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**Datasheet for the decision
of 31 January 2023**

Case Number: T 1214/21 - 3.3.05

Application Number: 14164262.9

Publication Number: 2789585

IPC: C01G51/00, C01G53/00,
C01B13/14, H01M4/525, H01M4/04,
H01M10/052, H01M4/485,
H01M4/1391

Language of the proceedings: EN

Title of invention:
LAYERED LITHIUM NICKEL OXIDE, PROCESS FOR PRODUCING THE SAME
AND LITHIUM SECONDARY CELL EMPLOYING IT

Patent Proprietor:
SK Innovation Co., Ltd.

Opponent:
Strawman Limited

Headword:
Lithium Nickel Oxide/SK Innovation

Relevant legal provisions:
RPBA 2020 Art. 12(6), 12(4), 11
EPC Art. 14(2), 123(2), 123(3), 113(1)

Keyword:

Main request - no longer maintained in first-instance proceedings
Auxiliary requests 1, 2, 2a - no reasons for submitting in appeal proceedings
Auxiliary request 3 - admissibly raised and maintained - amendments allowable
Right to be heard - substantial procedural violation (yes)
Remittal - fundamental deficiency in first-instance proceedings (yes)

Decisions cited:

T 1736/09, T 0052/15, T 0756/18, T 2202/19

Catchword:



Beschwerdekammern

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Case Number: T 1214/21 - 3.3.05

D E C I S I O N
of Technical Board of Appeal 3.3.05
of 31 January 2023

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Decision under appeal: **Decision of the Opposition Division of the European Patent Office posted on 31 May 2021 revoking European patent No. 2789585 pursuant to Article 101(3) (b) EPC.**

Composition of the Board:

Chair E. Bendl
Members: G. Glod
R. Winkelhofer

Summary of Facts and Submissions

- I. The patent proprietor's (appellant's) appeal lies from the opposition division's decision revoking European patent No. 2 789 585 B1.
- II. The opposition division had concluded that the then pending main request did not meet the requirements of Rule 80 EPC and Article 123(2) EPC, that two sets of claims filed in the course of the oral proceedings did not meet the requirements of Article 123(2) or 123(3) EPC and that all further auxiliary requests "... *presumably would have led to their non-allowability for the same reasons as the previously discussed requests*" (Reasons, point 6.3).
- III. The following document cited in the impugned decision is of relevance here:
- D11: Affidavit of Yoon Kyung HWANG
- IV. With the statement of grounds of appeal, the appellant submitted a main request, and marked up versions of auxiliary request 1 and auxiliary requests 2 to 15 and 2a to 15a. Clean versions of said marked up versions were submitted on 20 July 2022.

Claim 1 of the main request is as follows:

*"1. Metal oxide particles for a cathode active material of a lithium secondary battery, the metal oxide represented by the following Chemical Formula 1:
 $Li_aNi_xCo_yM_zO_2$*

in Chemical Formula 1, M is any one selected from aluminum, magnesium, titanium, gallium and indium, and a, x, y and z satisfy $1.01 \leq a \leq 1.05$, $0.7 \leq x \leq 0.9$, $0 \leq y \leq 0.17$, $0.02 \leq z \leq 0.16$, and $x+y+z=1$, respectively, and the metal oxide particles has [sic] a concentration gradient at which the concentration of M is decreased from the surface of the metal oxide particle to the center thereof."

Claim 1 of auxiliary request 1 differs from claim 1 of the main request merely in that cobalt is now mandatory.

"1. Metal oxide particles for [...] $1.01 \leq a \leq 1.05$, $0.7 \leq x \leq 0.9$, $0 < y \leq 0.17$, $0.02 \leq z \leq 0.16$, and $x+y+z=1$, respectively, [...]."

Claim 1 of auxiliary request 2 differs from claim 1 of the main request merely by the inclusion of the word "continuously" (underlined below).

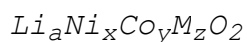
"1. Metal oxide particles for [...] at which the concentration of M is continuously decreased from the surface of the metal oxide particle to the center thereof."

Claim 1 of auxiliary request 2a is a combination of auxiliary requests 1 and 2.

"1. Metal oxide particles for [...] $1.01 \leq a \leq 1.05$, $0.7 \leq x \leq 0.9$, $0 < y \leq 0.17$, $0.02 \leq z \leq 0.16$, and $x+y+z=1$, respectively, [...] at which the concentration of M is continuously decreased from the surface of the metal oxide particle to the center thereof."

Claim 1 of auxiliary request 3 differs from claim 1 of the main request merely in that magnesium and titanium are deleted.

"1. Metal oxide particles for a cathode active material of a lithium secondary battery, the metal oxide represented by the following Chemical Formula 1:



in Chemical Formula 1, M is any one selected from aluminum, magnesium, ~~titanium~~, gallium and indium, and a, x, y and z satisfy $1.01 \leq a \leq 1.05$, $0.7 \leq x \leq 0.9$, $0 \leq y \leq 0.17$, $0.02 \leq z \leq 0.16$, and $x+y+z=1$, respectively, and the metal oxide particles has [sic] a concentration gradient at which the concentration of M is decreased from the surface of the metal oxide particle to the center thereof."

Claims 2 to 7 directly or indirectly refer to claim 1.

V. The appellant's arguments, insofar as they are relevant to the present decision, can be summarised as follows.

The opposition division committed a procedural violation since they failed to decide on the auxiliary requests. In addition the decision was not sufficiently reasoned.

The present main request had not been actively withdrawn during the opposition proceedings. Auxiliary requests 1 to 3 corresponded or substantially corresponded to requests submitted during the opposition proceedings. Therefore all these requests should be part of the appeal proceedings.

The requirements of Article 123(2) and (3) EPC were fulfilled for all requests. The skilled person

understood that a concentration gradient was continuous per se.

- VI. The respondent's (opponent's) arguments, as far as relevant to the present decision, can be summarised as follows.

The requirements of Article 123(3) EPC were not fulfilled. The language "towards the center" required an immediate decrease in concentration from a point on the surface, into the body of the particle. The wording of the claim "from the surface...to the center" defined an overall (average) decreasing gradient between two points and allowed for an intermittent increase.

The requirements of Article 123(2) EPC were not fulfilled either. The general disclosure of the application as filed was not limited to a material in particulate form.

- VII. In their communication pursuant to Article 15(1) RPBA 2020, the board was of the preliminary opinion that the main request and auxiliary requests 1 to 2a should not be admitted into the proceedings. Auxiliary request 3 was to be considered in the proceedings, and was in agreement with Articles 123(2) and (3) EPC. In addition, it appeared that the opposition division had committed a substantial procedural violation and that the case needed to be remitted for further prosecution with reimbursement of the appeal fee.

- VIII. In response thereto, the parties withdrew their previously made requests for oral proceedings in the event of the board maintaining their preliminary opinion.

- IX. Since the board does not see any reason to diverge from their preliminary opinion, oral proceedings have been cancelled and the decision can be rendered in writing.
- X. The appellant requests that the patent be maintained in amended form on the basis of the main request, or alternatively on the basis of one of auxiliary requests 1 to 15a.

The respondent requests that the appeal be dismissed.

Reasons for the Decision

Main request

1. Article 12(6) RPBA 2020

The main request corresponds to a request submitted as "New Main Request" on 25 January 2021, which replaced the former main request (see appellant's submission of 25 January 2021, point 0, first paragraph).

During oral proceedings before the opposition division, the appellant submitted two further requests, which were both labelled as "**New** Main Request" (emphasis added by the board). There is no reason to suggest that the opposition division's understanding that the new main request was supposed to replace the previous main request was erroneous. The appellant did not indicate that the new main requests were not supposed to replace the previous ones and that they should be kept as auxiliary requests, which would possibly have required a renumbering of the other auxiliary requests.

The board also fails to see why the opposition division should have clarified the status of the previously filed requests, since it was clear in view of the procedural history that a new request was supposed to replace a previous request (see also T 52/15, Reasons 1.7).

Therefore the main request filed with the statement of grounds of appeal is a re-introduction of a previously withdrawn request and, in line with Article 12(6) RPBA 2020 and established jurisprudence relating to the equivalent Article 12(4) RPBA 2007, it cannot be admitted into the proceedings (Case Law of the Boards of Appeal of the EPO, 10th edition, 2022, V.A.5.11.3 i)).

Auxiliary request 1

2. Article 12(4) RPBA 2020

Auxiliary request 1 is a new request that has not been submitted previously. The appellant's allegation that it was identical to auxiliary request 1 of 4 February 2020 is not correct, since according to the request in question metal M can be magnesium or titanium, which was not the case for auxiliary request 1 of 4 February 2020. In any case, the request of 4 February 2020 was subsequently replaced by other requests (on 25 January 2021 and on 22 March 2021). The board cannot see any reason why yet another new auxiliary request 1 was submitted at the appeal stage and why it should be admitted into the proceedings (Article 12(4) RPBA 2020).

Auxiliary request 2

3. Article 12(4) RPBA 2020

Auxiliary request 2 does not correspond to auxiliary request 1 of 25 January 2021, as alleged by the appellant in their submission of 20 July 2022, since the request in question relates to metal oxide particles while auxiliary request 1 of 25 January 2021 did not. This latter request was subsequently withdrawn and replaced by auxiliary request 1 of 22 March 2021, which also does not relate to metal oxide particles. The board cannot see why yet another new auxiliary request 2 was submitted at the appeal stage and why it should be admitted into the proceedings (Article 12(4) RPBA 2020).

Auxiliary request 2a

4. Article 12(4) RPBA 2020

This is another new request for which there is no reason to admit it into the appeal proceedings (Article 12(4) RPBA 2020).

Auxiliary request 3

5. Article 12(4) RPBA 2020

This request corresponds to auxiliary request 2 of 25 January 2021, which corresponds to auxiliary request 1 of 4 February 2020 (reply to opposition), except for the correction of the translation (see next point below). Therefore, this request was admissibly raised and was maintained in accordance with Article 12(4)

RPBA 2020, and is therefore part of the appeal proceedings.

6. Article 14(2) EPC

In view of D11, the replacement of "toward" by "to" is a correction of the translation, which may be brought into line with the application as filed throughout the proceedings before the European Patent Office (see T 2202/19, Reasons 3).

7. Article 123(2) EPC

The respondent argues that the expression "metal oxide particles" was not directly and unambiguously derivable from the application as filed. The board does not concur, for the following reasons.

The application as filed reads (paragraph [0018]): "*In the metal oxide for a cathode active material of a lithium secondary battery according to an embodiment of the present invention, concentration gradient of M being Group 3A metal may be decreased from the surface of a particle to the center thereof*". The skilled person understands therefrom that the metal oxide is in the form of particles. The metal oxide is defined in paragraphs [0014] and [0015] of the application as filed. It is also evident to the skilled person that "M being Group 3a metal" can only refer to aluminium, gallium and indium to which M has been limited in the request in question.

Therefore the requirements of Article 123(2) EPC are met.

8. Article 123(3) EPC

Although this subject was not dealt with in the impugned decision (except for its being mentioned in the title "Amendments Art. 123(2)/(3) EPC" in point 5 of the Reasons), it is evident from the minutes of the oral proceedings before the opposition division that it was crucial to the proceedings.

It is established case law that Article 69 needs to be considered when dealing with Article 123(3) EPC (T 1736/09, Reasons 1.1.8 and Case Law of the Boards of Appeal of the EPO, 10th edition, 2022, II.E.2.3.1).

Claim 1 as granted included the wording "*a concentration gradient at which the concentration of M is decreased from the surface of the metal oxide particle toward the center thereof*", which has now been replaced by "*a concentration gradient at which the concentration of M is decreased from the surface of the metal oxide particle to the center thereof*".

"Toward(s)" is normally understood as "in the direction of", which the skilled person would understand in the present case as a decrease in concentration of the metal M from the surface in the direction of the center. This is supported by Figures 7 to 10 and 11 to 14 (see also paragraph [0037]) of the patent in suit).

The expression "to" which is now used would probably be understood as not being directional, if used alone. In the present case, however, it is used in combination with "a concentration gradient". The skilled person reading the claim 1 in question in combination with figures 7 to 10 and 11 to 14 will understand that the concentration of the metal M gradually decreases from

the surface down to the centre of the particle. There is no reason why the skilled person reading the patent with a mind willing to understand would consider a particle such as the one shown in figure 1 on page 5 of the respondent's reply to the appeal of 2 February 2022 to be encompassed by claim 1 of the present request. An intermittent increase is a theoretical possibility which is not taught in the patent. Such a theoretical particle could have concentration of M at point B higher than the one at point A, which would also be contrary to the understanding of paragraph [0014]. Therefore, the scope of protection has not been extended, and the requirements of Article 123(3) EPC are met.

9. Article 113(1) EPC

The decision was only reasoned for the then main request, which was considered not to fulfill the requirements of Rule 80 EPC (point 4, last sentence), and Article 123(2) EPC (point 5.3, last sentence). The decision also contains a section on Article 113 EPC and states that *"all auxiliary requests 1-17 contained as wording either "to" or "toward" which presumably would have led to their non-allowability for the same reasons as the previously discussed requests"*. This sentence is understood to relate to auxiliary requests 1 to 17 which had been filed on 25 January 2021 and 22 March 2021, as indicated in points 8 and 9 of the Summary of Facts and Submissions of the impugned decision. These requests were still on file when the decision was taken. The *"previously discussed requests"* is understood to mean the requests discussed during oral proceedings, since the decision itself only deals with one request. Consequently *"the same reasons"* also refers to reasons dealt with during oral proceedings,

in particular Article 123(3) EPC, but not dealt with in the decision itself (see minutes of the oral proceedings, point 10).

Overall, the decision does not contain any reasoning as to why auxiliary requests 1 to 17 then still on file were not considered admissible and/or allowable, which amounts to a substantial procedural violation.

In addition, it is evident from the minutes of the oral proceedings before the opposition division (point 26) that the chair had indicated that, after having discussed three main requests in the proceedings, only one further request would be allowed without any consideration being given to (the) others, which is a further substantial procedural violation (see also T 756/18, Reasons 3).

Since the only way of addressing these deficiencies was to file an appeal, a reimbursement of the appeal fee is equitable.

10. Article 111 EPC

In view of the substantial procedural violation and the fact that the opposition division has not dealt with sufficiency, novelty and inventive step, special reasons within the meaning of Article 11 RPBA 2020 exist for remitting the case to the opposition division for further prosecution.

Order

For these reasons it is decided that:

1. The decision under appeal is set aside.
2. The case is remitted to the opposition division for further prosecution.
3. The appeal fee is reimbursed.

The Registrar:

The Chair:



C. Vodz

E. Bendl

Decision electronically authenticated