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

% ***Judgment Reserved on: 18th November, 2024***
Judgment pronounced on: 6th December, 2024

\+ **C.A.(COMM.IPD-PAT) 108/2022**

DRAKA COMTEQ B.V .....Appellant

Through: Mr. Rohit Rangi, Mr. Vineet Rohilla, Mr. Pankaj Soni, Mr. Debashish Banerjee, Mr. Tanveer Malhotra, Mr. Ankush Verma and Ms. Vaishali, Advocates

versus

THE CONTROLLER OF PATENTS,
DESIGNS AND TRADEMARKS .....Respondent

Through: Ms. Rukhmini Bobde, CGSC with Mr. Amit Kumar Srivastava, Mr. Amlaan Kumar and Mr. Vinayak Aren, Advocates

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 'the Act') challenging the order dated 19th November, 2019 (hereinafter 'impugned order') passed by the Assistant Controller of Patents and Designs (hereinafter 'respondent no.2') refusing the Patent Application no.2791/DELNP/2010 filed on 22nd April, 2010 (hereinafter 'the Subject Application') for the invention titled 'Multimode Fiber' (hereinafter

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'Subject Invention').

2. The Subject Application concerns the field of optical fiber transmissions, and more specifically, a multimode optical fiber used for short-distance transmission systems requiring a large bandwidth.

BRIEF FACTS

3. The brief facts relevant for the adjudication of the present appeal are set out below:

3.1 The Subject Application was filed on 22nd April, 2010 as the national phase entry of PCT application no. PCT/NL2008/000239 under the Patent Co-operation Treaty (PCT) system claiming priority date of 23rd October, 2007.

3.2 The appellant filed a request for examination of the Subject application on 18th July, 2011.

3.3 The First Examination Report (hereinafter 'FER') in respect of the subject application was issued by the Controller of Patents and Designs (hereinafter "respondent no.1") on 24th March, 2017, in which objections of lack of novelty and inventive step under Section 2(1)(j) of the Patents Act of the Subject Invention were raised.

3.4 Thereafter, the appellant filed a detailed response with respect to the objections raised in the FER on 12th May, 2017.

3.5 In view of the aforesaid response filed by the appellant, respondent no.2 *vide* letter dated 5th September, 2019 issued further objections through a hearing notice and fixed the Subject Application for oral hearing on 20th September, 2019.

3.6 Arguments in the Subject Application were heard on behalf of the appellant on the aforesaid date and subsequently, written submissions

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were filed by the appellant on 3rd October, 2019.

4. On 19th November, 2019, respondent no.2 issued the impugned order rejecting the Subject Application. Aggrieved by the same, the appellant filed the present appeal before the Intellectual Property Appellate Board (hereinafter 'IPAB') on 19th February, 2020.

5. Notice in the present appeal was issued by the IPAB on 15th March, 2021.

6. However, with the dissolution of IPAB after 'The Tribunals Reforms (Rationalization And Conditions of Service) Ordinance, 2021 (No.2 of 2021), the present appeal was transferred to the High Court of Delhi.

7. The Subject Application was refused by the respondent no.2 on the grounds that the Subject Invention failed to fulfil the requirements of novelty and inventive step under Section 2(1)(j) of the Patents Act. The relevant extracts from the impugned order are set out below:

> *"**Regarding objection [section 2(l) (j)];-***
>
> *The document D3 discloses the feature that the alpha profile is obtained by co-doping with at least two dopants (Germanium, Fluorine), the variation in concentration of each substance (germanium, fluorine) (see examples 7-10 wherein concentration of Germanium and fluorine changes according to alpha profile obtained, therefore the increase the transmission bandwidth) and figures 21-25) and its derivative in relation to the fiber radius is continuous (see examples 7-10). The document D3 also discloses the graded-index multimode fiber manufactured by using a plasma chemical vapor deposition (PCVD), while the incorporation of the two substances (Germanium, Fluorine) were incorporated and precisely control amount to achieve the desired refractive index profile.* ***Therefore the subject matter as claimed in claim 1 of the alleged invention is not new, lacks novelty and inventive step and does not meet the requirement of section 2(1)(j) of the Patents Act.***
>
> *It is noted that although the hearing submissions have attempted to address the other requirements, yet without fulfilling the substantive requirements of the section 2(l)(j) of the Patents Act, 1970 i.e. Section*

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2(1) (j), this, instant application is not found in order for grant.

Thus, ***the reasons given above claims amended after hearing are obvious and the applicant has failed to overcome the objection regarding inventive step communicated in the hearing notice****, this instant application no. 2791/DELNP/2010 does not comply with the requirements of section 2(1)(j) of the Patents Act, 1970. 1, therefore, hereby order that the grant of a patent is refused under the provisions of Section 15 of the Patents Act."*

[emphasis supplied]

SUBMISSIONS

8. Mr. Rohit Rangi, Advocate appearing on behalf of the appellant, while assailing the impugned order, makes the following submissions:

(i) The only prior art cited in the impugned order, D3, is silent about the feature of 'depressed cladding'. Therefore, D3 cannot disclose 'doping of depressed cladding', which is disclosed in Claim 1 of the Subject Application.

(ii) The examples 7 to 10 of D3, which have been relied upon in the impugned order, do not disclose a 'depressed cladding' or a stepped portion of the depressed cladding that has a refractive index lower than the refractive index of the cladding.

(iii) Even though D3 discloses doping of the core with two dopants, it does not solve the problem of 'continuous variations in the alpha profile'. 'Depressed cladding' was known in the prior art, but only had one dopant, whereas the Subject Invention has two dopants in the depressed cladding, which results in better control of the refractive index.

9. *Per contra*, Ms. Rukhmini Bobde, learned counsel appearing for the respondent, defends the impugned order by making the following submissions:

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(i) Even though the term ‘depressed cladding’ has not been specifically used in D3, the phrase ‘alpha profile’ used in D3 is actually a reference to depressed cladding. Further, D3 also discloses the use of germanium and fluorine as dopants.

(ii) The claims, as filed on behalf of the appellant, are substantially similar to the claims of D3 and therefore, there is no infirmity in the impugned order holding that the Subject Application fails to disclose an inventive step.

(iii) The impugned order has considered the prior art D3 and rightly come to the conclusion that the subject matter in Claim 1 of the Subject Application is not new and lacks novelty and inventive step.

ANALYSIS AND FINDINGS

10. I have heard the learned counsel for the parties and examined the record.

11. As per the impugned order, the first ground of refusal is the ‘lack of novelty’, and the second ground for refusal is the ‘lack of inventive step’ under section 2(1)(j) of the Act. I shall first deal with the ground of lack of novelty.

Objection on Lack of Novelty

12. Novelty is the first prerequisite for a product or process to qualify as an invention under section 2(1)(j) of the Act. The novelty of an invention is determined based on the knowledge published or used in the art, either explicitly or implicitly, before the priority date of an invention. According to the ***Manual Of Patent Office Practice And Procedure*** (Version 3.0) published by the Office Of Controller General Of Patents, Designs &

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Trademarks on 26th November, 2019, a prior art is considered to be destroying the novelty of an invention if all the features of the invention are present in the cited prior art document. In the impugned order, the Controller has identified D3: CN1576917A, titled "GRADED-INDEX MULTIMODE FIBER AND MANUFACTURING METHOD THEREFOR", as the prior art that discloses all the features of the Subject Invention. Since D3 is a document published in the Mandarin language, for convenience, reference is made to the corresponding US patent application (US20050013570) (hereinafter 'D3').

13. The Subject Invention relates to 'Multimode Optical Fiber', having a central core with an 'alpha profile', a 'depressed cladding' having a portion in continuity with the alpha profile, a stepped portion, and an outer cladding. The alpha profile is obtained by co-doping at least two dopants. Each dopant's concentration variation and its derivative concerning the fiber radius are continuous. The Multimode Optical Fibers obtained *via* the Subject Application are used mostly for communication over short distances, specifically for Ethernet optical systems with an improved bandwidth.

14. With this background, to identify the features of the invention, a reference may be made to the independent Claim 1 of the Subject Application, which is set out below: -

> "*1. A multimode optical fiber, comprising from the center to the periphery:*
> - *a central core having an alpha profile;*
> - ***a depressed cladding having a portion in continuity with the alpha profile of the central core and a stepped portion**;*
> - *an outer cladding;*
>
> ***wherein the depressed cladding has a refractive index lower than the refractive index of the outer cladding**; and wherein the alpha profile and*

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the portion in continuity with the alpha profile are obtained by co-doping with at least two dopants, the variation in concentration of each dopant and its derivative in relation to the fiber radius being continuous with respect to the fiber radius."

[emphasis supplied]

15. A perusal of Claim 1 above discloses four distinct features of the Subject Invention. Which are:

(i) The multimode optical fiber with a central core with an alpha profile, a 'depressed cladding' featuring a portion in continuity with the core's alpha profile and a stepped portion, and an outer cladding.

(ii) The 'depressed cladding' has a lower refractive index than the outer cladding.

(iii) Both the alpha profile of the core and the portion of the 'depressed cladding' in continuity with the core are achieved through co-doping with at least two dopants.

(iv) The variation in concentration of the dopants and their derivative with respect to the fiber radius is continuous.

16. To analyse novelty, a reference may be made to the disclosure made in the relevant prior art, D3. The prior art D3 discloses a graded-index multimode optical fiber designed for enhanced transmission performance. The fiber comprises a silica-based core, optionally doped with substances like fluorine, phosphorus, or germanium, and a cladding surrounding the core. The refractive index profile of the fiber follows a specific mathematical relationship, optimised using the '*Wentzel-Kramers-Brillouin*' method to maximise transmission bandwidth. These features make it suitable for high-speed and high-capacity optical communication systems.

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17. A table comparing the features in the Subject Invention and the prior art D3 is provided below:

Claim 1 of the Subject Application	**The prior art D3**
Claim 1: A multimode optical fiber, comprising from the center to the periphery:	Claim 5: A graded-index multimode fiber comprising:
a central core having an alpha profile;	a core made of silica glass; and
a depressed cladding having a portion in continuity with the alpha profile of the central core and a stepped portion;	
an outer cladding;	a cladding which is provided at an outer periphery of the core,
The depressed cladding has a lower refractive index than the outer cladding.	
wherein the alpha profile and the portion in continuity with the alpha profile are obtained by co-doping with at least two dopants,	wherein the graded-index multimode fiber has a refractive index profile which satisfies the Formula (1) as given in D3, wherein the core contains a first Substance and at least one second Substance,
the variation in concentration of each dopant and its derivative in relation to the fiber radius being continuous with respect to the fiber radius.	wherein the core contains a first substance which generally monotonically decreases the optimum value of the refractive index distribution order α in Formula (1) with an increase in wavelength and at least one second substance which generally monotonically increases the optimum value of the refractive index distribution order α with an increase in wavelength. See embodiment 2; para's 92-153, examples 5-11 of D3,

18. It is clear from the comparison above that 'depressed cladding' is a distinct part of the Subject Invention. Further, Claim 1 also emphasises that 'depressed cladding' has a refractive index lower than the refractive index of the outer cladding. These features are not disclosed in the prior art D3.

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19. Now, a reference may be made to the complete specification of the Subject Application, which further distinguishes the Subject Invention from prior art D3:

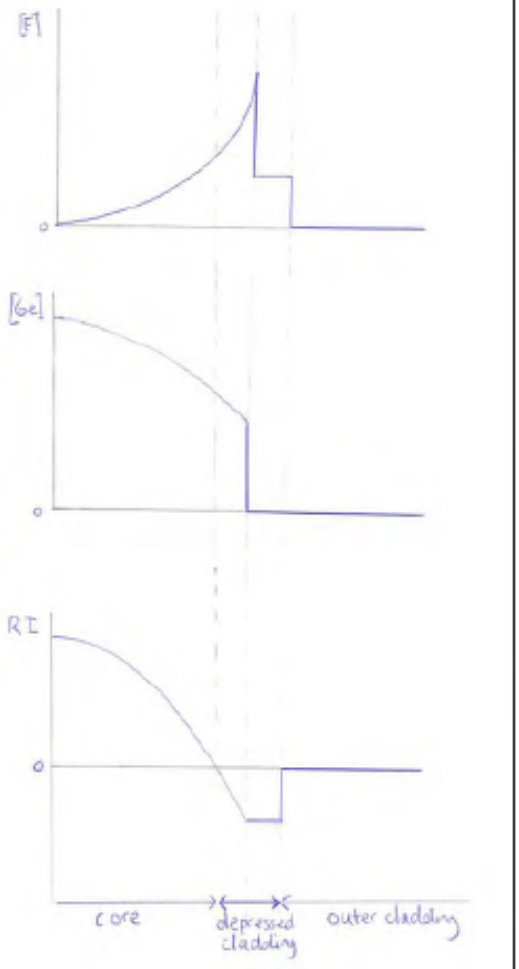
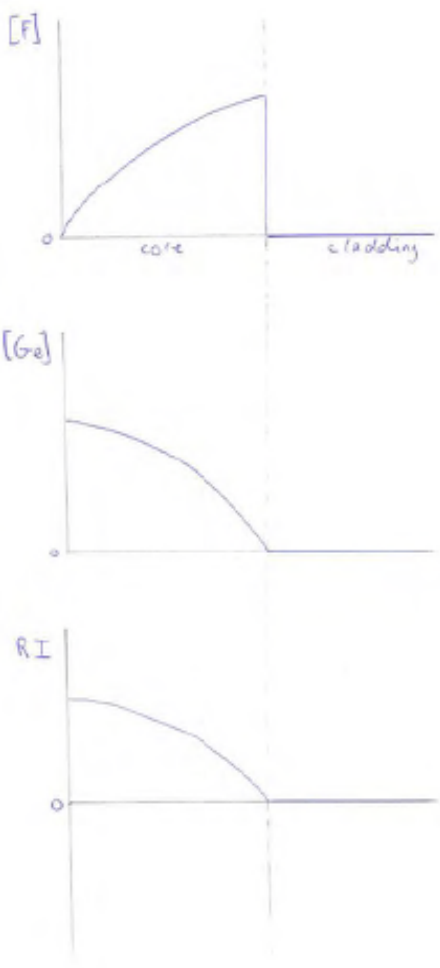
> "*The invention proposes fabricating the total alpha profile by co-doping with at least two dopants.* ***One dopant increasing the refractive index of silica, e.g. Germanium, is predominant in the core and one dopant reducing the refractive index of silica e.g****. **Fluorine, is predominant in the depressed cladding. However, both dopant are present in both the core and the depressed cladding.** **The concentration of each dopant is controlled so as to obtain a continuous variation and a continuous derivative with respect to the fiber radius****."*
>
> [emphasis supplied]

20. It is discernible from the above that in the Subject Invention, both the dopants are present in the 'core' as well as in the 'depressed cladding'. This feature is distinct from the prior art D3, where doping is performed only for the core, since D3 does not have a 'depressed cladding'.

21. D3 also does not disclose the feature regarding control of the concentration of the dopants so as to obtain a continuous variation and a continuous derivative with respect to fibre radius.

22. The impugned order, while analysing the prior art D3, made reference to examples 7 to 10 in D3, which correspond to figures 21 to 24 of D3, demonstrating that the concentration of Germanium is reduced from the centre of the core towards the boundary between the core and cladding and is 'zero' at the boundary between the core and the cladding. The comparison table of the Subject Application with the cited prior art document D3, as filed by the appellant along with the written submissions, is set out below:

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The Subject Application	Cited Prior Document D3
	

23. The comparison above would show that in D3, the concentration level of Fluorine [F] changes abruptly, and the Germanium [Ge] changes continuously without a step portion at the interface of the core and the cladding. Whereas, in the Subject Invention, with the presence of a 'depressed cladding', there is a step process involved in terms of which the changes in the Fluorine and Germanium levels between the core and the cladding take place in a graded manner. Moreover, the refractive index [RI]

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of the 'depressed cladding' of the Subject Invention is lower than that of the outer cladding. Therefore, the Subject Invention is in the nature of an improvement over the prior art D3 inasmuch as it avoids a 'cladding effect' and achieves better control over the refractive index, which results in the increase of the bandwidth.

24. Hence, from the comparative analysis detailed above, it is clear that D3 fails to disclose all the features of the Subject Invention. In view of the above, the impugned order refusing the Subject Application for 'lack of novelty' is liable to be set aside.

Objection on lack of Inventive step

25. As regards the ground of 'lack of inventive step', the impugned order does not give any reasons for the same and simply makes a reference to the hearing notice dated 5th September, 2019. There has been no independent analysis on this aspect.

26. The inventive step assessment requires a comprehensive analysis based on the combined teaching of the cited prior arts. However, this analysis has not been done in the impugned order.

27. At this stage, reference may be made to the judgment of a Coordinate Bench of this Court in ***Agriboard International LLC* v. *Deputy Controller of Patents and Designs***, 2022 SCC OnLine Del 940. The relevant observations are set out below:

> *"23. The said reasoning has been reiterated by the Supreme Court in Manohar v. State of Maharashtra & Ors. AIR 2013 SC 681 wherein it has been categorically observed that* ***application of mind and recording of reasoned decision are the basic elements of natural justice. There can be no doubt that scrupulous adherence to these principles would be required while rejecting patent applications****.*
>
> *24. In the opinion of this Court, while rejecting an invention for lack of*

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inventive step, the Controller has to consider three elements-

- *the invention disclosed in the prior art,*
- *the invention disclosed in the application under consideration, and*
- *the manner in which subject invention would be obvious to a person skilled in the art.*

25. Without a discussion on these three elements, arriving at a bare conclusion that the subject invention is lacking inventive step would not be permissible, unless it is a case where the same is absolutely clear. Section 2(1(ja) of the Act defines „inventive step" as under:

> *(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.*

26. ***Thus, the Controller has to analyse as to what is the existing knowledge and how the person skilled in the art would move from the existing knowledge to the subject invention, captured in the application under consideration. Without such an analysis, the rejection of the patent application under Section 2(1)(ja) of the Act would be contrary to the provision itself.*** *The remaining prior arts which are cited by ld. Counsel having not been considered in the impugned order, the Court does not wish to render any opinion in this regard."*

[emphasis supplied]

28. In light of the foregoing analysis, the impugned order dated 19th November, 2019 rejecting the Subject Application of the appellant is set aside and the matter is remanded back to the Patent Office for fresh consideration in light of what is stated above.

29. The Patent Office shall pass a reasoned order taking into account all the relevant considerations within three months from today after issuing a fresh hearing notice in which all remaining objections shall be taken.

30. The Registry is directed to supply a copy of the present order to the office of the Controller General of Patents, Designs and Trademarks of India

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on e-mail- llc-ipo@gov.in for compliance.

31. The appeal stands disposed of in terms of the above.

AMIT BANSAL
(JUDGE)

DECEMBER 6, 2024
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