproduced below:

Table 2	Mat. A	Mat. B
LT%	40.1	40.1
LRext%	41.1	40.7
a*ext	-0.3	-0.1
b*ext	-4.7	-4.5

35. A perusal of the expert affidavit of Mr. Mukhopadhyay filed by the

appellant provides data only for light transmission (LT%), light reflection at the exterior side (LR_{ext}%), and shiny silver external reflection (a*ext and b*ext), which corresponds to a*R_{ext} and b*R_{ext} of Table 3 of the Complete Specification as clarified by the affidavit. However, the results corresponding to other performance parameters such as solar factor (g), energy transmission (ET%), energy reflection (ER_{ext}%), and several other key values that form part of the claimed invention's desired set of properties as provided in Table 3 of the Complete Specification, are absent from the affidavit. Upon considering the said affidavit along with the complete specification, I am of the view that the absence of these key values weakens the probative value of the affidavit. Without such data, the Court cannot assess whether the invention, as claimed, delivers the 'balanced performance' across all parameters that the appellant had emphasised in the Complete Specification to establish a technical advance under Section 2(1)(ja) of the Act.

36. It is the contention of the appellant that only the aforesaid parameters provided in the expert affidavit are relevant for the purposes of the claimed invention. This stand taken by the appellant is in contradiction with the Complete Specification of the subject patent application, where the appellant has shown technical advancement of the claimed invention as its capability to exhibit a cumulative effect of solar factor (g), neutral colours in transmission (L*T, a*T and b*T), along with the properties given in the affidavit. Therefore, this submission is unsustainable, and it creates doubt regarding the technical advancement of the invention claimed in the subject application. This inconsistency undermines the appellant's own case, since it selectively narrows the relevant parameters *post-facto*, contrary to the broader technical effects originally claimed.

37. Even if the contention of the appellant that only the parameters given in the affidavit are relevant is accepted, it is clear that the comparative examples, specifically comparative example 3 (Cmp.3), fall within the target value as per Table 3 of the Complete Specification. To illustrate this, the data given in Table 2 in the expert affidavit, juxtaposed with Table 3 of the Complete Specification, is tabulated below:

	Target Values as per Complete Specification	**Comparative Examples as per Complete Specification**				**Subject Invention as per Expert Affidavit**	
		Cmp.1	**Cmp.2**	**Cmp.3**	**Cmp.4**	**Mat. A**	**Mat. B**
LT%	≈ 40	44	43.3	**41.0**	36.2	40.1	40.1
LRext%	>33	31	36.5	**35.0**	38.5	41.1	40.7
a*ext	-2 to -1.5	-1.40	-1.6	**-2.0**	-2.1	-0.3	-0.1
b*ext	-6 to -5	-2.4	-6.3	**-5.6**	-4.2	-4.7	-4.5

38. It is evident from the table above that comparative example 3 (Cmp.3) fulfils all the target values as given in Table 3 of the Complete specification. Notably, the parameters for shiny silver external reflection (a*ext and b*ext) of Materials A and B are not within the target values given in Table 3 of the Complete Specification of the subject patent application.

39. Further, the appellant's expert, in his affidavit, has conveniently

changed the target values of the shiny silver reflection a*R_{ext} to '-5 to 0' and b*R_{ext} to '-7 to 0', which is at variance with the target values given in the Complete Specification of the subject patent application i.e., '-2 to -1.5' and '-6 to -5' respectively.

40. In view of the discussion above, in my considered view, the appellant has failed to provide the data required under Section 2(1)(ja) of the Act, showing the technical advancement of the invention claimed in the subject patent application. I would also highlight that the insufficiency of supporting parameters in the affidavit, the failure of Materials A and B to fall within the original target ranges, and the shifting of those target values collectively undermine the appellant's case on inventive step. In conclusion, the comparative data demonstrate that the alleged invention does not achieve any material improvement over the prior art. Comparative Example 3 of Table 3 of Complete Specification already meets the very performance parameters relied upon by the appellant, whereas the appellant's own materials fail to satisfy the original specification's target ranges. The subsequent changing of target values in the expert affidavit further detracts from the credibility of the claimed technical effects. Accordingly, I observe that no technical advancement over existing knowledge has been established, and the requirement of inventive step under Section 2(1)(ja) of the Act is not satisfied.

41. The appellant has also argued that the Controller's finding on lack of inventive step was unsustainable. In this regard, it was contended that the Controller had already accepted sufficiency of disclosure under Section 10 of the Act. On that basis, the appellant claimed that the objection regarding insufficiency of comparative data could not have been raised.

42. From the analysis of the impugned order (see: *Paragraph 7 above*), it is clear that the Controller did not raise an objection of insufficiency of disclosure under Section 10 of the Act. The data in the Complete Specification was considered adequate for the limited purpose of disclosure. The objection raised by the Controller was under Step 5 of the five-step test laid down by the Division Bench of this Court in ***F. Hoffmann-La Roche Ltd* v. *Cipla Ltd***[9]. The relevant test is: "*Viewed without any knowledge of the alleged invention as claimed, do those differences constitute steps which would have been obvious to the person skilled in the art or do they require any degree of inventive ingenuity?*" The Controller found that the appellant was unable to demonstrate technical advancement on the basis of the data in the Complete Specification or in the expert affidavit, so as to support non-obviousness under Section 2(1)(ja) of the Act.

43. Further, I hold that the appellant's argument itself is fundamentally misconceived, as compliance with Section 10 of the Act, which requires that the invention be sufficiently disclosed, does not in itself establish that the claimed subject matter involves an inventive step. The two provisions operate in distinct spheres, and satisfaction of one does not dispense with the requirement of the other.

44. Based on the aforesaid, I find no infirmity in the decision of the Controller in holding that the appellant has failed to show any technical advancement achieved by the claimed invention based on the comparative data provided in the Complete Specification/expert affidavit.

ANALYSIS OF PRIOR ART DOCUMENTS

[9] supra note at 2

45. Although I have already held that the Controller's finding on lack of inventive step is correct and requires no interference, for the sake of completeness, I consider it appropriate to also examine the prior art documents relied upon in the impugned order. The relevant prior art documents identified by the Controller are listed below:

i. **Document A:** WO 2014/164674
ii. **Document B:** WO2014177798
iii. **Document D2:** WO2011062574A1
iv. **Document:** 3417/KOLNP/2010
v. **Document:** 3022/KOLNP/2010

MOSAICING OF PRIOR ART DOCUMENTS

46. Mr. Hemant Singh has vehemently argued that the Controller, while analysing the subject patent application, has 'cherry-picked' various constituents from the cited prior art documents, and mosaiced them applying hindsight reconstruction and wrongly arrived at the conclusion that the subject invention lacks an inventive step. Further, the Controller has not given any reason to justify the mosaicing of the prior arts.

47. In this regard, a reference may be made to Section 09.03.03.02 under the head 'Determination of Inventive Step' of '***Manual of Patent Office Practice and Procedure'***, (version 3.0) dated 26th November, 2019, wherein it has been stated as under:

> "*4.* ***For the purpose of establishing obviousness of the invention to a person skilled in the art, mosaicing multiple documents of prior arts is permissible, if the cited prior art provides lead to the skilled person to combine the teachings thereunder, at the time of filing or priority date of patent application***."
>
> [Emphasis Supplied]

48. The mosaicing of prior arts is also an internationally acceptable principle. A reference may also be made to ***Terrell on the Law of Patents***, 20th Edition, Chapter 12 titled 'Invalidity Due to Obviousness (Lack of Inventive Step)', at paragraph 12-160, wherein it has been observed as follows:

> "*In Pfizer Ltd's Patent*[10] *Laddie J referred to the passage in the 15th edn of this work dealing with mosaicing in the context of novelty (see para.11-61), and continued:*
>
> > *"This passage is directed particularly at the* ***issue of mosaicing when applied to the law of novelty. The same approach applies to obviousness.*** *There may well be invention in patching together disclosures from unrelated sources (see Von Heyden v Neustadt (1880) 50 L.J.Ch. 126). But, at least in relation to obviousness, the second part of this statement [that reliance on express cross-referencing is permissible] does not represent a rigid but limited exception.* ***When any piece of prior art is considered for the purposes of an obviousness attack, the question asked is 'what would the skilled addressee think and do on the basis of this disclosure?" He will consider the disclosure in the light of the common general knowledge and it may be that in some cases he will also think it obvious to supplement the disclosure by consulting other readily accessible publicly available information. This will be particularly likely where the pleaded prior art encourages him to do so because it expressly cross-refers to other material. However, I do not think it is limited to cases where there is an express cross-reference. For example if a piece of prior art directs the skilled worker to use a member of a class of ingredients for a particular purpose and it would be obvious to him where and how to find details of members of that class, then he will do so and that act of pulling in other information is itself an obvious consequence of the disclosure in the prior art.***"
>
> [Emphasis Supplied]

49. The aforesaid extract was also relied upon by a Coordinate Bench of

[10] [2001] F.S.R. 16 at [65]-[66]

this Court in ***Mahesh Gupta* v. *Controller of Patents & Designs***[11], wherein the Court was also seized of a patent appeal involving an issue related to mosaicing of prior arts.

50. Therefore, it can be concluded that when multiple prior arts are considered for inventive step analysis, the mosaicing of prior arts is permissible. The fundamental requirement before mosaicing of prior arts will be whether the prior arts are related to the inventive concept of the patent application under scrutiny, and whether the person skilled in the art will be motivated to combine the prior arts.

PERSON SKILLED IN THE ART (PSITA)

51. Before analysing the prior arts, I shall first examine whether the Controller had correctly identified the 'person skilled in the art' in the present case.

52. A '*person skilled in the art*' as referred in Section 2(1)(ja)[12] of the Act is not an ordinary person but a hypothetical person who is skilled in the relevant art. In this regard, a reference may be made to the judgment of the High Court of Madras in ***Rhodia Operations* v. *Controller, Patents & Designs***[13]. The relevant paragraph from the said judgment is reproduced below:

> *"27. Section 2(1)(ja) uses the word "skilled" as an adjective qualifying the noun "person". Most standard dictionaries define the adjective "skilled" as referring to a person having the ability to do a job, task or activity well. I am mindful of Judge Learned Hand's wise counsel in Markham v. Cabell, 326 U.S. 404 (1945), that one should not make a "fortress of the dictionary". So, I remind myself of the context: to determine whether the technical advance or economic significance or both*

[11] 2024 SCC OnLine Del 4000
[12] supra note at 5
[13] (2024) 1 HCC (Mad) 140.

would be obvious to a person skilled in the art. By reckoning that such skilled person could be from a range of disciplines depending on the field of invention, I ask myself what level of ability comes to mind if a person were to be described in any of the following ways: skilled medical doctor; skilled automobile engineer; skilled physicist; skilled carpenter; or skilled immunologist. ***In each case, the straightforward answer is a person possessing the necessary attributes to do the job well. I bear in mind statutory context, i.e. the absence of the qualifier "average" in Section 2(1)(ja) in contrast to its use in Section 64(1)(h). I recognise that the statute neither uses words that indicate enhanced levels of skill such as "highly", "outstandingly" or "extraordinarily" nor words that indicate a low or average level of skill such as "low" or "ordinary" or "average" to further qualify the "skilled" person. By taking into account all of the above, on balance, in my view, the "person skilled in the art" as per Section 2(1)(ja) is a person whose skill level is good/greater than average. Because most disciplines/arts require a range of skills or skill set, this person should possess the skill set to do the job well****. *These aspects were considered in a judgment dated 12.06.2013 of the Intellectual Property Appellate Tribunal (the IPAB) in Enercon (India) Ltd. v. Aloys Wobben (Enercon), ORA/08/2009/PT/CH. In Enercon, the IPAB, speaking through Mrs.Justice Prabha Sridevan, held as under in two memorable paragraphs:*

> *"35. It is true that the Roche extract is specifically with regard to the obviousness issue, but the Novartis extract is not. But it is clear from both the judgments that we should understand the concepts based on the sections as they are in our Act, and also contextualize it in our country.* ***Roche v. Cipla also speaks of a person skilled in the art and not a person with ordinary skill in the art or average skill in the art. The respondent wants us to imagine a person of ordinary skill, conservative, unimaginative, will not go against established prejudice, and is in India. The law has not used the word ordinary. It had the laws of other jurisdictions before it and yet it eschewed the word "ordinary". So it is very important for us while deciding obviousness not to conjure up a dullard or a moron. Why should we proceed as if "ordinariness" is inherent in the hypothetical person? If it makes the obviousness bar a bit higher, we must bear that in mind, for This is Our Law."***
>
> ***"37. In this case the art is wind energy. Since this obviousness test is the most frequently debated issue in patent litigations, it may be better if in the future, the pleadings or evidence tells us who this person is. This person is skilled in the art. This person is presumed to know the state of that art at that time, and to have the knowledge that is publicly available. The Act is quite clear and free from ambiguity. The person is skilled in the art and has more than average knowledge of the state of the art and also has common sense. Indian law expects the***

***nonobviousness to be tested against this person and not the person who is the touchstone in U.S. Law. She is Ms.P.Sita (Person Skilled in the Art) and not Mr.Phosita or Mr. Posita who are both ordinary by definition**."*

Attributes of a person skilled in the art

28. I turn next to the attributes of a person skilled in the art. Depending on the art, educational/ academic or vocational qualifications are likely to be required. Work experience would certainly be required because one does not ordinarily describe a person with the requisite educational qualifications but no work experience as skilled in the art. What about ability to use the tools of trade? ***Clearly, a person skilled in the art would be adept at using the tools of trade.*** *With regard to knowledge, as held in Lily Icos, on account of the underlying public policy requirement that no monopoly right should be granted over matters previously known in the art or obvious to a person with knowledge of prior art, a level of knowledge that a real person skilled in the art is unlikely to possess is imputed to the hypothetical person. Such imputation of knowledge is not, however, unqualified and is restricted to matters previously known in the art in which such person or team of persons is skilled. The legislative intent, as gleaned from text, is certainly not that this person should be omniscient. This leads to the question: in what respects should this notional person be different from a real person skilled in the art?*

29. For instance, is it necessary that this person should be forgetful of other prior art once she identifies the closest prior art? I do not think that it is necessary to impute such trait although it is necessary to be mindful of the risk of hindsight-based mosaicing. Should this person be lacking in imagination? While the extent of imaginativeness varies from person to person, imagination is an inherent human quality and the underlying public policy of fostering inventiveness does not justify banishing imagination in the notional person. ***What about inventiveness? Plainly, the text of the statute requires a patent applicant to establish the existence of an inventive step and, if obviousness is examined from the perspective of a skilled person with ingenuity and inventive capacity, every patent application would fail as would the public policy of fostering genuine invention. Indeed, even de hors the public policy justification, the expression "person skilled in the art" does not ordinarily connote a person with inventive capability. Thus, except to the extent that statutory prescription or the underlying public policy call for a departure from the characteristics of a real person skilled in the art, the notional person***

should, in my view, mirror a real person as closely as possible. Adopting such approach has the benefit of enhancing the quality of obviousness analysis by ensuring that it remains rooted in the real world. In sum, other than the unreal levels of knowledge imputed to the notional person, such person should possess all the qualities that a real person proficient in the art would possess.

Identifying the person skilled in the art

30. Is it always necessary for the adjudicator to identify the person skilled in the art? If the patent applicant and the relevant patent office agree on the person skilled in the art, identification by the adjudicator is not necessary. By contrast, whenever there is disagreement, the adjudicator has to identify the person skilled in the art. Where does one begin? ***The obvious starting point is the field of the claimed invention. Sometimes the person skilled in the art can be readily identified from the field of invention. By way of illustration, if the claimed invention is a pure automobile patent, the person skilled in the art would be an automobile engineer.*** *The identification process could get more complicated - and, the person skilled could even be a team of persons with requisite skills - if the claimed invention also embraces a customised software embedded in a system/hardware. Depending on the nature of the claimed invention, the person, or team of persons, skilled in the art could be from a specific industry or industries or be proficient in technology with use cases in multiple industries.* ***While undertaking this exercise, it is necessary to bear in mind that the object is certainly not to identify a person or team of persons with the capacity to invent in the field of the claimed invention.*** *It is useful to refer to a couple of cases to understand how the person skilled in the art is identified."*

[Emphasis supplied]

53. From a reading of the above extracted paragraphs, it can be discerned that Indian patent law has a higher standard of 'person skilled in the art', when compared with major foreign jurisdictions such as the United States of America (USA) and the European Union (EU).

53.1. The United States patent law, 35 U.S.C. § 103[14], provides that the question of obviousness should be analysed from the perspective of a 'person having ordinary skill in the art.' Similarly, Article 56[15] of the European Patent Convention (EPC) provides that an invention shall be considered as involving an inventive step if, having regard to the state of the art, it is not obvious to a 'person skilled in the art'.

53.2. The Guidelines for Examination in the European Patent Office[16] further clarify that 'person skilled in the art' refers to a hypothetical person of average skill and knowledge in the technical field concerned. In contradistinction, a 'person skilled in the art' under Section 2(1)(ja) of the Act is a notional professional with greater-than-average competence, relevant qualifications, practical experience, and common sense, presumed to know all prior art in the field but lacking inventive capacity.

54. Since the subject patent invention relates to the manufacturing of a coated glass substrate, I find no error in the Controller's finding that the 'person skilled in the art' relevant to the present case would be a person conversant in glass construction and glass manufacturing.

MOTIVATION FOR PSITA TO COMBINE THE PRIOR ARTS

55. I shall now examine whether the prior arts are related to the inventive concept of the subject patent application, and whether a person skilled in the

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[14] United States Patent Law, 35 U.S.C. §103. Conditions for patentability; non-obvious subject matter
A patent for a claimed invention may not be obtained, notwithstanding that the claimed invention is not identically disclosed as set forth in section 102, if the differences between the claimed invention and the prior art are such that the claimed invention as a whole would have been obvious before the effective filing date of the claimed invention to **a person having ordinary skill in the art** to which the claimed invention pertains. Patentability shall not be negated by the manner in which the invention was made.

[15] According to Article 56 of the European Patent Convention, an invention shall be considered as involving an inventive step if, having regard to the state of the art, it is not obvious to **a person skilled in the art.**

[16] European Patent Office, Guidelines for Examination in the EPO, Part G, Chapter VII, Section 3 (2025), available at: https://www.epo.org/en/legal/guidelines-epc/2025/g_vii_3.html

art would be motivated to combine them.

56. An illustrative table describing the prior arts is given below:

Prior Arts	Disclosure
WO 2014/164674 A2 (Document A)	Solar control coatings for transparent substrate; tuning dielectric thickness to influence absorption and optical colour.
WO 2014/177798 (Document B)	Transparent substrate with multilayer stacks (including silver) for solar and infrared radiation (IR) control; glazing for insulation and sun protection.
WO 2011/062574 A1 (Document D2)	Coatings on insulating glass designed for bronze reflective colour; uses thickness adjustments to control reflection.
IN 3417/KOLNP/2010	Transparent substrate with a silver functional layer, along with Nickel/Chromium blocking/protective layers, which is used for solar protection. This also reduces the stress of air conditioning and/or prevents excessive interior overheating.
IN 3022/KOLNP/2010	Solar protection glazing units with Silver functional layer sandwiched between Nickel/Chromium underblocker and overblocker with dielectric antireflection layers.

57. From the above table, it is evident that each of the prior art documents cited by the Controller relates to the same technical field as the claimed invention described in the Complete Specification, namely glazing comprising a transparent substrate coated with a stack of thin layers including a silver-based functional layer. Given that all these prior arts address coatings for transparent substrates with silver and Nickel/Chromium blocking layers to achieve solar or optical control, they are squarely within the domain of the claimed invention. A person skilled in the art, as recognised above, would therefore be motivated to consult and combine these prior arts in order to address the problem existing in the field at the time of filing. Accordingly, the

appellant's submission that the Controller engaged in a hindsight analysis is without merit.

58. During the course of submissions, the appellant has tried to distinguish each prior art separately, in the following manner:

- Document A uses multiple stacks with subcritical metallic layers with different thicknesses as compared to the subject patent application for achieving higher absorbance (i.e., low reflection) in the visible region. Hence, Document A teaches away from the subject invention, desiring to obtain a high reflection.
- Document B mandates triple silver layers with low reflection and blue-green colour in reflection, whereas the claimed invention only has a single silver functional layer.
- Document D2 provides a bronze colour in appearance and visible light reflection below 28% with nitride blocking layers.
- Document IN 3417/KOLNP/2010 discloses material with high transmission with reflection values well under 30%. It also differs in the thickness of layers.
- Document IN 3022/KOLNP/2010 discloses a different purpose with high light transmission in the range of 64%, and a low light reflection in the visible range of 12% with different thicknesses from the subject application.

59. According to the appellant, none of these prior arts suggests or motivates a person skilled in the art to reach the subject patent application containing a single-stack, single silver layer configuration with Nickel /Chromium blocking layers, which achieves unique reflective properties.

60. Now, let me analyse the characterised features of the subject invention in light of the relevant prior arts identified by the Controller. A summary of the analysis is illustrated in the table below:

Feature	**Claimed Invention**	**WO 2014/164674 A2 (Doc A)**	**WO 2014/177798 (Doc B)**	**WO 2011/062574 A1 (D2)**	**IN 3417/ KOLNP/2010**	**IN 3022/ KOLNP/2010**
Upper Blocking layer	• Material: Nickel/ Chromium • Thickness range: 2.1–8 nm;	• The primer layer with similar function as blocking layer. • Material: Nickel-Chromium alloy • Size range: .5 nm to 5 nm.	• Blocking layer (Nickel/ Chromium) • Thickness range: 3-7 nm	• Contact layer of Nickel/ Chromium with similar function as blocking layer. • Thickness: 1 to 10 nm	• Blocking layer (Nickel/ Chromium) • Thickness: 0.2-1.8 nm	• Nickel-Chromium • Thickness: .8 nm
Dielectric coating	• No. of Layers: one or more • Thickness: 5–30 nm	• More than one. • Thickness: 10-60 nm	• More than one • Thickness: 40-80 nm	• more than one. • Thickness: 13-27 nm.	• More than one. • Thickness: 3-25 nm.	• More than one • Thickness: 45 nm.
External light reflection	>30%	• Not specifically teaching. But discusses asymmetrical reflectivity, solar coating capable of reflecting visible light.	• Teaches glazing with external reflection 17 to 24%	• External Reflection greater than 20% (26.4%)	• External reflection between 35% and 45%. Specific examples of 26.4% and 25%.	• Light reflection is 20%, 30%, 50%, , 80%

61. After an independent analysis of the relevant prior arts cited by the Controller, the following aspects emerge:

- Since Document A does not explicitly state that the external reflection does not exceed 30% or that it cannot achieve a high

reflectance as the subject application, it cannot be said that Document A teaches away the person skilled in the art. To the contrary, Document A discusses asymmetrical reflectivity, a solar coating that is capable of reflecting visible light.

- The presence of a single silver functional layer is not recognised as a novel feature by the appellant in the independent Claim 1 of the subject application. Therefore, the same cannot be the basis to distinguish Document B. Moreover, Document B teaches that adjusting the thickness of layers can result in a tinted appearance.
- Document D2 explicitly teaches how to achieve an external reflection of greater than 20%.
- Documents IN 3417/KOLNP/2010 and IN 3022/KOLNP/2010 exhibit illustrations showing an external reflection covered in the subject patent application.

62. In view of the above analysis, it is evident that the distinguishing features highlighted by the appellant do not demonstrate any unexpected technical advancement over the cited prior arts. Accordingly, the cited prior arts, when considered collectively, already disclose the essential set of elements, *i.e.,* a single silver functional layer, Nickel/Chromium blocking layers, dielectric coatings and sufficiently indicate that optical properties such as reflection and colour can be tuned by routine thickness variation. The appellant has not shown any unexpected effect that would prevent a skilled person from combining these teachings.

63. When prior arts are interrelated to the field of invention of the subject application and the person skilled in the art is aware of the prior art documents

as a whole, identification of relevant aspects from each prior art and combining them would not be considered as mere 'cherry-picking'. Therefore, in my view, the contention of the appellant regarding 'cherry-picking' cannot be sustained. In my considered view, the present is not an instance of hindsight mosaicing, but of a legitimate combination of directly related teachings in the same technical field, which a skilled person would naturally consult to solve a similar problem.

OBVIOUSNESS TO A PERSON SKILLED IN THE ART

64. The inventive concept of multi-layered coating for glass substrates, which achieves desired properties in terms of light transmission, reflection and aesthetic colourful appearance, has been known in the prior arts. The distinction of the subject application relied upon by the appellant lies in the mere choice of the specific thickness of the blocking and dielectric layers to obtain silver appearance, light reflection above 30% and desired light transmission.

65. To find whether this improvement made in the subject patent application is obvious for a person skilled in the art, a reference may be made to the judgment by the Supreme Court in this regard in ***Bishwanath Prasad Radhey Shyam* v. *Hindustan Metal Industries***[17]**.** Relevant paragraphs from the said judgment are reproduced below:

> ***"It is important to bear in mind that in order to be patentable an improvement on something known before or a combination of different matters already known, should be something more than a mere workshop improvement; and must independently satisfy the test of invention or an 'inventive step'. To be patentable the improvement or the combination must produce a new result, or a new article or a better or cheaper article than before. The combination of old known integers may***

[17] supra note at 1

be so combined that by their working inter relation they produce a new process or improved result. *Mere collocation of more than one integers or things, not involving the exercise of any inventive faculty, does not qualify for the grant of a patent. 'It is not enough', said Lord Davey in Rickmann v. Thierry (1896) 14 Pat. Ca. 105 'that the purpose is new or that there is novelty in the application, so that the article produced is in that sense new, but there must be novelty in the mode of application.* ***By that, I understand that in adopting the old contrivance to the new purpose, there must be difficulties to be overcome, requiring what is called invention, or there must be some ingenuity in the mode of making the adoption'. As Cotton L. J. put in Blackey v. Latham (1888) 6 Pat. Ca. 184, to be new in the patent sense, the novelty must show invention". In other words, in order to be patentable, the new subject matter must involve 'invention' over what is old. Determination of this question, which in reality is a crucial test, has been one of the most difficult aspects of Patent Law, and has led to considerable conflict of judicial opinion.*** *"*

xxx

"The expression "does not involve any inventive step" used in Section 26(1) (a) of the Act and its equivalent word "obvious", have acquired special significance in the terminology of Patent Law. ***The 'obviousness' has to be strictly and objectively judged.*** *For this determination several forms of the question have been suggested. The one suggested by Salmond L. J. in Rado v. John Tye & Son Ltd. is apposite. It is:* ***"Whether the alleged discovery lies so much out of the Track of what was known before as not naturally to suggest itself to a person thinking on the subject, it must not be the obvious or natural suggestion of what was previously known."*** *Another test of whether a document is a publication which would negative existence of novelty or an "inventive step" is suggested, as under:*

"Had the document been placed in the hands of a competent craftsman (or engineer as distinguished from a mere artisan), endowed with the common general knowledge at the 'priority date', who was faced with the problem solved by the patentee but without knowledge of the patented invention, would he have said, "this gives me what I want?" *(Encyclopaedia Britannica; ibid)."*

[Emphasis Supplied]

66. From a reading of the above, it can be stated that an invention is

patentable only if it goes beyond a mere workshop improvement or collocation of known elements and produces a new result, article, or improved product through ingenuity in application. The test of obviousness is strict and objective. If a competent craftsman with common general knowledge at the priority date would find at least a single prior art that could provide a solution to the problem addressed by the claimed invention, then the claimed invention would be rendered as obvious, thereby lacking inventive step.

67. In the present case, the improvement made to the prior art is in terms of optimisation of the thickness of the layers used in the subject application, with a predictable outcome. Such an improvement would be obvious to a person skilled in the art of glass construction and manufacturing, who could achieve the same results through routine experimentation with the full knowledge of the relevant prior arts.

68. In this regard, a reference may be made to the observations of the Controller in the impugned order, which is set out below:

> "*In Crux, as the same sequence as of the present invention i.e.* ***Silver layer sandwiched between the lower dielectric layer and the upper blocking layer with overlapping thickness of the layers with positioned on Face 2 are already disclosed in document A, the same sequence of layers and overlapping thickness of Ni/Cr layer and dielectric layer, aims to improve the aesthetic appearance along with internal, external reflection along with Silver layer sandwiched between the lower dielectric layer and the upper blocking layer in document B and D2 suggested that a combination of a reflection > 20% and transmission >35% can be achieved for monolithic windows and/or IG units. A coating is provided so that the monolithic coated article or IGU realizes blue transmissive b* coloration of from about -5 to -14, more preferably from about -7 to -11 , in combination with green transmissive a* coloration of from about -1 to -7, more preferably and most preferably from about -3 to -4.5. D2 also teaches or suggest the use of NiCr layer in stack as discussed. In paragraphs 5-7 of D2, it is explicitly stated that the bronze color glass***

side reflective color is achieved through the adjustment of thickness layers within the stack. In background of D2 it is disclosed that blue glass side reflective color was known and a desirable bronze color can be realized, in combination with good solar characteristics, by adjusting thicknesses of layer(s) in the coating. Therefore, from the teachings of D2 it is obvious to achieve silver color by optimize the thickness of layers within the stack without using inventive skill.*"*

xxx

"Further, ***the documents 3417/Kolnp/2010 and 3022/Kolnp/2010 are applicant"s own patent applications as „3022 discloses the stack with the objective to achieve light transmission of below 60%, light reflection of atleast 30% or 50% with different characterizing features. Document 3417/KOLNP/2010 also suggested that a mono layer of silver can be sandwiched between layers. As „3417 discloses the single silver-based stack, with the specific disclosure on the thickness of the Dielectric coating i.e. Silicon Nitride layer, without the Lower blocking layer with different characterizing features.***

Based on the above findings, the key elements and sequences of layers in the claimed stack are already disclosed in prior art documents A, B, and D2. The documents 3417/Kolnp/2010 and 3022/Kolnp/2010 are also applicant's own patent applications which disclose the same concept of the present invention i.e. achievement of light transmission of below 60 %, light reflection of atleast 30% or 50% and use of mono silver layer however both of these applications have different characterizing features of stack. It is evident that the applicant was fully aware of the attributes of the stack ***in which the silver layer is directly sandwiched between the upper blocking layer and the lower dielectric layer without the presence of the lower blocking layer with a glossy silver appearance in external reflection without impairing the solar performance in particular without increasing the solar factor particularly a light reflection at the external side higher than 30% can be achieved by adjustment of thickness of layers within the stack without using inventive skill. Therefore, it is obvious to a person skill in the art to combine the teachings of cited prior arts as discussed above to achieve the stack having both neutral transmission colors and a glossy silver appearance in external reflection without impairing the solar performance in particular without increasing the solar factor particularly a light reflection at the external side higher than 30% without using inventive skill. Thus, claim 1 does not meet the requirements of sections 2(1)(ja). Dependent claims 2- 13***

do not contain any features which, in combination with the features of any claim to which they refer, meet the requirements of inventive step. Thus, the present application does not meet the requirements of sections 2(1)(ja). "

[Emphasis Supplied]

69. In my view, the Controller has rightly analysed the subject patent application in light of the cited prior art documents and the data given in the Complete Specification, and has rightly concluded that the subject application is not able to show technical advancement over the cited prior art documents. Also, the improvement achieved by the claimed invention over the cited prior arts has rightly been concluded as obvious to the person skilled in the art and thereby lacking inventive step as per Section 2(1)(ja) of the Act.

70. Yet another submission made by the appellant was that the subject patent ought to be granted since a corresponding patent has been granted in France.

71. This contention is untenable as it is no longer *res integra* that patent rights are territorial in nature. A patent granted in one jurisdiction, such as France, has no bearing or enforceability in India, and does not entitle the applicant to a patent as a matter of right in this country. The Patent regime in every country requires an independent assessment of novelty, inventive step, and industrial applicability in accordance with its own statutory standards. As discussed above, the definition of a person skilled in the art is different in different jurisdictions. [Please Refer: ***Communication Components Antenna Inc. v. ACE Technologies Corpn.***[18]]

72. Accordingly, for the reasons discussed above, there is no error or

[18] 2019 SCC OnLine Del 9123.

infirmity in the finding of the Controller that the subject patent application cannot be granted in terms of Section 2(1)(ja) of the Act.

73. Accordingly, the present appeal is dismissed.

74. Pending application stands disposed of.

75. The interim order dated 11th April 2024 directing the Controller to show the status of the subject patent application as 'Pending' on the website stands vacated.

76. The Registry is directed to supply a copy of the present order to the office of the Controller General of Patents, Designs & Trade Marks of India on the e-mail- llc-ipo@gov.in.

AMIT BANSAL
(JUDGE)

SEPTEMBER 11, 2025
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