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**Datasheet for the decision
of 20 April 2023**

Case Number: T 0487/20 - 3.2.03

Application Number: 15190704.5

Publication Number: 3002346

IPC: C23C16/455, C23C16/54,
C23C16/40

Language of the proceedings: EN

Title of invention:

DEPOSITION METHOD

Patent Proprietor:

Eastman Kodak Company

Opponents:

Solaytec B.V.

Levitech B.V.

Headword:

Relevant legal provisions:

EPC Art. 100(c), 76(1), 123(2), 111

RPBA 2020 Art. 12(4), 13(2)

Keyword:

Grounds for opposition - subject-matter extends beyond content of earlier application (yes)

Amendment to case - complexity of amendment (no) - reasons for submitting amendment in appeal proceedings (yes)

Amendment after summons

Divisional application - added subject-matter (no) - after amendment

Amendments - allowable (yes)

Appeal decision - remittal to the department of first instance (yes)

Decisions cited:

G 0002/98, G 0002/10, J 0014/19, T 0017/86, T 0907/90,

T 0284/94, T 0470/05, T 0522/11, T 1362/15, T 2282/16,

T 0873/94, T 0165/98, T 0172/17, T 0574/17

Catchword:



Beschwerdekammern

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Case Number: T 0487/20 - 3.2.03

D E C I S I O N
of Technical Board of Appeal 3.2.03
of 20 April 2023

Appellant: Eastman Kodak Company
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Decision under appeal: **Decision of the Opposition Division of the
European Patent Office posted on 18 December
2019 revoking European patent No. 3002346
pursuant to Article 101(3)(b) EPC.**

Composition of the Board:

Chair C. Herberhold
Members: B. Miller
 N. Obrovski

Summary of Facts and Submissions

I. European patent No. EP 3 002 346 B1 ("the patent") relates to a process for the deposition of thin-film materials using a distribution head directing simultaneous gas flows onto a substrate.

II. Two oppositions against the patent were filed on the grounds of Article 100(b) and (c) EPC and Article 100(a) EPC in respect of Articles 54 and 56 EPC.

The opposition division concluded that the grounds for opposition under Article 100(c) EPC prejudiced maintenance of the patent, and revoked it.

III. This decision was appealed by the patent proprietor ("the appellant").

In the statement setting out the grounds of appeal, the appellant requested that the decision under appeal be set aside and that the case be remitted to the opposition division for further prosecution on the basis of the main request, i.e. the claims of the patent as granted, or alternatively on the basis of auxiliary requests I and II as submitted at the same time as the statement of grounds of appeal.

IV. With the summons to oral proceedings, the Board sent a communication pursuant to Article 15(1) RPBA 2020 indicating to the parties its preliminary, non-binding opinion that claims 1 to 14 of the main request did not fulfil the requirements of Article 76(1) EPC, but that claim 1 of auxiliary request II included the feature which the opposition division had found to be missing.

- V. With a letter dated 6 April 2023, respondent 1 (opponent 1) stated that it would not attend the oral proceedings before the Board.
- VI. Oral proceedings were held on 20 April 2023 by videoconference in the absence of respondent 1, in accordance with Article 15(3) RPBA 2020 and Rule 115(2) EPC.
- VII. At the end of the oral proceedings, the following requests were maintained by the parties.

The appellant requested that the decision under appeal be set aside and that the case be remitted to the opposition division for further prosecution on the basis of the main request, i.e. the claims of the patent as granted, or alternatively on the basis of the auxiliary request as submitted during the oral proceedings before the Board.

Respondent 2 (opponent 2) requested that the appeal be dismissed.

Respondent 1 did not participate in the appeal proceedings.

- VIII. Wording of the independent claims under consideration in this decision

Claim 1 as granted, including the numbering of its features as presented in point II.3.7 of the contested decision, reads as follows (amendments compared to claim 42 of the parent application are marked in **bold**; further amendments compared to claim 1 of the application are additionally marked in *italics*).

- 1.) A process for depositing a thin film material on a substrate, comprising:
 - 1.1) simultaneously directing a series of gas flows from an output face of a delivery head of a thin film deposition system toward a surface of the substrate,
 - 1.2) the series of gas flows including at least a first reactive gaseous material, an inert purge gas, and a second reactive gaseous material,
 - 1.3) **the gas flow of the first reactant gaseous material and the gas flow of the second reactant gaseous material separated by the gas flow of the inert purge gas**
 - 1.4) **such that little or no intermixing occurs between the first reactant gaseous material and the second reactant gaseous material,**
 - 1.5) one or more of the gas flows providing a pressure that at least contributes to the separation of the surface of the substrate from the face of the delivery head
 - 1.6) **such that the substrate is at a separation distance of within 0.3 mm of the output face of the delivery head; and**
 - 1.7) **providing relative motion between the delivery head and the surface of the substrate**
 - 1.8) such that the first reactive gaseous material reacts with a surface of the substrate treated with the second reactive gaseous material.

Claim 1 of the auxiliary request reads as follows (amendment compared to claim 1 as granted is marked in **bold** by the Board).

A process for depositing a thin film material on a substrate, comprising:
simultaneously directing a series of gas flows from an output face of a delivery head of a thin film deposition system toward a surface of the substrate, the series of gas flows including at least a first reactive gaseous material, an inert purge gas, and a second reactive gaseous material, the gas flow of the first reactant gaseous material and the gas flow of the second reactant gaseous material separated by the gas flow of the inert purge gas such that little or no intermixing occurs between the first reactant gaseous material and the second reactant gaseous material **from output channels to exhaust channels interspersed between the output channels**, one or more of the gas flows providing a pressure that at least contributes to the separation of the surface of the substrate from the face of the delivery head such that the substrate is at a separation distance of within 0.3 mm of the output face of the delivery head; and
providing relative motion between the delivery head and the surface of the substrate such that the first reactive gaseous material reacts with a surface of the substrate treated with the second reactive gaseous material.

IX. The appellant's arguments can be summarised as follows.

(a) Main request - Article 100(c) EPC

The parent application of the patent should not be interpreted literally. Claim 1 was based on features disclosed in claims 42, 46 and 61 of the parent application. The dependency of claims 46 and 61 (as well as several other dependent claims) only on claim 42, and the embodiments described with reference to

Figures 1 and 3A and 3B of the parent application, had to be interpreted in more general terms in view of the overall technical teaching of the parent application. Contrary to the respondent's arguments, the parent application did not teach that it was essential for the delivery head to have "open elongated output channels, substantially in parallel". In fact, the teaching on page 18 of the parent application was not limited to an apparatus that required a specific design or arrangement of the inlet channels or indeed the presence of exhaust channels at all. It was unambiguously clear - also with respect to feature 1.6 - that only the flow characteristics as described on page 18 were essential for the claimed process.

The amendments to claim 1 did not therefore extend beyond the teaching of the dependent claims and page 18 of the parent application.

(b) Auxiliary request - admittance

The filing of auxiliary requests I and II at the same time as the statement of grounds of appeal was a legitimate response to the decision under appeal. In particular - as confirmed in the Board's preliminary opinion - the proposed amendments to claim 1 of auxiliary request II recited the very feature which the opposition division had, according to its unexpected reasoning in the contested decision, considered to be missing. The amendments to claim 1 were not at all complex and did not cause any procedural delays.

The auxiliary request filed during the oral proceedings was identical to the auxiliary request II submitted with the statement of grounds of appeal, but with all dependent claims deleted. The deletion of all the

dependent claims was a direct response to the objections raised by respondent 2 and the Board. It should be admitted, since it did not shift the discussion in unexpected directions. Furthermore, the deletion of claims did not involve any additional burden for the other party and did not give rise to any new objections.

(c) Auxiliary request - admittance of the clarity objection

Claim 1 of the auxiliary request was identical to claim 1 of the former auxiliary request II that had been filed at the same time as the statement of grounds of appeal. In its reply to the appeal, respondent 2 had not raised any clarity objections in relation to claim 1 of former auxiliary request II. The deletion of all the dependent claims did not affect the clarity of the wording of independent claim 1. Hence, there were no exceptional circumstances to justify raising clarity objections regarding the wording of claim 1 for the first time during the oral proceedings before the Board.

Moreover, the clarity objection was not *prima facie* relevant. The feature "such that little or no intermixing occurs between the first reactant gaseous material and the second reactant gaseous material" was not rendered unclear by adding the phrase "from output channels to exhaust channels interspersed between the output channels". In the context of claim 1, the contested wording did not represent a mere statement of a desired wish, and left no doubt as to how the specified feature was to be achieved, namely by the use of purge gas.

(d) Auxiliary request - admittance of further argument concerning added matter

During the oral proceedings, respondent 2 argued for the first time that claim 1 of the auxiliary request constituted an intermediate generalisation of the embodiment described on page 18 of the parent application, due to the omission of the requirement that no intermixing with other gas streams occurred. This new argument should have been raised earlier in the proceedings and should not therefore be admitted into the proceedings. The same applied to the objection that the functional link ("such that") between features 1.5 and 1.6 was not derivable from the parent application.

(e) Auxiliary request - amendments

Claim 1 of the auxiliary request was based on the embodiment described on page 18 of the parent application. The feature that had been found to be missing from claim 1 as granted was present in claim 1 of the auxiliary request.

Furthermore, considering the overall disclosure on page 18 of the parent application, it was directly and unambiguously derivable that the purge gas separated the reactant gases. The reference to "other gas streams" on page 18 was therefore immediately understood as also referring to the reactant gases. Moreover, the parent application disclosed, in the embodiment on page 18, that the delivery head floated on the substrate surface due to the gas flow of the reactant gases. Therefore it disclosed the functional link ("such that") between features 1.5 and 1.6.

The arguments relating to the amendments compared to the parent application applied correspondingly to the amendments compared to the application as originally filed.

X. Respondent 2 responded to the above points by arguing as follows.

(a) Main request - Article 100(c) EPC

Most of the dependent claims of the parent application were dependent on a single claim, and hence disclosed only a limited number of combinations of features. The disclosure on page 18 of the parent application was linked to the specific embodiments illustrated in Figures 1, 3A and 3B. The parent application did not disclose on page 18 that the outlet channels could be omitted or that the inlet channels could be of any design. Rather, the parent application disclosed that the delivery head had to comprise "open elongated output channels, substantially in parallel" with "exhaust channels interspersed between the output channels". These essential features disclosed on page 18 of the parent application were not part of the subject-matter of claim 1. In addition, claim 1 specified that no intermixing occurred, due to the use of purge gas. This was contrary to the teaching on page 18 of the parent application, according to which pressure fields were essential to achieve this effect.

The subject-matter of claim 1 therefore extended beyond the teaching of the parent application.

(b) Auxiliary request - admittance

The auxiliary request was based on auxiliary request II, filed for the first time at the same time as the statement of grounds of appeal. Auxiliary request II could and should already have been filed during the opposition proceedings, since the objection under Article 100(c) EPC had already been raised in the notice of opposition. The same argument applied correspondingly to the auxiliary request.

The auxiliary request was *prima facie* not allowable. On the one hand, the amended wording "such that little or no intermixing occurs between the first reactant gaseous material and the second reactant gaseous material from output channels to exhaust channels interspersed between the output channels" was merely wishful thinking, and was thus unclear.

On the other hand, the amendments in claim 1 were *prima facie* not allowable for the same reasons as those discussed in the context of the main request. In addition, claim 1 did not specify that little or no intermixing of other gas streams such as ambient air occurred, contrary to the disclosure on page 18 of the parent application. Further, the functional link ("such that") between features 1.5 and 1.6 was not derivable from the parent application.

The appellant could and should have filed a request without any dependent claims earlier, during the written part of the appeal proceedings, since the respondent had already raised the added-matter objection concerning the dependent claims in its reply to the appeal.

(c) Auxiliary request - admittance of the clarity objection

The amended phrase "such that little or no intermixing occurs between the first reactant gaseous material and the second reactant gaseous material from output channels to exhaust channels interspersed between the output channels" claimed nothing more than a wish, and was therefore unclear. Hence, the clarity objection was *prima facie* relevant and should be admitted into the appeal proceedings.

(d) Auxiliary request - admittance of further argument concerning added matter

The main point of discussion in the appeal proceedings was the allowability of the amendments in claim 1 in relation to the disclosure on page 18 of the parent application. Hence, the argument concerning the omission of the requirement that no intermixing with other gas streams occurs from the teaching presented on page 18 of the parent application was linked to the appeal case and should be admitted into the appeal proceedings. The same argument applied to the further objection that the functional link ("such that") between features 1.5 and 1.6 was not derivable from the parent application.

(e) Auxiliary request - amendments

Claim 1 of the auxiliary request represented a further unallowable intermediate generalisation of the embodiment described on page 18 of the parent application, as argued in relation to claim 1 of the main request. Furthermore, the claimed subject-matter went beyond the teaching of the parent application,

since claim 1 required that little or no intermixing occurred between the first reactant gaseous material and the second reactant gaseous material, contrary to the teaching on page 18 of the parent application, which taught in more general terms that little or no intermixing of other gas streams occurred. In addition, the parent application did not disclose that the gas pressure according to feature 1.5 was responsible for the fact that the substrate was at a separation distance of within 0.3 mm according to feature 1.6. Hence, the functional link ("such that") between features 1.5 and 1.6 was not derivable from the parent application.

The arguments relating to the amendments compared to the parent application applied correspondingly to the amendments compared to the application as originally filed.

Reasons for the Decision

1. Main request - Article 100(c) EPC

1.1 The contested decision is based on the grounds for opposition under Article 100(c) EPC.

Claim 1 as granted, which forms the main request, is based on claim 42 of the "parent application" (publication WO 2008/085467 A1) and on claim 1 of "the application" as filed (divisional application as published, EP 3 002 346 A1).

1.2 Preliminary remark

1.2.1 In line with the general principles developed *inter alia* in G 2/98 and G 2/10 by the Enlarged Board of Appeal, which govern the requirements of Article 123(2) EPC and accordingly Article 76(1) EPC, the skilled person must be able to derive the claimed subject-matter directly and unambiguously, using common general knowledge, and seen objectively and relative to the date of filing, from the original application and the parent application as a whole.

The Board therefore agrees with the appellant's argument that a purely literal interpretation of the content of an application is inappropriate, and that the skilled person considers the content of an application in the light of the common general knowledge which forms part of the skilled person's professional skills.

1.2.2 The specific cases cited by the appellant (T 0165/98, T 0873/94, T 907/90, T 17/86, T 284/94 and T 470/05) are in line with established case law that the whole content of the application as filed has to be considered when determining the teaching of an application as filed, and that in particular the description as a whole can provide the technical teaching to be considered when assessing the allowability of amendments.

However, for an amendment to be allowable, the subject-matter generated by the amendment must nevertheless be directly and unambiguously derivable from the application as filed and, if applicable, from the respective parent application.

- 1.2.3 The dependent claims of the parent application do not provide an appropriate teaching for a combination of the subject-matter defined therein, since most of the dependent process claims refer directly (and exclusively) back to a single claim.

According to established case law, when determining the disclosure of claims their dependencies must be considered, see for example T 1362/15 (point 4 of the Reasons), T 522/11 (point 1.9 of the Reasons) or T 2282/16 (point 2.3 of the Reasons).

The literal technical teaching and the logical structure provided by the claims of the parent application does not therefore support any amendment which is based only on a combination of dependent claims.

- 1.3 Feature 1.6

Feature 1.6 of claim 1 as granted is based on claim 61 of the parent application.

Claim 61 of the parent application refers back to claim 42. Hence, the combination of the features of dependent claim 61 and independent claim 42 of the parent application fulfils the requirements of Article 76(1) EPC.

- 1.4 Feature 1.7

Feature 1.7 is disclosed in claim 46 of the parent application.

However, dependent claims 46 and 61 of the parent application do not provide an appropriate technical

teaching concerning the combination of their features, since they are both dependent on only a single claim, namely claim 42, see the preliminary remark in point 1.2 above.

Nevertheless, it is disclosed in the description of the parent application that the process of the invention aims at the provision of a continuous process (see page 10, line 30 to page 11, line 2 and page 12, lines 14 to 16) and therefore provides relative motion between the delivery head and the surface of the substrate (see page 16, lines 17 to 27). Furthermore, a relative movement is illustrated in Figure 1 of the parent application by a double arrow "A".

It follows that feature 1.7 is directly and unambiguously derivable from the parent application.

1.5 Features 1.3 and 1.4

1.5.1 Features 1.3 and 1.4 are closely related and thus are considered in combination.

As set out in points II.3.12 and II.3.13 of the contested decision, the opposition division considered that feature 1.4 of claim 1 failed to mention the exhaust channels 22 for the gas streams, as well as their shape and position in combination with the output channels 12, as described on page 18, lines 10 to 28 of the description and illustrated in Figures 1, 3A and 3B of the parent application.

The appellant objects to the reasoning of the contested decision and argues that the embodiment described on page 18 of the parent application provides appropriate support for the amendment and that the exhaust

channels, their shape and position are not essential and therefore do not need to be incorporated into claim 1. The separated flow of the reactants is essential to the claimed process, but not the specific shape or design of the outlet and exhaust channels.

- 1.5.2 The Board observes that, in the context of a possible "delivery head for atomic layer deposition according to the present invention" as shown in Figures 1, 3A and 3B, the parent application describes the effect achieved by the invention, on page 18, lines 23 to 28.

"Importantly, the effect of allowing the delivery head to approach the substrate such that it is supported by gas pressure, helps to provide isolation between the gas streams. By allowing the head to float on these streams, pressure fields are set up in the reactive and purge flow areas that cause the gases to be directed from inlet to exhaust with little or no intermixing of other gas streams."

The technical teaching provided by this statement on page 18 of the parent application corresponds in principle to features 1.3 and 1.4.

- 1.3) *the gas flow of the first reactant gaseous material and the gas flow of the second reactant gaseous material separated by the gas flow of the inert purge gas*
("helps to provide isolation between the gas streams", see page 18, line 25)

- 1.4) *such that little or no intermixing occurs between the first reactant gaseous material and the second reactant gaseous material*

("with little or no intermixing of other gas streams", see page 18, lines 27 to 28).

- 1.5.3 The further requirement in order to achieve this effect, "[b]y allowing the head to float on these streams, pressure fields are set up in the reactive and purge flow areas", according to page 18, lines 25 to 27 is inherently reflected in feature 1.5 of claim 1, "one or more of the gas flows providing a pressure that at least contributes to the separation of the surface of the substrate from the face of the delivery head", which corresponds to the disclosure on page 18, lines 23 to 25. Hence, an explicit reference to pressure fields in claim 1 is not required to reflect the teaching of the parent application on page 18, contrary to the view of respondent 2.
- 1.5.4 The Board further observes that the parent application does not disclose that the specific shape of the delivery channels or the use of a diffuser is essential to achieve the effect mentioned on page 18. It cannot be concluded that the teaching on page 18 is limited to a process in which the gas flows are provided from a series of "open elongated output channels, substantially in parallel". This characteristic is neither specified on page 18 nor directly and unambiguously derivable from the schematic figures of the parent application. The mere fact that such a provision can be found in dependent claim 43 of the parent application does not provide a direct teaching that the specific arrangement is essential, since the disclosure in dependent claim 43 is not linked to any of the features specified in the remaining dependent claims, see preliminary remark above in point 1.2.

1.5.5 However, the teaching on page 18 of the parent application is limited to an embodiment in which the delivery head provides gas inlets and gas exhausts (page 18, lines 12-14) and accordingly achieves the described effect of reactant gas separation "from inlet to exhaust" in an arrangement in which gas inlets and exhausts are both located in the delivery head, see page 18, line 27 and Figure 1.

Contrary to the argument of the appellant, therefore, the expression "from inlet to exhaust" on page 18 of the parent application does not merely clarify that intermixing of the reactant gas flows is reduced/prevented from the beginning of the flows until the end; rather, the expression further limits this effect and teaching to a process in which exhausts are provided in the delivery head.

The appellant argues that the individual features of the apparatus are not essential to the claimed process. Rather, "the key in the process is the flow themselves, not the output openings or channels", see letter of 15 January 2021, page 3, point 2.2.

However, as a result of specifying where the output channels and exhausts are located ("exhaust channels interspersed between the output channels"), the distance and direction of the flow are inherently defined.

The parent application does not teach that the effect described on page 18 can be obtained over a greater distance than if the exhausts were not "interspersed between the output channels" but located somewhere else in the apparatus, e.g. on an additional exhaust head downstream, or simply on top of the reaction chamber.

The limitation concerning the design of the delivery head as presented in the parent application is not derivable from claim 1 of the patent.

- 1.5.6 The addition of features 1.3 and 1.4 to claim 1 therefore extends beyond the technical teaching of the parent application, contrary to the requirements of Article 76(1) EPC.

Hence, the grounds for opposition pursuant to Article 100(c) EPC prejudice maintenance of the patent as granted.

2. Auxiliary request - admittance under Article 13(2) RPBA 2020

- 2.1 The auxiliary request is based on the former auxiliary request II, which had been submitted by the appellant with its statement of grounds of appeal.

As the appellant filed the auxiliary request during the oral proceedings before the Board, the provisions of Article 13(2) RPBA 2020 apply. According to this provision, any amendment to a party's appeal case shall, in principle, not be taken into account unless there are exceptional circumstances, which have been justified with cogent reasons by the party concerned.

Any part of a party's appeal case which is not directed to the requests, facts, objections, arguments and evidence contained in the statement of grounds of appeal or the reply constitutes an amendment to a party's appeal case within the meaning of Article 13(1) and (2) RPBA 2020. This includes the filing of an

amended claim request (see J 14/19, Reasons 1.4 and 1.5).

Therefore, the simple deletion of dependent claims from a claim request, as in the present case, also constitutes an amendment of the appeal case within the meaning of Article 13(1) and (2) RPBA 2020.

2.2 When exercising its discretion under Article 13(2) RPBA 2020, the board may rely on criteria as set out in Article 13(1) RPBA 2020 (see T 172/17, Reasons 5.4, and T 574/17, Reasons 2.3.1). This in turn provides the possibility of relying on the criteria as set out in Article 12(4) to (6) RPBA 2020, which are referred to in Article 13(1) RPBA 2020.

2.3 In the case at hand, in the communication under Article 15(1) RPBA 2020 the Board had given its preliminary opinion that the amendments to claim 1 of the main request (patent as granted) did not meet the requirements of Article 76(1) EPC. In point 4.4.4 of the communication, the Board further indicated that the question of whether the subject-matter of dependent claims 2 to 14 fulfilled the requirements of Article 76(1) EPC in view of the teaching of the parent application would be discussed during the oral proceedings.

2.4 The amendment to the auxiliary request compared to the auxiliary request II that had already been submitted with the statement of grounds of appeal directly addresses the objection under Article 76(1) EPC regarding the dependent claims, as presented by respondent 2 and as discussed in detail during the oral proceedings before the Board. Deletion of the dependent claims is purely for the purpose of overcoming the

objection under Article 76(1) EPC. It does not bring about a shift in the discussion to subject-matter which had not been discussed by the parties before.

Furthermore, the amendment does not involve any additional burden for the other party or the Board, but simply eliminates contentious points of discussion.

Overall, although the appellant amended its appeal case only in response to the Board's preliminary opinion, it did so in a manner which clearly served procedural economy. The Board also notes that the new auxiliary request replaced all previous auxiliary requests.

2.5 Furthermore, the amendments to claim 1 of the auxiliary request do not *prima facie* give rise to new objections regarding the allowability of the amendments or clarity.

2.5.1 As to the question of whether the amended subject-matter is directly and unambiguously derivable from the parent application and the application as originally filed, the same points of discussion apply to claim 1 of the auxiliary request as to claim 1 as granted, since the same embodiment on page 18 and the same figures of the parent application have to be considered as a whole in order to evaluate the allowability of the amendments. This inherently also includes the question of whether the phrase "with little or no intermixing of other gas streams" on page 18, lines 27 and 28 of the parent application provides a disclosure for the feature of claim 1 "that little or no intermixing occurs between the first reactant gaseous material and the second reactant gaseous material", which was already present in claim 1 as granted. The same applies with regard to the question of whether the functional

link ("such that") between features 1.5 and 1.6 was derivable from the parent application.

Thus, filing of the auxiliary request does not give rise to additional points of discussion concerning the allowability of amendments.

- 2.5.2 Amended claim 1 of the auxiliary request specifies that "little or no intermixing occurs between the first reactant gaseous material and the second reactant gaseous material from output channels to exhaust channels interspersed between the output channels".

Contrary to the argument made by respondent 2, the addition of the phrase "from output channels to exhaust channels interspersed between the output channels" to the wording of claim 1 as granted does not *prima facie* render the claimed wording unclear.

Claim 1 as granted specifies in general terms that little or no intermixing occurs between the reactant gases. Stating in more specific terms that little or no intermixing occurs between the reactant gases from output channels to exhaust channels interspersed between the output channels clarifies the claimed subject-matter, in fact, since the amendment specifies the area and dimension in which this is to be achieved.

Moreover, the wording of claim 1 is not simply wishful thinking. On the contrary, claim 1 of the auxiliary request also specifies how the little or no intermixing of reactants from output channels to exhaust channels interspersed between the output channels can be achieved, namely by the gas flow of the inert purge gas.

Therefore, the amendment does not *prima facie* render the wording of claim 1 unclear.

2.6 As the auxiliary request consists of claim 1 of former auxiliary request II, the Board considers it appropriate also to address - in the context of admittance of the auxiliary request - why it had intended to admit former auxiliary request II into the appeal proceedings (see point 5. of the Board's communication under Article 15(1) RPBA 2020). Claim 1 of the former auxiliary request 2 (and thus also claim 1 of the present auxiliary request) was filed with the statement of grounds of appeal and amended to recite the additional feature "from output channels to exhaust channels interspersed between the output channels", which directly addressed the objection of the opposition division in point II.3.12 of the contested decision that the omission of this feature resulted in an intermediate generalisation. Hence, both the basis for the amendment in the parent application and the reason the amendment overcomes the objections raised in the contested decision were immediately apparent. The appellant had also provided reasons, as required by Article 12(4) RPBA 2020, second paragraph, as to why it filed the former auxiliary request II only in the appeal proceedings, albeit at the earliest possible opportunity in those proceedings.

2.6.1 Nor can it be inferred from the discussions during the opposition proceedings that the appellant should already have submitted former auxiliary request II to the opposition division, in the sense of Article 12(6) RPBA 2020. In the preliminary opinion annexed to the summons to attend oral proceedings before the opposition division, the opposition division indicated

that the opponent's objections under Article 100(c) EPC were not convincing.

Only during preparation for the oral proceedings did respondent 2, then opponent 2, submit new arguments in its letter dated 2 October 2019, the main argument being the absence of a definition of the shape and design of the inlet channels ("the gas flows are provided from a series of open elongated output channels, substantially in parallel"). This objection was then extensively discussed during the oral proceedings before the opposition division, see point 3 of the minutes.

However, the arguments set out in the contested decision were only touched on briefly in the last paragraph on page 4 of the letter dated 2 October 2019, which was submitted shortly before the oral proceedings. During the oral proceedings before the opposition division, the arguments were discussed only in the context of a single question by the first examiner of the opposition division, see point 5.2 of the minutes.

Thus, although the appellant undisputedly had an opportunity to respond during the oral proceedings before the opposition division, in the circumstances the Board does not consider that the appellant was under an obligation to respond immediately in the limited time available during the oral proceedings before the opposition division, which lasted only 75 minutes in total.

2.7 In view of the above, the Board decides to admit the auxiliary request into the appeal proceedings under Article 13(2) RPBA 2020.

3. Auxiliary request - admittance of the clarity objection

During the oral proceedings before the Board, the respondent argued for the first time that the phrase "from output channels to exhaust channels interspersed between the output channels" in the context of claim 1 was wishful thinking and therefore rendered the claimed subject-matter unclear.

Although claim 1 of the auxiliary request corresponds to claim 1 of the auxiliary request II that had been filed at the same time as the statement of grounds of appeal, respondent 2 did not raise this clarity objection concerning claim 1 of auxiliary request II in its reply to the appeal.

The simple deletion of all dependent claims does not affect the clarity of the wording of the sole independent claim.

Hence, there are no cogent reasons, as required by Article 13(2) RPBA 2020, for raising clarity objections regarding the wording of claim 1 of the auxiliary request for the first time during the oral proceedings.

Moreover, the clarity objection is not *prima facie* relevant, as set out above in point 2.5.2.

Therefore, the Board does not admit the clarity objection into the appeal proceedings (Article 13(2) RPBA 2020).

4. Auxiliary request - admittance of further argument concerning added matter

During the oral proceedings, for the first time in the appeal proceedings, respondent 2 argued that claim 1 of the auxiliary request constituted an intermediate generalisation due to the omission of the requirement disclosed on page 18 of the parent application that little or no intermixing of other gas streams occurred.

This argument is linked to the main point of discussion, i.e. the allowability of the amendments in view of the embodiment described on page 18 of the parent application. Hence this argument is not the basis of a new line of attack or a completely new objection, but rather relates to the reasoning in the contested decision and the appellant's counter-arguments.

The same reasoning applies regarding the argument that the functional link ("such that") between features 1.5 and 1.6 was not derivable from the embodiment described on page 18 of the parent application.

Therefore, the Board admits these new arguments into the appeal proceedings (Article 13(2) RPBA 2020).

5. Auxiliary request - Article 76 EPC

5.1 Claim 1 of the auxiliary request is amended to recite the additional feature "from output channels to exhaust channels interspersed between the output channels" in line with the disclosure on page 18, lines 12 to 14 of the parent application.

5.2 In addition to the arguments already presented in relation to claim 1 as granted, respondent 2 argues that the phrase "little or no intermixing occurs between the first reactant gaseous material and the second reactant gaseous material from output channels to exhaust channels interspersed between the output channels" in claim 1 of the auxiliary request constitutes an intermediate generalisation, due to the omission of the requirement disclosed on page 18 of the parent application that little or no intermixing of other gas streams occurs.

This argument is not convincing.

The parent application describes in general terms, on page 18, lines 25 to 28:

"By allowing the head to float on these streams, pressure fields are set up in the reactive and purge flow areas that cause the gases to be directed from inlet to exhaust with little or no intermixing of other gas streams."

Although this statement on page 18 refers to "little or no intermixing of other gas streams", it has to be understood in the context of the rest of the description on page 18, in particular the preceding sentence on page 18, lines 23 to 25.

"Importantly, the effect of allowing the delivery head to approach the substrate such that it is supported by gas pressure, helps to provide isolation between the gas streams."

Hence, the embodiment described on page 18 of the parent application leaves no doubt that the gas streams

referred to in the next sentence are the reactant gas streams, since no other gas streams are described in the context of the embodiment on page 18.

The parent application discloses, for example in claim 53, that the process can be performed under ambient air. However, this further and separate teaching in the parent application does not change the direct and unambiguous understanding of the disclosure on page 18 regarding the reactant gas streams, since ambient air is not used as a further gas stream in the context of the embodiment on page 18, nor is it used as a gas stream in claim 53 of the parent application.

- 5.3 Respondent 2 argues further that the functional link ("such that") between features 1.5 and 1.6 was not derivable from page 18 of the parent application. In its view, the parent application did not disclose that the separation distance of within 0.3 mm was achieved by the gas flow according to feature 1.5, which contributes to separation of the surface of the substrate from the face of the delivery head.

This argument is not convincing.

The parent application discloses, on page 18, lines 18 to 26, that the gas pressure between output face of the delivery head and the surface of the substrate provides a gas fluid bearing and allows the head to float on the gas streams. This teaching on page 18 of the parent application concerning a "floating" of the head on the gas bearing inherently implies that the distance between the substrate surface and the delivery head is achieved by the gas pressure, which is counterbalanced by gravity.

Hence the term "such that", which functionally links features 1.5 and 1.6 of claim 1, is directly and unambiguously based on the disclosure provided by the parent application on page 18.

- 5.4 Following on from the arguments above in point 1.5.5 regarding the main request, it can therefore be concluded that the amendments to claim 1 of the auxiliary request are directly and unambiguously derivable from
- claims 42 and 61,
 - page 10, line 30 to page 11, line 2,
 - page 12, lines 14 to 16,
 - page 18, lines 10 to 28
- of the parent application and fulfil the requirements of Article 76(1) EPC.

6. Auxiliary request - Article 123(2) EPC

It is undisputed by the parties that the above arguments in relation to the requirements of Article 76(1) EPC apply equally in relation to the requirements of Article 123(2) EPC, since the description and the claim dependencies of the parent application are identical to those of the application as filed that underlies the patent.

The amendments to claim 1 of the auxiliary request therefore fulfil the requirements of Article 123(2) EPC for the reasons given above regarding Article 76(1) EPC.

7. Remittal to the opposition division

The opposition division has not yet decided upon the issues arising from the grounds for opposition pursuant to Article 100(a) and (b) EPC.

Both parties participating in the appeal proceedings requested that the case be remitted to the opposition division.

Thus, there are special reasons for remitting the case, within the meaning of Article 11 RPBA 2020.

Therefore, the Board decides to remit the case to the opposition division for further prosecution, in accordance with Article 111(1) EPC.

Order

For these reasons it is decided that:

1. The decision is set aside.
2. The case is remitted to the opposition division for further prosecution.

The Registrar:

The Chair:



C. Spira

C. Herberhold

Decision electronically authenticated