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**Datasheet for the decision
of 6 October 2016**

Case Number: T 2147/10 - 3.4.03

Application Number: 00935489.5

Publication Number: 1101237

IPC: H01J7/18

Language of the proceedings: EN

Title of invention:

COMPOSITE MATERIALS CAPABLE OF HYDROGEN SORPTION INDEPENDENTLY
FROM ACTIVATING TREATMENTS AND METHODS FOR THE PRODUCTION
THEREOF

Patent Proprietor:

SAES GETTERS S.p.A.

Opponent:

Bayer AG

Headword:

Relevant legal provisions:

EPC 1973 Art. 54, 56, 83, 100(a), 100(b), 111(1)
RPBA Art. 13(1), 13(3)

Keyword:

Sufficiency of disclosure - (yes)

Novelty - (yes)

Inventive step - (yes)

Decisions cited:

T 0327/92

Catchword:



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Case Number: T 2147/10 - 3.4.03

D E C I S I O N
of Technical Board of Appeal 3.4.03
of 6 October 2016

Appellant: SAES GETTERS S.p.A.
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Decision under appeal: **Decision of the Opposition Division of the
European Patent Office posted on 13 August 2010
revoking European patent No. 1101237 pursuant to
Article 101(3) (b) EPC.**

Composition of the Board:

Chairman G. Eliasson
Members: T. M. Häusser
T. Bokor

Summary of Facts and Submissions

- I. The appeal of the proprietor concerns the decision of the opposition division to revoke the European patent No. EP-B-1101237 for insufficient disclosure (Article 101(3)(b) EPC).
- II. In the decision, further remarks were made in relation to the amendments (Article 123(2) and (3) EPC), novelty and inventive step.

The opposition had been filed against the patent as a whole. Grounds of opposition were insufficiency of the disclosure and lack of novelty and inventive step (Articles 100(a) and (b), 54 and 56 EPC 1973).

- III. With the statement of the grounds of appeal the appellant (patent proprietor) filed new sets of claims as main request and first and second auxiliary requests.

Shortly before the oral proceedings before the board, the appellant filed amended claims forming a main request and first to fifth auxiliary requests. At the oral proceedings the board decided to admit some of these requests into the proceedings, which were then discussed at the oral proceedings. After that the admitted requests were found not to comply with Article 123(3) EPC, the appellant wished to revert to the sets of claims filed with the statement of the grounds of appeal. After a discussion the board decided to admit the main request and the first and second auxiliary request filed with the statement of the grounds of appeal.

At the end of the oral proceedings before the board the appellant requested as main request the setting aside of the decision under appeal and the maintenance of the patent in an amended form on the basis of the following:

Description: columns 1, 2, 7, 8 of the patent specification, columns 3, 4, 5, 6 filed during the oral proceedings before the board,

Claims: 1-10 of the Main Request filed with the statement of the grounds of appeal dated 17 December 2010,

Drawings: Figures 1-4 of the patent specification.

The respondent (opponent) requested that the appeal be dismissed.

IV. Reference is made to the following documents:

O3: DE 32 34 671 C,

O5: EP 251 384 A.

V. The wording of independent claim 1 of the main request is as follows (board's labelling "(a)", "(b)", "(c)"):

"1. Composite materials (10; 20) capable of sorbing hydrogen independently from activation treatments,
(a) formed of non-evaporable getter material
(b) wherein the getter material is in the form of powders (12; 22) whose particle surface has a coating degree between 10% and 90% of a deposit (13; 23) formed of one or more species among metallic palladium, palladium oxide, palladium-silver alloys containing up to 30% by atoms of

silver and compounds between palladium and one or more metals of the getter material and

(c) wherein the non-evaporable getter material is selected among:

- Zr, Ti, Nb, Ta, V metals;
- alloys between Zr and/or Ti and one or more other elements selected among Cr, Mn, Fe, Co, Ni, Al, Cu, Sn, Si, Y, La and Rare Earths;
- mixtures of said metals and said alloys."

VI. The parties argued essentially as follows:

(a) Procedural issues

- (i) Readmission of the set of claims of the main request filed with the statement of the grounds of appeal

The *appellant* argued that the main request should be admitted into the proceedings as it was not new but well-known to the opponent since it had previously been filed with the letter setting out the grounds of appeal.

The *respondent* argued that the main request was an attempt to belatedly reintroduce previously filed material into the proceedings and should therefore not be admitted into the proceedings.

- (ii) Remittal to the department of first instance

The *appellant* argued that the case should be remitted to the department of first instance so that the opposition division could decide on novelty and inventive step. In the decision under

appeal the opposition division had only dealt with the issue of sufficiency of the disclosure and its further remarks on novelty and inventive step were no longer valid.

The *respondent* argued that the board could deal with the issues of novelty and inventive step and hence the appellant's request for remittal should be refused.

(b) Main request

(i) Sufficiency of the disclosure

The *appellant* argued that the skilled person had all the necessary tools available to him to carry out the invention, in particular to measure the coating degree from photographs, such as the ones shown at the oral proceedings before the board, by means of sampling of powder particles. Such sampling was described in an ISO standard document. The skilled person had standard techniques, such as energy dispersion x-ray diffraction and scanning tunneling microscopy, at his disposal. Sieving or diffraction images were available for determining the size of the powder particles as described in specific ISO standard documents.

The *respondent* argued that the appellant's photographs shown at the oral proceedings were from the year 2016 and it could not be determined whether the method described by the appellant was available at the priority date of the patent. It was not unequivocally disclosed to the skilled person, what was meant by "coating degree" and how it should be measured or determined. The skilled person had to

be in a position to determine whether a composite material was within the scope of the claim; for example, he had to be able to distinguish between 90% and 95% coating degree.

Similarly, it was not disclosed what was meant by "size" and "particle size" in claims 5 and 6 and how this size should be determined. Different measuring methods were available, but none was described in the patent. Furthermore, one could arrive at different size values depending on the morphology of the particles.

(ii) Novelty

The *appellant* argued that in relation to O5 the claimed powder particles could only be obtained by specific selections from multiple lists, namely the list of grain materials and the list of coating materials. Moreover, the powder of document O5 was used for storing hydrogen at high pressure and could not be regarded as a getter material, which was able to absorb hydrogen in vacuum without releasing the absorbed hydrogen. Similarly, the FeTi material of document O3 was used for storing hydrogen at between 7 and 25 bar and could not be regarded as a getter material, either. Moreover, O3 did not disclose the fragmentation as a consequence of hydrogen exposure; rather, the particles were coated, upon fragmentation, on the whole surface with palladium. The subject-matter of claim 1 of the main request was therefore new over documents O3 and O5.

The *respondent* argued that the subject-matter of claim 1 of the main request was not new over

document O5. Some of the compounds listed in O5, column 1, first paragraph, had the claimed structure and the ability of absorbing hydrogen, so that they could be considered "getter materials". The fact that in O5 it was described that the absorption occurred under pressure was not relevant as this was not excluded by the wording of claim 1 of the main request. Moreover, palladium was mentioned in O5 (paragraph bridging columns 2 and 3 and column 3, second paragraph) as a metal coating the grains to at least half a monolayer of atoms, not necessarily forming a continuous layer. This implied that there was a coating degree of 50%. The selection from separate lists could not constitute an invention as it had no technical effect. Moreover, palladium was used in every example of O5 and could therefore be regarded as advantageous.

Furthermore, the subject-matter of claim 1 was not new over document O3, either. The hydrogen storage material had the same constituents (Fe and Ti) as the material of the invention and could therefore be considered a getter material. Moreover, the FeTi grains were coated with palladium and it was described in O3 that cracks would occur (column 2, last paragraph) implying that the resulting smaller grains did not have a complete coating. It followed from decision T327/92 that an intermediate product was a valid state of the art.

(iii) Inventive step

The *appellant* argued that neither document O3 nor document O5 related to getter materials. These documents were thus no suitable starting point for assessing inventive step. Even if the combination

of 03 or 05 were made, the resulting cell would not work, as a getter material should not release the absorbed hydrogen.

The *respondent* argued that the subject-matter of claim 1 lacked inventive step over the combination of either document 03 or document 05 with the state of the art as described in paragraph [0003] of the opposed patent.

Reasons for the Decision

1. Procedural issues
 - 1.1 Readmission of the set of claims of the main request filed with the statement of the grounds of appeal
 - 1.1.1 After that the appellant's requests considered during the first part of the oral proceedings before the board were found not to comply with Article 123(3) EPC, the appellant requested that the claims filed with the statement of the grounds of appeal be readmitted. Hence, the board had to consider whether to admit this set of claims into the appeal proceedings, considering in particular the complexity of the new subject-matter, the current state of the proceedings, the need for procedural economy and whether the submissions raise issues which the board or the respondent cannot reasonably be expected to deal with without adjournment of the oral proceedings (Article 13(1) and (3) RPBA).
 - 1.1.2 The respondent argued that the main request was an attempt to belatedly reintroduce previously filed material into the proceedings and should therefore not be admitted into the proceedings.

As the set of claims of the main request had been filed with the letter dated 17 December 2010 setting out the grounds of appeal, these claims were known to the respondent and to the board from the beginning of the appeal proceedings. In fact, the respondent had commented on these claims with its letter of reply dated 29 April 2011. The board had also commented on them in its communication dated 22 February 2016. There was thus no doubt that no new issues were raised by the claims and that the respondent as well as the board were able to deal with them during the oral proceedings.

Therefore, the board decided to admit the set of claims of the main request into the appeal proceedings.

1.2 Remittal to the department of first instance

1.2.1 The appellant argued that the case should be remitted to the department of first instance so that the opposition division could decide on novelty and inventive step. In the decision under appeal the opposition division had only dealt with the issue of sufficiency of the disclosure and its further remarks on novelty and inventive step were no longer valid.

1.2.2 According to Article 111(1) EPC 1973 a board of appeal "may either exercise any power within the competence of the department which was responsible for the decision appealed or remit the case to that department for further prosecution".

This article confers the discretionary power on a board of appeal in charge of reviewing the decision of an opposition division either to rule on the case itself

or to remit the matter for further prosecution to the opposition division.

- 1.2.3 In the present case, the opposition division decided to revoke the patent for insufficient disclosure. However, further remarks were made concerning lack of novelty in relation to claims pending at the time which have essential elements in common with claim 1 of the main request. This ground of opposition had also been raised by the opponent and the opposition division was not prevented from deciding on it. The mere fact that the objection concerning lack of novelty was not formally included as a further ground for revocation in the contested decision does not warrant remittal of the case to the department of first instance. Moreover, it is a matter of course that the board's conclusions in relation to one issue might have a bearing on other issues in dispute. The board is in a position to appreciate the consequences of the reasoning of its decision regarding sufficiency of the disclosure on the assessment of novelty and inventive step. In any case, it is established case law that there is no absolute right to have an issue decided upon by two instances (see Case Law of the Boards of Appeal of the EPO, 8th edition 2016, section IV.E.7.6.1).

Finally, it is noted that the appellant requested remittal for the first time at the oral proceedings before the board, i. e. after that the appellant and the respondent had made written submissions concerning novelty and inventive and after that the board had indicated in its communication pursuant to Article 15(1) RPBA its intention to discuss novelty and inventive step at the oral proceedings. The parties as well as the board were therefore in a position to discuss these issues at the oral proceedings and the

respondent could legitimately expect that the dispute would be brought to a close at the end of the hearing.

1.2.4 Consequently, the board - in exercise of its discretionary powers mentioned above - decided, in the interest of efficient proceedings and in order to avoid keeping the public uncertain about the fate of the patent for potentially several more years, not to remit the case to the department of first instance for further prosecution.

2. Main request

2.1 Sufficiency of the disclosure

2.1.1 In the decision under appeal the opposition division held (see section 2 of the Reasons) that the patent did not disclose the invention in a manner sufficiently clear and complete for it to be carried out by a person skilled in the art, in particular in relation to the particle surface of the getter material powders being coated between 10 and 90% with a deposit. The coating percentage was not a well-defined property and a practically viable measuring method was neither defined in the patent nor self-evident for the skilled person. The claimed coating percentage could relate to an average value or to such a percentage of each particle. Moreover, the method of Figure 3 of the patent was merely able to provide a coating percentage of about 50%, but did not provide an enabling teaching for the entire claimed range. There was also no teaching in the patent on how to avoid particles having a coating percentage outside the claimed range.

2.1.2 The *respondent* agreed essentially with the assessment of the opposition division, arguing further that the

appellant's photographs shown at the oral proceedings were from the year 2016 and it could not be determined whether the method described by the appellant was available at the priority date of the patent.

The respondent added that it was not disclosed in the patent what "particle size" meant and how it should be determined. Different measuring methods were available, but none was described in the patent. Different size values might be obtained depending on the morphology of the particles.

2.1.3 According to claim 1 of the main request the composite materials according to the invention are formed of non-evaporable getter material in the form of powders whose particle surface has a coating degree between 10% and 90% of a deposit formed of metallic palladium, palladium oxide, and/or certain palladium-silver alloys. The claimed coating degree allows the sorption of hydrogen without any activation treatments in the coated regions and of gases other than hydrogen in the uncoated regions after an activation treatment, e.g. by bringing the materials periodically to elevated temperatures (see paragraph [0015] of the patent specification).

Moreover, dependent claims 5 and 6 of the main request additionally define the size of the powder particles to be "lower than about 500 μm " and "between about 20 and 125 μm ", respectively.

It has to be established whether the patent as a whole provides sufficient information for the skilled person, using common general knowledge, to carry out the invention without undue burden (see *Case Law of the Boards of Appeal of the EPO*, 8th edition 2016, section II.C.3.1), in particular in relation to the claimed

coating degree of the particle surface and the claimed particle size.

- 2.1.4 In the patent specification three methods of coating the powder particles are disclosed. The first method is liquid phase impregnation, where the powder of non-evaporable getter (NEG) material is dipped under continuous stirring in a solution containing a palladium compound. The solution is subsequently dried through evaporation of the solvent and the resulting dry powder is treated at high temperature under vacuum conditions for a period between 5 and 45 minutes. The second method is chemical vapour deposition (CVD), according to which a volatile precursor of the element to be deposited is evaporated at high temperature and/or low pressure in a chamber where the NEG powder is present. After the deposition the precursor is decomposed by thermal treatment giving rise to the coating comprising palladium. According to the third method, evaporation or sputtering techniques are used, where the NEG powder is positioned in a vacuum chamber as a thin powder bed on a sample holder. A heated metal wire (evaporation) or target (sputtering) is used as the palladium source. The palladium is deposited only on the NEG grains which are exposed to the palladium source (see paragraphs [0020]-[0022] of the patent specification).

Moreover, it is disclosed that a partial coating can be obtained with the first two methods by using only limited quantities of the precursor. In relation to the third method it is disclosed that the coating degree can be increased by maintaining the powder under stirring, so that the orientation of the NEG grains is changed during the palladium deposition (see paragraphs [0022] and [0024] of the patent specification).

There is therefore no doubt that the patent provides sufficient information for the skilled person to make NEG powders with partially coated grains. This is not in dispute, either. The contentious point is whether the skilled person is enabled to manufacture NEG powders whose particle surface has the claimed coating degree, i. e. between 10% and 90% of the deposit.

- 2.1.5 The opposition division held that the coating percentage was not a well-defined property and that a practically viable measuring method was neither defined in the patent nor self-evident for the skilled person.

The board agrees in that there is no indication in the patent specification concerning the measuring method to be used for determining the coating degree of the powder particles. However, the *surface area* of powder particles is considered a well-known property of such particles. A basic measuring method for determining this property is microscopic inspection. This is also suitable, using for example visible or ultraviolet light, for the particle sizes envisaged according to the invention (lower than 500 μm and preferably between about 20 and 125 μm , see paragraph [0017] of the patent specification). Microscopic inspection is also considered suitable for determining the area of the coated portion of the surface of a powder particle and thus of its coating degree, which is the ratio of this area to the total surface area of the powder particle.

- 2.1.6 The opposition division further held that the coating degree might refer to an average value. However, there is no reference at all in the patent specification to an average value of the coating degree. On the other hand, it is defined in claim 1 of the main request that

the *particle surface* has the claimed coating degree. Furthermore, it is explicitly stated in paragraph [0017] of the patent specification that "*every particle* is a grain of NEG material with partial coating of palladium or compounds thereof" (board's emphasis). It is also evident for the skilled person that this is desirable - as pointed out by the appellant - so that the powder has a homogeneous composition; otherwise, separation of the powder grains might occur. The skilled person would therefore understand that the coating degree as intended by the invention does not relate to an average value but to the coating degree of the individual particles of the powder.

- 2.1.7 The appellant pointed out that it is mentioned in paragraph [0024] of the patent specification that trial tests should be used to determine the appropriate quantity of the precursor of the liquid phase impregnation or CVD methods (see point 2.1.4 above) for obtaining partial coating of NEG powders. It is also mentioned that geometrical factors determine the partial coating when using the evaporation or sputtering techniques.

Since a large number of particles is generally involved in the powders of the invention, it would be natural for the skilled person to use sampling when controlling the manufacture of the powder.

The skilled person would therefore undertake to achieve the desired coating degree by means of such trial tests in combination with the variation of relevant parameters, e. g. the quantity of the precursor, geometrical factors, treatment/exposure time, temperature, etc., while taking the results from microscopic measurements of the coating degree of sample powder particles into account to vary the parameters appropriately.

The ranges specified for the coating degree in claim 1 of the main request ("between 10% and 90%") and also in claim 3 of the main request ("between 25% and 75%") are broad and centred at 50%. Hence, they provide a constraint on the manufacture of the powder particles which the skilled person is able to meet without inordinate effort.

In the board's judgment, the skilled person is thus enabled to achieve without undue burden powders whose particle surface has the desired coating degree.

- 2.1.8 Concerning the respondent's objection in relation to the determination of the particle size, the method of microscopic inspection mentioned above in the context of the coating degree is also suitable for the measurement of particle sizes. Sieving is an alternative standard method for determining the size of powder particles.

The skilled person is aware that the measurement of the size of powder particles is to some extent inaccurate and depends on the measurement method and the morphology of the powder particles. This is also reflected in the definition of the particle size in claims 5 and 6, where it is specified that the particle size is "lower than *about* 500 μm " and "*between about* 20 and 125 μm ", respectively (board's emphasis). The skilled person would take this knowledge into account when manufacturing powder particles having the desired size, in particular by preparing the particles in such a way that their size is not too close to the endpoints of the defined ranges.

Accordingly, the board is of the opinion that the skilled person is enabled to achieve without undue burden powders whose particles have the desired size.

2.1.9 In view of the above, the board concludes that the patent discloses the invention in a manner sufficiently clear and complete for it to be carried out by a person skilled in the art (Articles 83 and 100(b) EPC 1973).

2.2 Novelty

2.2.1 In the decision under appeal the opposition division made further remarks stating that the subject-matter of claim 1 pending at the time was not new over each of documents O3 and O5. This view was shared by the respondent.

2.2.2 Document O3 discloses (see column 1, line 30-38; column 4, lines 22-23; column 5, line 27 - column 6, line 29) a method for coating a hydrogen storage material with palladium. The normal operation of such a storage material consists in the cyclic loading and unloading of hydrogen. After an oxid layer covering the material made of FeTi is removed, a palladium layer is deposited by an ion exchange method on the material, which is thus able to absorb hydrogen even at room temperature. This method is applicable to cyclically treated FeTi powder with minimum grain size. The palladium coating prevents passivation of the FeTi material in air and therefore simplifies its handling, in particular when using very fine powder, which cannot fragment any further upon hydrogen loading.

Using the wording of claim 1 document O3 discloses therefore composite materials (FeTi materials) capable

of sorbing hydrogen independently from activation treatments (due to the palladium coating).

- 2.2.3 The respondent argued that the hydrogen storage material of document O3 had the same constituents (Fe and Ti) as the material of the invention and could therefore be considered a getter material. Moreover, the FeTi material was coated with palladium and it was described in O3 that cracks would occur (see column 2, last paragraph) implying that the resulting grains did not have a complete coating. It followed from decision T327/92 that an intermediate products was a valid state of the art.

The board agrees with the appellant in that the FeTi material of document O3 is intended for storing *and releasing* hydrogen, the material being exposed to hydrogen, for example, at a pressure of 7 or 65 bar (document O3, column 2, lines 25 to 38). On the other hand, a non-evaporable getter material is used for vacuum maintenance and gas purification (see paragraph [0002] of the patent specification). Such a material is thus intended for absorbing gas atoms or molecules without releasing them subsequently and for being used at very low pressures. The mere fact that the material of document O3 has the same combination of constituents as the invention does not imply that it exhibits all the characteristics of the material according to the invention. In particular, the relative amount of the constituents and the grid structure of the material are also important factors determining the characteristics of the material. Therefore, document O3 is not considered to disclose feature (a) of claim 1 of the main request relating to the composite material being formed of non-evaporable getter material.

Since in features (b) and (c) reference is made to the getter material, the subject-matter of these features is not considered to be disclosed in document O3, either.

Moreover, in relation to feature (b) the board observes that the passage in document O3 pointed out by the respondent (O3, column 2, last paragraph) relates to a description of the prior art relevant for the invention of document O3. In particular, it discloses that the incorporation of hydrogen into a FeTi grid structure leads to cracks and that continued exposure to hydrogen enhances the crack generation leading to pulverization of the material. However, in relation to the palladium coated FeTi material according to the disclosed invention of O3 it is in fact disclosed that the palladium coating prevents passivation of the FeTi material particularly well when using very fine powder, which cannot fragment any further upon hydrogen loading (see O3, column 6, lines 22-26). The skilled person is thus taught to strive to use coated FeTi powder which is fine enough so that it does not pulverize any further upon hydrogen loading and unloading. Also for this reason there is no disclosure in document O3 of feature (b).

Since the board is of the opinion that document O3 does not disclose a composite material exhibiting feature (b), not even as an intermediate product, the decision T327/92 relating to intermediate products being a valid state of the art is not relevant for the present case.

Since document O3 does not disclose features (a), (b) and (c) of claim 1 of the main request, the subject-matter of that claim is new over document O3.

2.2.4 Document 05 discloses (see column 1, paragraph 1; column 2, last paragraph - column 3, second paragraph) an electrochemical cell comprising a negative electrode with electrochemically active material consisting of an intermetallic compound forming a hydride with hydrogen, which compound has the CaCu_5 -structure and the compositional formula AB_mC_n , where $m + n$ is between 4.8 and 5.4 and n is between 0.05 and 0.6, in which A consists of an alloy or of one or more elements selected from Y, Ti, Hf, Zr, Ca, Th, La and the remaining rare earth metals, in which B consists of two or more elements selected from Ni, Co, Cu, Fe and Mn, and in which C consists of one or more elements selected from Al, Cr and Si. Advantageously, the electrochemically active material is in the form of grains, which have at the surface a layer comprising one or more of the metals selected from Pd, Pt, Ir and Rh, in a quantity which corresponds to at least half a monolayer of metal atoms. The metal atoms may be provided by exchanging them with a part of the less noble metals of the intermetallic compound, for example La. The noble metal atoms do not necessarily form a separate continuous layer. The metal atoms may also be provided on the surface of the grains by electrodeposition or by means of electroless plating, by reduction using hydrogen or by decomposition of an organometallic compound.

Since the intermetallic compound disclosed in document 05 is used as the electrochemically active material of the negative electrode of an electrochemical cell, it is intended to electrochemically store and discharge hydrogen. For reasons corresponding to those mentioned under point 2.2.3 above, this intermetallic compound cannot be considered a non-evaporable getter material.

Moreover, even if this were the case, the board observes that none of the specific examples of an electrochemically active material disclosed in document O5 contains any of the metals Zr, Ti, Nb, Ta, and V and hence that these examples do not fall under the definition of the getter material in feature (c). In order to arrive at the claimed material it is necessary to select Ti and/or Zr from the list of possible elements of A in the compositional formula AB_mC_n disclosed in O5 (namely Y, Ti, Hf, Zr, Ca, Th, La) and Pd from the list of possible elements of the coating material (namely Pd, Pt, Ir, Rh). The board agrees with the appellant in that under these circumstances the claimed combination of materials as defined in features (b) and (c) cannot be considered disclosed in document O5 (see *Case Law of the Boards of Appeal of the EPO*, 8th edition 2016, section I.C.6.2, in particular 6.2.1 b)).

Finally, it is not described in document O5 what is meant by the expression that the coating layer comprises one or more of the listed metals "in a quantity which corresponds to at least half a monolayer of metal atoms" (O5, column 3, first paragraph). In particular, it is not stated what other materials could be comprised in the coating layer and in what quantity and how thick the coating layer is. Hence, the coating degree cannot be inferred from this expression.

In view of the above, document O5 does not disclose features (a), (b) and (c) of claim 1 of the main request. The subject-matter of that claim is therefore new over document O5.

- 2.2.5 The state of the art as described in the patent in paragraphs [0003], [0007] and [0008] comprises several documents describing the non-evaporable getter material

defined in feature (a) of claim 1 of the main request and having a composition as defined in feature (c) of that claim, for example Zr-Al, Zr-Ni or Zr-Fe.

The indication in claim 1 of the main request that the composite material is capable of sorbing hydrogen "independently from activation treatments" is considered to depend on how the composition is used and is considered to be implicitly disclosed in the above documents as well.

There is however no disclosure in these documents of a getter material in the form of a powder whose particle surface is partially coated. Therefore, these documents disclose all the features of claim 1 of the main request except feature (b).

The subject-matter of claim 1 is therefore also new over the state of the art as described in the opposed patent.

- 2.2.6 No other document was considered prejudicial to the novelty of the subject-matter of claim 1 by the opposition division or the respondent.

The board concludes that the subject-matter of claim 1 of the main request is new over the available state of the art. Claims 2 to 10 are dependent on claim 1. Accordingly, the subject-matter of claims 1 to 10 of the main request is new (Article 52(1) EPC and Article 54(1) EPC 1973).

- 2.3 Inventive step

- 2.3.1 Closest state of the art / distinguishing feature

The documents cited in the opposed patent and referred to above under point 2.2.5 disclose subject-matter that is conceived for the same purpose as the invention, namely for providing composite materials capable of sorbing hydrogen, and have many relevant technical features in common with it, as detailed above. These documents are therefore regarded as the closest state of the art, from which the subject-matter differs in comprising feature (b) (see point V. above for its definition).

2.3.2 Objective technical problem

The effect of feature (b) is to provide composite materials capable of sorbing hydrogen independently from activating treatments as well as sorbing gases other than hydrogen as a result of said treatments (see paragraph [0011] of the patent). The objective technical problem is therefore to achieve this effect.

2.3.3 Obviousness

Documents O3 and O5 do not relate to getter materials and, in particular, the composite materials disclosed in these documents are not intended to sorb gases other than hydrogen. The skilled person would therefore not consider these documents when attempting to solve the posed objective technical problem. Furthermore, even if this were the case, these documents would not lead the skilled person to the claimed subject-matter since they do not disclose the distinguishing feature (b).

Moreover, feature (b) is not disclosed in any other available document of the state of the art and common general knowledge would not lead the skilled person -

in the board's judgment - to the claimed subject-matter, either.

Therefore, the subject-matter of claim 1 of the main request involves an inventive step. Claims 2 to 10 are dependent on claim 1. Accordingly, the subject-matter of claims 1 to 10 of the main request involves an inventive step (Article 52(1) EPC and Article 56 EPC 1973).

3. Conclusion

For the above reasons the board is of the opinion that, taking into consideration the amendments of the patent according to the main request, the patent and the invention to which it relates meet the requirements of the EPC (Article 101(3) (a) EPC and Article 111(1) EPC 1973).

Order

For these reasons it is decided that:

1. The decision under appeal is set aside.
2. The case is remitted to the department of first instance with the order to maintain the patent as amended in the following version:

Description: columns 1, 2, 7, 8 of the patent specification, columns 3, 4, 5, 6 filed during the oral proceedings before the board,

Claims: 1-10 of the Main Request filed with the statement of the grounds of appeal dated 17 December 2010,

Drawings: Figures 1-4 of the patent specification.

The Registrar:

The Chairman:



S. Sánchez Chiquero

G. Eliasson

Decision electronically authenticated