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Datasheet for the decision of 30 April 2013

Case Number: T 2330/09 - 3.2.07

Application Number: 03732642.8

Publication Number: 1506063

IPC: B05D 7/24

Language of the proceedings: EN

Title of invention:
Atomisation of a precursor into an excitation medium for coating a remote substrate

Patent Proprietor:
Surface Innovations Limited

Opponent:
Dow Corning Ireland Limited

Headword:
-

Relevant legal provisions:
EPC Art. 123(2), 123(3)
EPC R. 115(2)
RPBA Art. 15(3)

Keyword:
"Oral proceedings held in the absence of both parties"
"Amendments extend beyond content of the application as originally filed and extend the scope of protection of claim 1 as granted (all requests - yes)"

Decisions cited:
T 0331/87

Catchword:
-

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Beschwerdekammern | Boards of Appeal | Chambres de recours

Case Number: T 2330/09 - 3.2.07

D E C I S I O N
of the Technical Board of Appeal 3.2.07
of 30 April 2013

Appellant: (Patent Proprietor)	Surface Innovations Limited Redgate House Wolsingham, County Durham DL13 3HH (GB)
Representative:	Leland, Emma Clare Greaves Brewster LLP Copa House Station Road Cheddar, North Somerset BS27 3AH (GB)
Respondent: (Opponent)	Dow Corning Ireland Limited Unit 12, Owenacurra Business Park Midleton, County Cork (IE)
Representative:	Donlan, Andrew Michael Dow Corning Limited IP Department Cardiff Road CF63 2YL South Glamorgan Barry (GB)
Decision under appeal:	**Decision of the Opposition Division of the European Patent Office posted 5 October 2009 revoking European patent No. 1506063 pursuant to Article 101(3)(b) EPC.**

Composition of the Board:

Chairman: H. Meinders
Members: H. Hahn
I. Beckedorf

Summary of Facts and Submissions

I. The patent proprietor lodged an appeal against the decision of the Opposition Division to revoke the European patent No. 1 506 063.

With its statement of the grounds of appeal the appellant requested to set aside the impugned decision and to maintain the patent either on the basis of claims 1-25 of the main request or claims 1-25 of any of the auxiliary requests 1-4 (the claims 19 and 20 have been deleted without renumbering the remaining claims 21-25 in all five requests), all requests filed together with the statement of grounds of appeal. As an auxiliary request oral proceedings were requested.

The respondent (opponent) replied thereto and requested that the impugned decision be upheld.

II. The following document of the opposition procedure is cited in the present decision:

D2 = WO-A-02 28548

while the following cited documents were submitted by the appellant with its statement of grounds of appeal:

D14 = "Stable glow plasma at atmospheric pressure", Kanazawa, Kogoma, Moriwaki & Okazaki, J. Phys. D: Appl. Phys. 21 (1988), pages 838-840

D15 = "Glow plasma treatment at atmospheric pressure for surface modification and film deposition", Kanazawa, Kogoma, Moriwaki & Okazaki, Nuclear

Instruments and Methods in Physics Research B37/38 (1989), pages 842-845

D16 = "The improvement of the atmospheric-pressure glow plasma method and the deposition of organic films", Yokoyama, Kogoma, Kanazawa, Moriwaki & Okazaki, J. Phys. D: Appl. Phys. 23 (1990), pages 374-377

III. The opposition had been filed against the patent in its entirety under Article 100(a) EPC, for lack of novelty and inventive step, under Article 100(b) EPC, that the patent does not disclose the invention in a manner sufficiently clear and complete for it to be carried out by the person skilled in the art, and under Article 100(c) EPC, for extending beyond the content of the application as originally filed.

The Opposition Division decided at oral proceedings, which were held in the absence of the appellant, who although duly summoned did not appear (as announced), that claim 1 of the then main request contravened Article 123(3) EPC for no longer having the feature "in a chamber", while claim 1 of the then auxiliary request was considered to contravene Article 123(2) EPC for not including the term "vacuum" in the term "in a chamber" when it was added to claim 1 before grant. Therefore the amended patent did not comply with the EPC and was thus revoked according to Article 101(3)(b) EPC.

IV. Claim 1 of the main request (identical with that of the main request underlying the impugned decision) reads as follows (amendments as compared to claim 1 as granted are underlined with deletions in strikethrough; emphasis added by the Board):

"1. A method for depositing a coating, said method comprising the steps of;

introducing an atomised coating forming material into an exciting medium ~~in a chamber~~;

said exciting medium is a plasma discharge and/or species generated by a plasma, operated at atmospheric, sub-atmospheric, or low pressure;

said atomised coating forming material passing through the excitation medium;

a substrate is positioned ~~in said chamber~~ remotely from the exciting medium and means for generating the exciting medium so that the substrate and coating forming material applied thereto are substantially unaffected by the exciting medium and means for generating the exciting medium;

characterised in that said coating forming material is liquid or liquid/solid slurry which is activated to form activated precursor species to the coating including any or any combination of monomer radicals, ions or oligomers to ~~the coating~~, which activated precursor species are subsequently deposited onto said substrate to form the coating."

V. Claim 1 of auxiliary request 1 (identical with that of the auxiliary request underlying the impugned decision) reads as follows (amendments as compared to claim 1 as granted are underlined with deletions in strikethrough; emphasis added by the Board):

"1. A method for depositing a coating, said method comprising the steps of;

introducing an atomised coating forming material into an exciting medium in a chamber;

said exciting medium is a plasma discharge and/or species generated by a plasma, operated at atmospheric, sub-atmospheric, or low pressure;

said atomised coating forming material passing through the excitation medium;

a substrate is positioned in said chamber remotely from the exciting medium and means for generating the exciting medium so that the substrate and coating forming material applied thereto are substantially unaffected by the exciting medium and means for generating the exciting medium;

characterised in that said coating forming material is liquid or liquid/solid slurry which is activated to form activated precursor species to the coating including any or any combination of monomer radicals, ions or oligomers ~~to the coating~~, which activated precursor species are subsequently deposited onto said substrate to form the coating, and the means for generating the exciting medium is controlled to ensure that the exciting medium does not extend to the substrate while applying the coating to the substrate."

VI. Claim 1 of auxiliary request 2 reads as follows (amendments as compared to claim 1 as granted are underlined with deletions in strikethrough; emphasis added by the Board):

"1. A method for depositing a coating, said method comprising the steps of;

introducing an atomised coating forming material into an exciting medium in a chamber adaptable for creating a vacuum therein;

said exciting medium is a plasma discharge and/or species generated by a plasma, operated at atmospheric, sub-atmospheric, or low pressure;

said atomised coating forming material passing through the excitation medium;

a substrate is positioned in said chamber remotely from the exciting medium and means for generating the exciting medium so that the substrate and coating forming material applied thereto are substantially unaffected by the exciting medium and means for generating the exciting medium;

characterised in that said coating forming material is liquid or liquid/solid slurry which is activated to form activated precursor species to the coating including any or any combination of monomer radicals, ions or oligomers ~~to the coating~~, which activated precursor species are subsequently deposited onto said substrate to form the coating, and the means for generating the exciting medium is controlled to ensure that the exciting medium does not extend to the substrate while applying the coating to the substrate."

VII. Claim 1 of auxiliary request 3 reads as follows (amendments as compared to claim 1 as granted are underlined with deletions in strikethrough; emphasis added by the Board):

"1. A method for depositing a coating, said method comprising the steps of;

introducing an atomised coating forming material into an exciting medium in a vacuum chamber;

said exciting medium is a plasma discharge and/or species generated by a plasma, operated at atmospheric, sub-atmospheric, or low pressure;

said atomised coating forming material passing through the excitation medium;

a substrate is positioned in said chamber remotely from the exciting medium and means for generating the exciting medium so that the substrate and coating forming material applied thereto are substantially unaffected by the exciting medium and means for generating the exciting medium;

characterised in that said coating forming material is liquid or liquid/solid slurry which is activated to form activated precursor species to the coating including any or any combination of monomer radicals, ions or oligomers ~~to the coating~~, which activated precursor species are subsequently deposited onto said substrate to form the coating, and the means for generating the exciting medium is controlled to ensure that the exciting medium does not extend to the substrate while applying the coating to the substrate."

VIII. Claim 1 of auxiliary request 4 reads as follows (amendments as compared to claim 1 as granted are underlined with deletions in strikethrough; emphasis added by the Board):

"1. A method for depositing a coating, said method comprising the steps of;

introducing an atomised coating forming material into an exciting medium in a vacuum chamber;

said exciting medium is a plasma discharge and/or species generated by a plasma, operated at atmospheric, sub-atmospheric, or low pressure;

said atomised coating forming material passing through the excitation medium;

a substrate is positioned in said chamber remotely from the exciting medium and means for generating the exciting medium so that the substrate and coating forming material applied thereto are substantially unaffected by the exciting medium and means for generating the exciting medium;

characterised in that said coating forming material is liquid or liquid/solid slurry which is activated to form activated precursor species to the coating including any or any combination of monomer radicals, ions or oligomers ~~to the coating~~, which activated precursor species are subsequently deposited onto said substrate to form the coating, and the means for generating the exciting medium is controlled to ensure that the exciting medium does not extend to the substrate while applying the coating to the substrate."

IX. With a communication annexed to the summons to oral proceedings the Board gave its preliminary opinion with respect to the claims of these five requests.

The Board had issues with Articles 123(2) and/or (3) EPC with all these requests.

X. With letter dated 20 March 2013 the respondent reiterated that its request to dismiss the appeal is maintained and that the impugned decision should be upheld. Furthermore, it stated that it would not submit any further substantive argumentation given the Board's comments in its annex to the summons.

XI. With letter dated 3 April 2013 submitted by fax on the same date the appellant informed the Board that neither the appellant nor the representative would be attending

oral proceedings. No substantive arguments were submitted.

XII. With letter dated 5 April 2013 submitted by fax on the same day the respondent announced that it likewise would not attend the oral proceedings.

XIII. Oral proceedings were held on 30 April 2013. As announced with their above mentioned letters neither the appellant nor the respondent attended; the oral proceedings continued in their absence in accordance with Rule 115(2) EPC and Article 15(3) RPBA. At the end of the oral proceedings the decision was announced.

Reasons for the Decision

1. The appellant's statement in its letter dated 3 April 2013 - that it would not attend the oral proceedings - is considered by the Board as a withdrawal of its auxiliary request for oral proceedings, as is consistent Case Law (see Case Law of the Boards of Appeal, 6th edition 2010, VI.C.2.2), the appellant relying on its written submissions only.

2. In the annex accompanying the summons for oral proceedings the Board, taking account of the statement of grounds of appeal and the respondent's reply thereto, expressed its preliminary opinion as follows:

"5. Allowability of amendments in claims 1 (Article 123(2) and (3) EPC)

Main request

5.1 The documents D14-D16 - all of them cited at page 3 of D2 - submitted as an evidence that no vacuum chamber would be necessary for an atmospheric pressure plasma discharge represent in any case a proof that a ***chamber*** *is actually present and/or necessary even for a treatment at atmospheric pressure since all these documents show in their figures 1 an apparatus comprising a chamber formed by the Pyrex glass reactor wherein the plasma generation means is arranged.*

Furthermore, from these documents D14-D16 it appears to be evident for the skilled person that a ***vacuum chamber*** *is actually necessary in order to provide means for having a defined atmosphere during the (plasma) treatment, which commonly and simply is achieved by evacuating the chamber several times. Only purging the apparatus chamber with the intended atmosphere will be a lengthy and costly procedure (very often He is used as a discharge gas or to dilute the reactant). This conclusion is supported by D2 itself which does not mention or show any "vacuum chamber" but discloses the evacuation of the residual gas from the atmospheric pressure plasma discharge apparatus used in examples 1-4 shown in its figure 1 (see D2, paragraphs [0023] and [0024]).*

5.1.1. The Guidelines for Examination C-VI-5.3.10 (Version December 2007) and the decision T 331/87 (published in OJ EPO 1-2/1991, 22) cited therein, both

quoted by the appellant, are not particularly relevant with respect to the Article 123(3) EPC objection made by the Opposition Division since both concern ***only Article 123(2) EPC*** *in the context of replacement or removal of a feature from a claim* ***during the examination procedure****.*

5.1.2. With respect to the amendments made in claim 1 of the main request the following remarks are made:

i) It appears to be evident that the removal of the term ***"in a chamber"*** *extends the scope of claim 1 in comparison to claim 1 as granted since the exciting medium and the substrate no longer have to be arranged within the same chamber, let alone in a chamber at all. Claim 1 of the main request thus appears to contravene Article 123(3) EPC.*

ii) The admissibility of shifting the term ***"to the coating"*** *from its original place in claim 1 as granted: " including any or any combination of monomer radicals, ions or oligomers to the coating," to the present term: "is activated to form activated precursor species* ***to the coating*** *including any or any combination of monomer radicals, …" of claim 1 of the main request appears to be more than questionable under Article 123(2) and (3) EPC, particularly with respect to the scope of claim 1 as granted. Furthermore, this shifting of the feature "to the coating" does not appear to clarify its intended meaning. The proposed amendment additionally - the appellant has not argued that it would be a correction according to Rule 139 EPC - appears not to be obvious in the sense that it is immediately evident that nothing else would have been intended than what*

might be offered as a correction of the phrase as granted. Finally, there is the question whether this amendment is occasioned by a ground of opposition (Rule 80 EPC).

iii) With respect to the feature ***"liquid or liquid/solid slurry"*** *added to claim 1 of the main request it appears that this feature in combination with the existing further feature of claim 1 "including any or any combination of monomer radicals, ions or oligomers" forms an intermediate generalisation of a combination of two separate embodiments which combination, however, appears to have* ***no*** *basis in the application as originally filed (corresponding to the published WO-A-03 097245 which in the following is always quoted) (compare claim 18 and claims 19 to 21 as originally filed which define two distinct embodiments referring to claim 1 but* ***not*** *to each other; the same holds true with respect to the description, see page 7, first and last paragraphs).*

iv) In this context it is additionally remarked that said coating forming material in the form of a "liquid or liquid/solid slurry" is disclosed only in combination with ***an ultrasonic nozzle or a nebulizer*** *as the atomiser which, however, have not been introduced into the subject-matter of claim 1 of the main request. Furthermore, the respondent is correct in that only the* ***atomised*** *coating forming material, i.e. the atomised liquid or atomised liquid/solid slurry, is activated to form activated precursor species but* ***not*** *the liquid or liquid/solid slurry coating forming material as such. Hence it appears that this feature contravenes Article 123(2) EPC.*

*v) With respect to the feature "and/or **species generated by a plasma**" it appears that the respondent is correct in that said feature has only a basis as "and/or species generated by a **remote** plasma" (see page 4, seventh paragraph and claims 10 and 11 as originally filed).*

5.1.3. Consequently, it appears that claim 1 of the main request - taking account of points ii) to v) above - additionally contravenes Article 123(2) EPC.

Auxiliary request 1

5.2 With respect to claim 1 of auxiliary request 1 the following is noted:

*vi) The appellant has not quoted any basis for the feature "and the means for generating the exciting medium is controlled to ensure that the exciting medium does not extend to the substrate while applying the coating to the substrate" added at the end of claim 1 of auxiliary request 1 which seems to be derived from paragraph 3 of page 9 of the application as originally filed but from which the final phrase "so as to have any significant effect thereon" - which appears to render said feature further unclear (this added feature appears to be objectionable under Article 84 EPC for defining a result to be achieved) - has been omitted. Furthermore, the combination of this added feature with the other features of claim 1 of auxiliary request 1 appears to create an intermediate generalisation which appears **not** to have any basis in the application as originally filed, contrary to Article 123(2) EPC.*

*vii) It appears that the Opposition Division was correct in that there appears to exist **no** basis for the generalisation "in a chamber" of claim 1 since the application as originally filed, when it concerns a chamber, only discloses "**a vacuum chamber**" to which expression is referred when using the further expressions "said chamber" and "the chamber" (see WO-A-03 097245, page 9, lines 13 and 26 to 30; page 10, lines 1, 8, 10 and 11; page 17, line 20; page 18, lines 1, 2 and 11; and original claims 25, 28 and 29). Likewise the examples of the application are made in an apparatus which is evacuated to base pressure and which has a vacuum chamber (see page 13, lines 11 to 16; page 14, lines 9 to 12 and lines 23 to 26; page 17, lines 4 to 5 and lines 19 to 23; page 18, lines 1, 2 and 11; figure 5).*

The passage of the application as originally filed allegedly forming a basis for the generalisation "in a chamber", i.e. page 4, fifth paragraph, actually only discloses that "the plasma is operated at atmospheric, sub-atmospheric or low pressure …". This passage is thus silent with respect to the design features of the used apparatus, particularly in the light of the working examples and the original apparatus claim 28 of the present application. As already mentioned in the context of the main request a vacuum chamber generally will be used for evacuating any residual gas and in order to shorten the purging with the plasma gas (compare e.g. D2).

Therefore the feature "in a chamber" appears to contravene Article 123(2) EPC.

5.2.1. The objections raised in points ii) to v) with respect to claim 1 of the main request appear to apply mutatis mutandis to claim 1 of auxiliary request 1, which comprises the identical features. Claim 1 of auxiliary request 1 thus appears to contravene Article 123(2) and (3) EPC.

Auxiliary request 2

*5.3 viii) The feature "**adaptable for creating a vacuum therein**" of claim 1 of auxiliary request 2 has **neither** an explicit basis in the application as originally filed **nor** can it be derived in a direct and unambiguous manner from it, let alone from the quoted passage at page 4, fifth paragraph, for the same reasons as the feature "in a chamber". There exists no disclosure in the application as originally filed that any chamber can be used which can be adapted for creating a vacuum therein, e.g. an open chamber which may be closed by a suitable cover and which subsequently can be made vacuum tight and be connected with a vacuum pump. Claim 1 of auxiliary request 2 therefore appears to contravene Article 123(2) EPC.*

5.3.1. The objections raised in points ii) to v) with respect to claim 1 of the main request appear to apply mutatis mutandis to claim 1 of auxiliary request 2, which comprises the identical features. Claim 1 of auxiliary request 2 therefore also for these reasons appears to contravene Article 123(2) and (3) EPC.

Auxiliary request 3

5.4 Although claim 1 of auxiliary request 3 correctly defines the vacuum chamber and thereby appears to overcome this Article 123(2) EPC problem the other objections raised in points ii) to v) with respect to claim 1 of the main request appear to apply mutatis mutandis to claim 1 of auxiliary request 3, which comprises the identical features. Claim 1 of auxiliary request 3 therefore appears to contravene Article 123(2) and (3) EPC for these reasons.

Auxiliary request 4

5.5 Similarly claim 1 of auxiliary request 4 defines the vacuum chamber and thereby appears to overcome this Article 123(2) EPC problem but the other objections raised in points ii) to v) with respect to claim 1 of the main request and in point vi) with respect to claim 1 of auxiliary request 1 appear to apply mutatis mutandis to claim 1 of auxiliary request 4, which comprises the identical features. For these reasons claim 1 of auxiliary request 4 appears to contravene Article 123(2) and (3) EPC.

5.6 Hence none of the present five requests appears to be allowable under Article 123(2) and/or 123(3) EPC."

3. The appellant did **not** reply in substance to these objections (see point XI above). Since there has been no attempt by the appellant to refute or overcome the objections under Article 123(2) and/or (3) EPC raised in the above communication, the Board sees no reason to depart from its preliminary opinion expressed therein.

4. With regard to the above the Board concludes - for the reasons set out above - that the ground of opposition under Article 100(c) EPC holds against the subject-matter of claim 1 of the main request and of the claims 1 of the auxiliary requests 1-4. The five requests are therefore not allowable.

Order

For these reasons it is decided that:

The appeal is dismissed.

The Registrar: The Chairman:

G. Nachtigall H. Meinders