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**Datasheet for the decision  
of 4 November 2022**

**Case Number:** T 1058/20 - 3.3.06

**Application Number:** 09767101.0

**Publication Number:** 2291493

**IPC:** C10J3/66, C12P7/08, C10J3/02

**Language of the proceedings:** EN

**Title of invention:**  
METHODS FOR SEQUESTERING CARBON DIOXIDE INTO ALCOHOLS VIA  
GASIFICATION AND FERMENTATION

**Applicant:**  
Jupeng Bio (HK) Limited

**Headword:**  
Alcohol production / Jupeng

**Relevant legal provisions:**  
EPC Art. 123(2)  
RPBA 2020 Art. 13(2), 12(2), 12(4), 12(6)

**Keyword:**

Amendments - extension beyond the content of the application as filed (yes)  
amendment of the party's appeal case - new request limited to one alternative (yes)  
Late-filed request - should have been submitted in first-instance proceedings (yes)  
Exceptional circumstances (no)

**Decisions cited:**

T 2920/18, T 0494/18, T 2091/18, T 1597/16, T 1439/16,  
T 1224/15, T 0908/18, T 0682/16, T 0168/16, T 1480/16,  
T 2243/18, T 1792/19, T 1151/18

**Catchword:**

■



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Case Number: T 1058/20 - 3.3.06

**D E C I S I O N**  
**of Technical Board of Appeal 3.3.06**  
**of 4 November 2022**

**Appellant:** Jupeng Bio (HK) Limited  
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**Representative:** Smith, Julian Philip Howard  
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**Decision under appeal:** **Decision of the Examining Division of the European Patent Office posted on 19 November 2019 refusing European patent application No. 09767101.0 pursuant to Article 97(2) EPC.**

**Composition of the Board:**

**Chairwoman** J. Hoppe  
**Members:** R. Elsässer  
P. Ammendola

## **Summary of Facts and Submissions**

- I. The appeal lies from the decision of the examining division to refuse the application because all requests then on file (the main request and auxiliary requests 1 to 3) did not meet the requirement of Article 123(2) EPC.
  
- II. With the grounds of appeal, the appellant filed four sets of claims as auxiliary requests 1 to 4. The main request and auxiliary requests 1 and 2 corresponded to auxiliary requests 1 and 2 filed in the examining proceedings. The appellant argued that the main request, as considered by the examining division, and the four auxiliary requests met the requirements of Article 123(2) EPC. If the impugned decision were to be set aside, it requested that the application be remitted to the examining division for further prosecution on novelty and inventive step based on the claims of the main request. Moreover, the appellant requested a refund of the appeal fee on the basis of an alleged procedural violation.
  
- III. In its preliminary opinion, the board held that none of the requests filed with the grounds of appeal appeared to meet the requirements of Article 123(2) EPC.
  
- IV. With a submission of 23 December 2021, the appellant filed a new first auxiliary request and argued that the request should be admitted into the proceedings because it had been filed promptly in response to the preliminary opinion of the board, was not detrimental to procedural economy and was clearly allowable. Moreover, the request was filed at the first opportunity to submit a request which clearly had been

indicated to overcome the objections. The appellant further opined that due to an alleged inconsistency in the examining division's position, it was entitled to rely on the statement that oxygen in both chambers was an essential feature. With the board's preliminary opinion, it had been informed for the first time that the inconsistency with Article 84 EPC would not be considered. This unexpected development should be qualified as exceptional circumstances.

- V. With a submission of 28 October 2022, the appellant filed decision T 2920/18 in support of its request to admit the new first auxiliary request into the proceedings. Moreover, it announced it would not attend the oral proceedings and withdrew the corresponding request.
- VI. Oral proceedings were held on 4 November 2020 in the absence of the appellant by video conference.

The board established the appellant's final requests in writing as follows.

The appellant requested that the decision under appeal be set aside and the case be remitted to the examining division for further prosecution on the basis of the claims of the main request filed with the grounds of appeal  
or, as an auxiliary measure,  
that the claims of the new first auxiliary request, filed on 23 December 2021, be considered in the appeal,  
or  
that the application be proceeded on the basis of one of the auxiliary requests, labelled auxiliary requests 1 to 4, filed with the grounds of appeal.

The appellant further requested that the appeal fee be reimbursed.

## Reasons for the Decision

### 1. Main request - Article 123(2) EPC

Claim 1 of the main request reads as follows [additions vis-à-vis claim 20 as originally filed (PCT/US 2009/003685) are underlined]:

*"1. A method of producing alcohol comprising:  
injecting carbon dioxide and oxygen gas and  
carbonaceous material into a gasifier,  
wherein said gasifier comprises a lower chamber and an  
upper chamber,  
wherein a gaseous product from the lower chamber moves  
to the upper chamber,  
wherein oxygen is injected in the lower chamber and the  
upper chamber,  
and carbon dioxide is injected in the lower chamber,  
the upper chamber, or both chambers;  
creating syngas comprising carbon monoxide and  
hydrogen; contacting the syngas with biocatalyst in a  
fermentation container to produce an alcohol product  
mixture;  
and selectively recovering alcohol from the product  
mixture."*

#### 1.1 For the assessment of Article 123(2) EPC, the question to be answered is what a skilled person can derive directly and unambiguously, using common general knowledge, and seen objectively and relative to the

date of filing, from the whole of the documents as filed (the gold standard, see G 2/10, Reasons 4.3).

1.2 The subject-matter of claim 1 of the main request does not meet the requirements of Article 123(2) EPC for the following reasons.

1.2.1 As correctly pointed out by the appellant, claim 1 in essence encompasses three alternative embodiments:

- (i) one embodiment where oxygen and CO<sub>2</sub> are injected into the lower chamber and oxygen is injected into the upper chamber
- (ii) one embodiment where oxygen and CO<sub>2</sub> are injected into the upper chamber and oxygen is injected into the lower chamber
- (iii) one embodiment where CO<sub>2</sub> and oxygen are injected into both chambers

1.2.2 While the injection of both CO<sub>2</sub> and oxygen into the first and second chamber of a reactor is disclosed in the general part of the description on page 4, line 32 to page 5, line 3 and page 15, lines 18-22 of the description and also, albeit for a method of optimising syngas production, in claim 5 as originally filed, no such general disclosure can be found for embodiments (i) and (ii).

1.2.3 The appellant has argued that support for these two embodiments could be found "throughout the application as filed" and in particular in the example section of the application. At least examples 1 to 20 disclosed multiple examples according to all three options. In view of the more general disclosure that supported the injection of oxygen into both chambers as an essential feature, there was no reason why the skilled person would consider that this aspect be linked to the

specific conditions in one or more examples.

- 1.2.4 The appellant's arguments are not convincing. With regard to the general part of the application, there is no support for embodiments (i) and (ii). For instance, Figures 1-3 (see page 12, lines 25-33) disclose embodiment (iii) but not embodiments (i) or (ii), as correctly set out in the impugned decision on page 7. With regard to the methods disclosed in the example section (pages 18-21), they are much more specific than the two embodiments claimed. Under established case law, a feature disclosed only in a specific embodiment can be isolated and thus generalised from the embodiment only if there is no functional or structural relationship between this feature and other features of the embodiment (Case Law of the Boards of Appeal, 10th edn., II.E.1.9).
- 1.2.5 In the current case, this condition is not met for the following reasons. Examples 1-7 disclose methods in which oxygen and CO<sub>2</sub> are injected into the lower chamber and oxygen is injected into the upper chamber. Likewise, examples 8-14 disclose methods in which oxygen and CO<sub>2</sub> are injected into the upper chamber and oxygen is injected into the lower chamber. On page 18, lines 12-13, 21 and 28-29, such methods are also disclosed in more general terms. Thus, these passages disclose methods where oxygen and CO<sub>2</sub> are injected into the gasifier as required by embodiments (i) and (ii).
- 1.2.6 However, in all these methods, other aspects are disclosed to be functionally related to the injection of the oxygen into the respective chambers, for instance, the oxygen input and the temperature in the first chamber being controlled so that only a partial oxidation of carbonaceous material occurs and not



complete combustion (page 18, lines 13-15). On the same page (lines 16-19), the temperature range used to achieve this is also disclosed. For the skilled person, there can be no doubt that the conditions of the injection of oxygen (location, pure or mixed) into the chambers and the effect achieved, namely the partial oxidation, are technically interrelated.

- 1.2.7 Moreover, the temperature range of between 1750 to 2250 °F in the upper chamber is achieved by and therefore functionally related to the injection of pure oxygen (page 18, lines 21-22). This is immediately apparent from the wording used: "*Pure oxygen is introduced into the second stage to raise the temperature to about 1750 to about 2250 degrees F...*".

The appellant has argued that it followed from the description of Figures 1-3 on page 12, lines 25-32 that as an alternative to pure oxygen, air could be used. However, none of these figures or this passage relates to embodiment (i) or (ii). The appellant has also argued that it would be apparent to the skilled person that any type of additional oxygen could be injected into the upper chamber to achieve a temperature in this range. This was confirmed on page 18, lines 30-32, where it was disclosed for a one-stage gasifier that a temperature of 2250 °F could be reached by injection air, oxygen-enriched air or pure oxygen alike.

However, these arguments are not convincing since the question at stake is what the application does or does not disclose directly and unambiguously in the context of the relevant embodiments. The description on page 18 clearly distinguishes between the first stage where air, oxygen-enriched air or pure oxygen can be injected alternatively, and the second stage, where only pure

oxygen is mentioned. Moreover, this distinction is not arbitrary since it is technically plausible that undiluted pure oxygen is used to achieve higher temperatures. This is also taught in the application on page 13, lines 1-3, where it is disclosed that CO<sub>2</sub> is added, *inter alia*, to provide a heat sink to reduce the temperature.

The board does not dispute that it may be possible that such temperatures could also be achieved by using alternative means, such as by the injection of oxygen enriched air, but this does not detract from the fact that in the context of the relevant passage, only pure oxygen is directly and unambiguously disclosed.

1.2.8 For these reasons, the board concludes that embodiments (i) and (ii) are not disclosed in the application as filed in the generalised form claimed. It follows that the main request is not allowable (Article 123(2) EPC).

1.3 New first auxiliary request

1.3.1 Claim 1 of the new first auxiliary request, with marked amendments vis-à-vis claim 1 of the main request, reads as follows:

"1. A method of producing alcohol comprising:  
injecting carbon dioxide and oxygen gas and carbonaceous material into a gasifier, wherein said gasifier comprises a lower chamber and an upper chamber, wherein a gaseous product from the lower chamber moves to the upper chamber, and wherein oxygen ~~is injected in the lower chamber and the upper chamber,~~ and carbon dioxide ~~is~~ are injected in ~~the lower chamber, the upper chamber, or both chambers;~~

creating syngas comprising carbon monoxide and hydrogen;  
contacting the syngas with biocatalyst in a fermentation container to produce an alcohol product mixture;  
and selectively recovering alcohol from the product mixture."

In other words, the claim has been limited to embodiment (iii) mentioned above under point 1.2.1 and 1.2.2

- 1.3.2 The board has exercised its discretion not to take the new first auxiliary request into account under Article 13(2) RPBA 2020.

Article 13(2) RPBA 2020 is applicable because the new first auxiliary request was filed on 23 December 2021 and thus after notification of the summons to oral proceedings (Article 25(1), (3) RPBA 2020). In accordance with Article 13(2) RPBA 2020, any amendment to a party's appeal case shall in principle, not be taken into account unless there are exceptional circumstances justified with cogent reasons by the party concerned.

The new first auxiliary request is an amendment to the appellant's appeal case not justified by exceptional circumstances.

- 1.3.3 In the case on file, the deletion of alternatives (i) and (ii) in the new first auxiliary request is an amendment of the appellant's appeal case within the meaning of Article 13(2) RPBA 2020, and it is also an amendment in view of the requests on which the impugned decision was based (Article 12(2) and (4) RPBA 2020).

(a) As set out in detail and with reference to the case law of the boards in the decision cited by the appellant (T 2920/18, point 3.6) and in decision T 494/18 (point 1.3), the deletion of a claim or an alternative within a claim is to be regarded as an "amendment to the party's appeal case" (see also: T 2091/18, Reasons 4; T 1597/16, Reasons 4; T 1439/16, Reasons 2; T 1224/15, Reasons 5; T 908/18, Reasons 1; T 682/16, Reasons 5 to 8; concerning Article 13(1) RPBA 2007: T 168/16, Reasons 2.1 and 2.2). The question of what can be defined as an "amendment to a party's appeal case" can be answered in the systematic context of the provisions on appeal proceedings. Article 12(3) RPBA 2020 provides that the statement of grounds of appeal and the reply must contain a party's complete appeal case. Accordingly, all requests must be specified expressly at this stage. It follows from this that only requests filed with the party's statement of grounds of appeal or the reply form part of a party's appeal case. Consequently, a new request filed afterwards with a set of claims different to that of the previous requests is usually to be regarded as an "amendment to a party's appeal case" within the meaning of Article 13 RPBA 2020. In line with Articles 12(3) and 13 RPBA 2020, a request in which alternatives in a claim have been deleted compared to the previous requests is a new request and thus usually amounts to an "amendment to the party's appeal case" under Article 13 RPBA 2020.

This same conclusion is arrived at under Article 12(4) RPBA 2020 because the submission of the new first auxiliary request is also an amendment under

Article 12(4) and (2) RPBA 2020 as the impugned decision was not based on that request and the reasons in the impugned decision were not directed to a complete assessment of the subject-matter claimed with the new first auxiliary request.

Moreover, with this approach, whether the new request is to be qualified as an amendment (a factual condition) is to be assessed in a first step without anticipating the criterion of procedural economy, which is only applied in a second step as a criterion of discretion when determining the legal consequence. Thus, the factual situation (describing the factual conditions that must be met for the legal consequence to occur) and the criteria for applying the board's discretion are clearly distinguished from each other and treated separately (see also T 494/18, Reasons 1.3.3) while being dogmatically consistent.

Following this approach, the deletion of alternatives (i) and (ii) in the new first auxiliary request is an amendment to the appellant's appeal case making Article 13(2) RPBA 2020 applicable.

- (b) Other boards have held that the deletion of a claim or an alternative in a claim was only qualified to be an amendment of the party's appeal case if it changed the legal or factual framework of the appeal (see, for example: T 1480/16, Reasons 2.3; T 2243/18, Reasons 2; T 1792/19, Reasons 2; T 1151/18, Reasons 2.1).

However, even under this approach, the new first

auxiliary request would be qualified as an amendment of the appellant's appeal case because the deletion of alternatives (i) and (ii) would lead the assessment in a different direction (see below 1.3.4 (a)) compared to the previous assessment. Thus, even based on this approach, Article 13(2) RPBA 2020 would be applicable.

(c) Therefore, the board needed to assess whether to admit the new first auxiliary request in exercising its discretion under Article 13(2) RPBA 2020.

1.3.4 In the current case, exceptional circumstances which could justify the admittance of the new first auxiliary request are not present because the filing of a request limited to alternative (iii) would have been reasonable during the examining proceedings and the circumstances have not changed in view of the impugned decision or during the appeal proceedings.

The principles underlying Article 12(2), (4) and (6) RPBA 2020 can also be applied when assessing whether exceptional circumstances are present according to Article 13(2) RPBA because an amendment that would not have been admitted at the beginning of the appeal proceedings (as it could and should have been submitted during the first-instance proceedings) can normally not be justified at a later stage of the appeal proceedings either.

In the current case, the filing of a request limited to alternative (iii) could and should have been filed during the examining proceedings. It was triggered for the first time neither by the impugned decision nor by subsequent developments in the appeal proceedings.

- (a) In its decision, the examining division held that the general part of the application as filed (Figures 1-3 and claim 5) only disclosed embodiments where both oxygen and carbon dioxide were added to each chamber together. With regard to Figures 5 to 8, the examining division reasoned that the injection of oxygen was not mentioned. From this it is clear that according to the examining division, embodiments (i) and (ii) were not originally disclosed in these parts of the application as originally filed.

With regard to the example section (examples 1 to 20), the division acknowledged that it disclosed methods where oxygen was injected into both chambers while CO<sub>2</sub> was injected into the lower chamber, but it pointed out that these methods were more specific than the claimed method (point 17 of the decision). Thus, it is clear that according to the examining division, no basis for embodiments (i) or (ii) without the further limiting features could be found in the examples (intermediate generalisation).

This finding was by no means surprising for the applicant since it had already been set out by the examining division before, for example, in the annex to the summons (11 October 2018, point 3.1) and was confirmed in a telephone conversation on 16 September 2019.

As claim 1 of the new first auxiliary request does not rely on the example section (see point 1.2.2 above), it is clear that the request would have been a suitable reaction to overcome the objections raised in the summons and reiterated in the

telephone conversation. Therefore, the request could and should have been filed at least ahead of the oral proceedings before the examining division to overcome the objections raised.

However, instead of filing a request restricted to embodiment (iii) during the examination proceedings, the appellant decided to proceed with requests including all three embodiments with further specifications (see the main request of 11 July 2019 and auxiliary request 2 of 11 September 2019) and with claim requests restricted to embodiment (i) (auxiliary request 1 of 11 July 2019 and auxiliary request 3 of 11 September 2019), thus leading the assessment in a different direction.

- (b) The appellant argued that the new first auxiliary request had been filed at the first opportunity to submit a request which clearly had been indicated to overcome the objections on appeal. However, this argument is not convincing since the board's preliminary opinion merely confirmed the reasons given in the contested decision and did not raise any new issues.

In this context, the appellant also referred to an objection under Article 84 EPC which the examining division raised in the communication of 10 April 2018 (point 1 and 2.2), according to which the injection of oxygen into both chambers was an essential feature of the invention. The board understands the appellant's argument in such a way that the new first auxiliary request could not have been filed earlier since the applicant could not reconcile the allegedly contradictory objections



under Article 84 EPC and 123(2) EPC. This had only become possible after the board had not raised any objections under Article 84 EPC.

This argument is, however, not convincing because, independently of its merits, the examining division's objection under Article 84 EPC as set out in the communication dated 18 April 2018 against a different set of claims does not apply to alternative (iii) (and thus to the new first auxiliary request) because this alternative stipulates that oxygen is injected into both chambers. Thus, irrespective of whether the objection under Article 84 EPC was in fact maintained by the examining division, as alleged by the appellant, this was no valid reason for not filing the new first auxiliary request in the first-instance proceedings.

- (c) The appellant also referred to decision T 2920/18 in which the board found, *inter alia*, that the "change of case" caused by the deletion of claims in the proprietor's claim request served the purpose of procedural economy. However, that conclusion concerned a different procedural situation and is therefore not relevant for the current case. In the case underlying decision T 2920/18, the board found that the proprietor's amendment neither altered the factual or legal framework of the proceedings and that nor was there a need for reassessing the subject of the proceedings.

This situation differs from the current case where the assessment of the new first auxiliary request would change the framework of the proceedings

although the preliminary opinion of the board basically only confirmed the appealed decision and the preliminary opinion of the examining division on the requests underlying the impugned decision. As set out above, in view of the preliminary opinion given by the examining division in its annex to the summons, the appellant could and should have filed the new auxiliary request during the examining proceedings, but it did not do so. Instead, it filed several requests, none of them limited to embodiment (iii). Thus, the appellant failed to submit claim requests leading in a clear and convergent direction in the first-instance proceedings. As consequence, the admittance of the new claim request would change the framework of the proceedings.

Refraining from the submission of the new request in the first-instance proceedings contravened procedural economy because the appeal could have been superfluous if the examining division had had the opportunity to assess the allowability of the new claim request. In this respect, it should be noted that the principles of procedural economy are not to be assessed isolated from the course of the appeal proceedings but rather in view of the proceedings as a whole.

- (d) Finally, the appellant argued that the request should be admitted because it was clearly allowable. However, first of all, *prima facie* allowability as such would not justify exceptional circumstances under Article 13(2) RPBA 2020. Moreover, this assertion is not entirely accurate since at most the request would be allowable under Article 123(2) EPC so that, if admitted, the board

would remit the case to the examining division for further prosecution because the issues of novelty and inventive step for alternative (iii) have not been discussed.

Moreover, the primary object of the appeal proceedings is to review the decision under appeal in a judicial manner (Article 12(2) RPBA 2020; G 9/91, OJ 1993, 408, Reasons 18). If a decision is perceived to be erroneous, the appeal proceedings provide a way to have the decision rectified. However, in the current case, the filing of the new first auxiliary request does not aim to rectify an error in the decision but rather the appellant's failure to file a request in time. Admitting this request would not only be at odds with the purpose of the appeal proceedings but would also devalue the first-instance proceedings.

1.3.5 For these reasons, exceptional circumstances within the meaning of Article 13(2) RPBA 2020 are not present. Therefore, the board exercised its discretion not to take into account the new first auxiliary request.

1.4 Auxiliary request 1, filed with the grounds of appeal

Compared to claim 1 of the main request, claim 1 of auxiliary request 1 has been limited to embodiment (i). For the same reasons as set out for the main request, the claim does not meet the requirement of Article 123 (2) EPC.

- 1.5 Auxiliary requests 2 to 4, filed with the grounds of appeal
- 1.5.1 Claim 1 of auxiliary request 2 corresponds to the main request with the additional limitation: *"wherein a temperature of 1400 degrees F (760 degrees C) or less is maintained in the lower chamber and a temperature of the upper chamber is raised to between 1750 to 2250 degrees F (954 to 1232 degrees C)"*.
- 1.5.2 Claim 1 of auxiliary request 3 corresponds to the auxiliary request 2 with the additional limitations: *"and wherein the lower chamber temperature and oxygen input is controlled such that only partial oxidation of carbonaceous material occurs, not complete combustion,"* and *"in order to accomplish cracking and partial oxidation of any tar (such as heavy hydrocarbons) contained in the gaseous stream from the lower chamber;"*.
- 1.5.3 Claim 1 of auxiliary request 4 corresponds to claim 1 of auxiliary request 3 with the temperature range of the lower chamber restricted by the insertion of a lower limit of 750 °F (399 °C).
- 1.5.4 Neither of these amendments rectifies all deficiencies of the main request. The claims are not limited to methods where pure oxygen is used in the upper chamber (see point 1.2.7 above). Therefore, auxiliary requests 2 to 4 do not meet the requirements of Article 123(2) EPC.
- 1.5.5 In view of this finding, it was not necessary to discuss the admittance of auxiliary requests 3 and 4 filed for the first time with the grounds of appeal (Article 12(4) and (6) RPBA 2020).

2. Request for remittal

The appellant requested remittal of the case for further prosecution if the impugned decision, which had not discussed novelty or inventive step, were to be set aside. However, as all the requests on file that have been taken into account contravened Article 123(2) EPC, the impugned decision is not set aside, and there is no basis for further prosecution or remittal.

2.1 Reimbursement of the appeal fee

As the board set out in its preliminary opinion, it does not share the appellant's opinion on the alleged procedural violation. However, as the appeal is not allowable, the further requirement for reimbursement of the appeal fee is not fulfilled (Rule 103(1)(a) EPC). Thus, for this latter reason alone, the appeal fee cannot be reimbursed.

**Order**

**For these reasons it is decided that:**

The appeal is dismissed.

The request for reimbursement of the appeal fee is refused.

The Registrar:

The Chairwoman:



A. Pinna

J. Hoppe

Decision electronically authenticated