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Datasheet for the decision of 13 July 2021

Case Number: T 0148/16 - 3.3.10

Application Number: 10705412.4

Publication Number: 2398518

IPC: A61L27/30, A61L27/50, A61L27/54

Language of the proceedings: EN

Title of invention:
SURFACE TREATMENT PROCESS FOR IMPLANTABLE MEDICAL DEVICE

Patent Proprietor:
Neoss Limited

Opponent:
Jennissen, Herbert

Headword:
SURFACE TREATMENT PROCESS FOR IMPLANTABLE MEDICAL DEVICE/ NEOSS

Relevant legal provisions:
EPC Art. 56, 123(2)
RPBA Art. 13(1), 13(3)
RPBA 2020 Art. 25(3)

Keyword:

Summons issued under RPBA 2007 cancelled - Article 13 RPBA 2007 still applicable
Amendments in claim requests - only deletions of dependent claims - intermediate generalization- extension beyond the content of the application as filed (yes)
Claim requests amended after summons to oral proceedings - admitted
Documents submitted after summons to oral proceedings - not admitted
Inventive step - improvement not credible - obvious alternative

Decisions cited:

Catchword:

Europäisches Patentamt
European Patent Office
Office européen des brevets

Beschwerdekammern

Boards of Appeal

Chambres de recours

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Case Number: T 0148/16 - 3.3.10

D E C I S I O N
of Technical Board of Appeal 3.3.10
of 13 July 2021

Appellant I: (Patent Proprietor)	Neoss Limited Windsor House Cornwall Road Harrogate HG1 2PW (GB)
Representative:	HGF 1 City Walk Leeds LS11 9DX (GB)
Appellant II: (Opponent)	Jennissen, Herbert Alte Klosterstrasse 19 50858 Köln (DE)
Representative:	Nobbe, Matthias Demski & Nobbe Patentanwälte Mülheimer Strasse 210 47057 Duisburg (DE)
Decision under appeal:	**Interlocutory decision of the Opposition Division of the European Patent Office posted on 25 November 2015 concerning maintenance of the European Patent No. 2398518 in amended form.**

Composition of the Board:

Chairman	M. Kollmannsberger
Members:	J.-C. Schmid
	T. Bokor

Summary of Facts and Submissions

I. Appellant I (Proprietor of the patent) and Appellant II (opponent) lodged an appeal against the decision of the Opposition Division maintaining European patent No. 2 398 518 on the basis of claim 1 to 14 of the third auxiliary request filed on 9 November 2015 in the oral proceedings before the Opposition Division.

Claim 1 of the third auxiliary request reads as follows:

"1. A surface treatment process for an implantable medical device including a metallic or metallic alloy implant body having a surface dielectric insulating layer, the process comprising the application of ions from a solution of 1% $MgCl_2 \cdot 6H_2O$ onto said dielectric insulating layer, and drying the implant, the ions being capable of forming an electrostatic charge and locally creating an electric field associated with at least part of the surface of said implantable medical device upon application of a liquid, preferably an electrolyte solution, to said surface."

I. A notice of opposition had been filed by Appellant II requesting the revocation of the patent in suit in its entirety on the grounds of lack of novelty and inventive step (Article 100(a) EPC) and insufficiency disclosure of the invention (Article 100(b) EPC). *Inter alia* following documents were submitted in opposition proceedings:

(3) Rupp F. et al. "Enhancing surface free energy and hydrophilicity through chemical modification of

microstructured titanium implant surfaces", Journal of Biomedical Materials Research., Part A, vol. 76A, no. 2, 2006, pages 323-334,

(5) EP-A-1 847 278 and

(7) EP-A-0 987 031.

II. The Opposition Division held that the subject-matter of claim 1 of the then pending main, first and second auxiliary requests did not fulfil the requirements of Article 123(2) EPC. The process of claim 1 of the main request differed from that of claim 1 as granted in that the application of ions was carried out from a solution of $MgCl_2$. The only passage in the application as filed relating to magnesium chloride referred to a very specific form of magnesium chloride, namely the hexahydrate form which was furthermore applied in a very specific concentration of 1% to an implantable medical device comprising a metallic or metallic alloy implant body. Magnesium chloride was thus disclosed in the original application only as part of the structure of the hexahydrate form, without any variability. Thus, disassembling $MgCl_2 \cdot 6H_2O$ into one of its constituent components $MgCl_2$ was not directly and unambiguously derivable from the application as filed. There was also a clear and recognisable relationship amongst the salt $MgCl_2 \cdot 6H_2O$, its specific concentration and the nature of the implant. The skilled person would have recognised without any doubt that those characteristics were closely related to each other. Consequently, taking $MgCl_2 \cdot 6H_2O$ out of its initial context added also new subject-matter. Claims 1 of auxiliary requests 1 and 2 differed from claim 1 of the main request in that the ions were applied from a solution $MgCl_2 \cdot 6H_2O$ without specifying the concentration of 1%. Accordingly, they were also not allowable under Article 123(2) EPC.

With respect to inventive step, the Opposition Division considered that document (3) represented the closest prior art. This document aimed as the present invention to increase the initial wettability on the implant surface and required the minimum of modifications to arrive to the claimed invention. This document taught that a surface oxide film was spontaneously formed in air as a thin TiO_2 passivation layer, i.e. a dielectric insulating layer. To improve the initial wettability, the sandblasted and acid etched (SLA) surface was stored in a NaCl solution. Na^+ and Cl^- ions absorbed onto the charged surface. The thus modified SLA surface was further dried under vacuum. Vacuum treatment after NaCl storage caused no loss of hydrophilicity.

The subject-matter of claim 1 of the third auxiliary request differed from the disclosure of document (3) in that the surface treatment process for the metallic medical device comprised the application of ions from a solution of 1 % $MgCl_2 \cdot 6H_2O$ instead of an isotonic NaCl solution (0.9%).

The objective technical problem was the provision of a process for improving the wettability on the surface of a metallic implant.

The technical report submitted with a letter dated 29.04.2015, (document (12)) compared the wettability and conductivity of an implant after immersion in an isotonic solution of NaCl according to document (3) or in a solution of a 1% solution of $MgCl_2 \cdot 6H_2O$ according to the invention. The higher conductivity was obtained by using the solution of 1% $MgCl_2 \cdot 6H_2O$ indicating higher wetting of the implant. Hence, this report demonstrated that the increased conductibility was linked to the use of the solution of 1% $MgCl_2 \cdot 6H_2O$ in

which the implants had been dipped. The technical problem was therefore solved by the proposed solution.

The skilled person faced with the problem of improving the wettability of the surface of a metallic implant would not have arrived at the claimed solution to use a solution of 1% $MgCl_2 \cdot 6H_2O$. Only document (7) disclosed a salt solution comprising $MgCl_2 \cdot 6H_2O$ (see example 1), but providing a carbonated calcium phosphate coating on the implant surface. Furthermore, the concentration of $MgCl_2 \cdot 6H_2O$ was 0.15%, i.e. significantly less than the claimed 1%.

The subject-matter of the claims according to the then pending third auxiliary request involved therefore an inventive step.

III. During the oral proceedings held on 13 July 2021 before the Board, Appellant I defended the patent on the basis of a main request, first to third auxiliary requests filed with letter dated 10 June 2021 and a fourth auxiliary request filed during the oral proceedings before the Board.

Claim 1 of the main request is identical to claim 1 of the first auxiliary request pending before the Opposition Division and differs from claim 1 as granted in that the ions are applied "from a solution of $MgCl_2 \cdot 6H_2O$".

Claim 1 of the first auxiliary request differs from claim 1 of the main request in that the medical device includes a metallic or metallic alloy implant body.

Claim 1 of the second auxiliary request is identical to claim 1 of the third auxiliary request maintained by

the Opposition Division (see the full wording of this claim in paragraph I above).

Claim 1 of the third auxiliary request differs from claim 1 of the second auxiliary requests in that the applied ions are insufficient to perform any kind of protective coating function for the implant.

Claim 1 of the fourth auxiliary request differs from claim 1 of the third auxiliary request in that the ions are applied to pits, pores and capillary features of the implant surface.

IV. According to Appellant I, the main request and the first to third auxiliary requests should be admitted to the proceedings. They were requests based on former requests, only some dependent claims were deleted. This amendment did not create any new factual situation.

The section on page 6, line 18-20 of the application as filed disclosed that the ions were applied from a solution of 1% magnesium chloride hexahydrate. Claim 17 and 18 of the application as filed disclosed that the ions could be *inter alia* Cl^- and the cation *inter alia* Mg^{++}. Once in solution, $MgCl_2 \cdot 6H_2O$ was only magnesium chloride. Furthermore the solution could be an electrolyte solution where the ion concentration might vary. Consequently, the amendment according to which the ions are applied from a solution of $MgCl_2 \cdot 6H_2O$ did not add any new subject-matter. Claim 1 of the main request and first auxiliary request did not infringe the requirements of Article 123(2) EPC.

Document (3) represented the closest prior art to the invention. The subject-matter of claim 1 of the second auxiliary request differed from the process disclosed

in document (3) in that magnesium ions from a solution of 1% $MgCl_2 \cdot 6H_2O$ were applied to the surface leading to an improved wettability achieved through the ions on the surface and the electrostatic charge caused by the ions on the surface. This improved wettability was demonstrated in the test reports of documents (12), (21) and (22).

The comparative tests disclosed in documents (21) and (22) supported the effects as shown in document (12) and were prepared as a response to the Board's communication dated 6 March 2020. The proprietor could no longer contact the employees making the original measurements. It turned out that an external independent expert had to be commissioned, and COVID caused further delays. These constituted exceptional circumstances. The report directly addressed the communication of the Board, and proved the improvement achieved by the magnesium chloride solution.

The improvement of wettability was achieved by other steps in the process of document (3), in particular by the use of nitrogen. Document (3) gave no hint at the use of magnesium ions as alternative to sodium ions. The skilled person would have had no motivation to look at document (5) which was silent on any dielectric layer. This document taught a protective layer against contaminations. Even if the skilled person had looked at document (5), a purposive selection would have been required. Neither the 1%, nor the $MgCl_2 \cdot 6H_2O$ was taught in document (5). The subject-matter of claim 1 of the second auxiliary request involved therefore an inventive step.

In claim 1 of the third auxiliary request, the ions did not need not form a protective layer. The combination

of document (3) with document (5) would have lead to a complete protective layer. The subject-matter of auxiliary request 3 involved therefore an inventive step.

The fourth auxiliary request was filed as the direct response to the finding of lack of inventive step by the Board during the oral proceedings. The request was a legitimate reaction to the discussion of inventive step and overcame existing objections. Hence, it should be admitted into the appeal proceedings.

V. According to Appellant II, the main request and the first to fourth auxiliary requests should not be admitted into the appeal proceedings. The test reports submitted by letter dated 10 June 2021 (documents (21) and (22) should also not be admitted into the appeal proceedings, since they were submitted only four weeks before the oral proceedings.
Claim 1 of the main request and auxiliary requests 1 to 4 did not meet the requirements of Article 123(2) EPC. Taking out specifically the feature relating to the nature of the salt, i.e. $MgCl_2 \cdot 6H_2O$, from the embodiment disclosed on page 6, lines 18 to 22 of the application as filed and incorporating this feature into the claim without specifying the other characteristics attached thereto, namely its concentration in the solution, the material composition of the medical device and/or the ultrasonic treatment to remove air bubbles in the roughened surface constituted an inadmissible intermediate generalization.

Document (3) represented the closest prior art to the invention. This document taught that on the surface of a titanium implant, an oxide film formed spontaneously

in air as a thin titanium dioxide passivation layer, which was an electrical insulation layer. According to document (3) micro-structuring by sandblasting and acid etching (SLA) should increase the osteogenic properties of the titanium implant. To improve the initial wettability and maintain the SLA microstructure, the SLA implant was stored in a sodium chloride solution to adsorb the Na^+ and Cl^- ions present on the surface after drying. The SLA implant thus modified was dried and no loss of hydrophilicity was seen. Document (3) taught that a salt in general improves wettability.

The test report disclosed in document (12) did not prove any improvement in wettability at all. Moreover, it was not disclosed how the conductivity measurement was performed for a dry implant coated with either NaCl or MgCl2.

In document (3) the implant was stored in a sodium chloride solution for the purpose of improving the wettability of its surface. The application of other salts was obvious for the skilled person. In document (5), the protective layer had the very purpose of improving wettability. This document taught that magnesium chloride was an obvious equivalent of sodium chloride solution. $MgCl_2 \cdot 6H_2O$ was the standard stable form of magnesium chloride. Therefore document (5) suggested the 1% $MgCl_2 \cdot 6H_2O$ solution, this content of salt being generally used.

The subject-matter of claim 1 of the second and third auxiliary requests lacked therefore an inventive step.

VI. Appellant I (patent proprietor) requested that the decision under appeal be set aside and that the patent be maintained on the basis of the main request or

subsidiarily on the basis of one of the first to third auxiliary requests, all requests submitted with letter dated of 10 June 2021, based on earlier requests, or on the basis of the fourth auxiliary request submitted during the op before the Board.

Appellant II (opponent) requested that the decision under appeal be set aside and that the patent be revoked.

VII. At the end of the oral proceedings the decision of the Board was announced.

Reasons for the Decision

1. The appeal is admissible.

Procedural matters - Admittance of the main and first to third auxiliary requests

2. Appellant II objected to the admission of these requests, since they were late filed and should already have been filed earlier.

In the present case, the first summons to oral proceedings was sent on 26 July 2019, but the oral proceedings were cancelled in view of the ongoing Covid pandemic. A second summons was sent on 10 September 2020. Against this background, the Board considers that for the present case the provisions of Article 13 RPBA 2007 are applicable (Article 25(3) RPBA), given that the cancellation of the first oral proceedings could not be imputed to the parties.

Under Article 13(1) RPBA 2007 any amendment to a party's appeal case after it has filed its grounds of appeal may be admitted and considered at the Board's discretion, which shall be exercised in view of inter alia the current state of the proceedings and the need for procedural economy. Pursuant to Article 13(3) RPBA 2007 amendments sought to be made after oral proceedings have been arranged shall not be admitted if they raise issues which the Board or the other party cannot be expected to deal with without adjournment of the oral proceedings.

The main request is based on former first auxiliary request wherein dependent claims 6 to 8 have been removed, the first auxiliary request is based on former second auxiliary request wherein dependent claims 6 to 8 have been removed and the third auxiliary request on former fourth auxiliary request wherein dependent claims 6 to 8 have been removed.

Former first to fourth auxiliary requests are requests on which the appealed decision is based and were resubmitted together with the statement of grounds of appeal or with the reply to the statement of grounds of appeal of appellant II.

Thus, with respect to the former requests, the main request was withdrawn and some dependent claims were abandoned in the auxiliary requests.

The withdrawal of a main request is a procedural step which cannot result in the non-admission of lower-ranking requests that have been up-ranked.

Furthermore, in the present case the deletion of dependent claims 6 to 8 does not constitute a fresh

case justifying non-admission. This deletion does not result in a changed factual situation. Therefore, no new objections arise and there is no need to start a new discussion.

Accordingly, the main request and the first to third auxiliary requests are admitted into the appeal proceedings under Articles 13(1) and 13(3) RBPA 2007.

Admission of the test reports (documents (21) and (22)) filed on 10 June 2021.

3. Appellant I indicated that these test reports were filed in response of the communication dated March 2020. Due to exceptional circumstance, in particular due to the Covid situation, these experiment could not have been filed earlier.

However, the communication of the Board did not contain any new issue with respect to the inventive objection raised by Appellant II in its statement of grounds of Appeal. Accordingly, these tests reports should have been filed much earlier, in any case, before the communication of the Board was issued, in view of the state of the proceedings (Article 13(1) RPBA 2007).

Accordingly, the test reports of documents (21 and (22) are not admitted into the proceedings (Article 13(1) RPBA 2007).

Main and first auxiliary request - Article 123(2) EPC.

4. Claim 1 of these requests was amended with respect to claim 1 of the patent as granted in that the ions are applied from a solution of $MgCl_2 \cdot 6H_2O$.

According to Appellant, this amendment is based on the section at page 6, lines 18 to 20 of the application as filed, which relates to an embodiment wherein an implant, comprising a metallic or metallic alloy implant body, is dipped or immersed in a solution of 1% $MgCl_2 \cdot 6H_2O$.

However, it is not directly and unambiguously derivable from this section that ions may be applied to the surface of any implant with solutions having any $MgCl_2 \cdot 6H_2O$ content. The originally filed claims 17 and 18 generally relate to anions and cations without reference to particular salts. The section on page 6, line 27 and 28 of the application as filed discloses that the concentration of the electrolytes may be variable, but this disclosure relates to the solution comprising the ions, not to the ions generated by the addition of $MgCl_2 \cdot 6H_2O$ into the solution.

Accordingly, claim 1 of the main and first auxiliary request does not meet the requirement of Article 123(2) EPC.

Second auxiliary request – inventive step

5. *Closest prior art*

Document (3) relates to titanium implant surfaces and discloses that a surface oxide film is spontaneously formed in air as a thin TiO_2 passivation layer, i.e. a dielectric insulating layer (page 324, left-hand column, third paragraph).

This document teaches that micro-structuring by SLA under protecting gas conditions followed by liquid storage increases wettability due to the prevention of

contamination that occurs during air contact. To improve the initial wettability, the SLA surface is stored in a NaCl solution where Na^+ and Cl^- ions adsorb onto the charged surface (pages 325, left-hand column). The thus modified SLA surface is further dried under vacuum. Vacuum treatment after NaCl storage caused no loss of hydrophilicity (figure 4d).

The subject-matter of claim 1 of the second auxiliary request differs from the disclosure of document (3) in that the surface treatment of the titanium implant comprises the application of ions from a solution of 1% $MgCl_2 \cdot 6H_2O$ instead of an isotonic NaCl solution (0.9%).

It is uncontested that document (3) represents the closest prior art to the invention.

1. *Technical problem*

Starting from the document (3), appellant I defined the technical problem to be solved as the provision of a process for improving the wettability on the titanium implant surface.

2. *Solution*

The solution proposed by the patent in suit is the process of claim 1 of the second auxiliary request, characterized by the application of a solution of 1% $MgCl_2 \cdot 6H_2O$ onto the dielectric insulating layer.

3. *Success*

To show that an improvement is achieved by the proposed solution, appellant I referred to the results of the comparative report disclosed in document (12).

In this report, the contact angle and conductivity were measured on several titanium implants treated with 0.9% NaCl solution and 1% $MgCl \cdot 6H_2O$ solution. The contact angle and conductivity were also measured on production implants, which were based on a 0.2% NaCl solution.

According to appellant I, each row in table 2 represents a single lot of multiple implants having the same article/lot/batch number. The multiple implants from each article/lot/batch were divided for treatment with different salts. There was no re-dipping or reuse of the same implant for different salts.

According to appellant I, the results presented in Table 2 of (12) show improved wettability of implants dipped in a 1% $MgCl_2$ solution compared to dipping in a 0.9% NaCl solution. Appellant I attributes this improved wettability to a greater electrostatic charge produced by the ions on the implant surface. Therefore, the higher the conductivity, the better the wettability.

In the report of document (12), the wettability of the implants is quantified using a goniometer which measures the contact angle of the liquid droplets on the implant surface.

Twenty-nine implants were dipped in the $MgCl_2$ solution and have all a contact angle equal to 0. Four out of twenty nine implants dipped in NaCl solution have a contact angle greater than 0 indicating less wettability.

According to appellant I, the wettability obtained using a $MgCl_2$ solution is therefore more consistent than with a NaCl solution.

However, these results cannot corroborate that the use of $MgCl_2$ solution compared to NaCl solution provides better wettability. The lower wettability shown on only four implants treated with the 0.9% NaCl solution may be due to various reasons. Firstly, no study on the reliability of the measurements was presented, so the accuracy of the measurements is not known. Secondly, the higher contact angle measured for the four implants may also be caused by other factors, e.g. the nature of the surface of the implants in question. It should be noted that the production implants show a large variability in contact angle.

Therefore, the results based on the contact angle measurements presented in table 2 of document (12) do not allow to conclude that the use of a 1% $MgCl_2$ solution instead of 0.9% NaCl solution improves the wettability of the implant surfaces.

Appellant I also relied on the conductivity results presented in table 2 of document (12). Appellant I explained that the tested implants were used as an electrode for the conductivity measurements.

It remains however unclear how these conductivity results were obtained. No units are given for the conductivity values presented in table 2, so it is not possible to know what exactly was measured. In order to be able to rely on a technical effect for the purposes of demonstrating an inventive step, it must be clear what was done to show this effect.

Furthermore, there does not seem to be a direct relationship between the conductivity value as shown in Table 2 and wettability. The two highest values, "29" and "30", were obtained by implants treated with NaCl solution. The implant with the conductivity value "29" has a contact angle of 14.3 (see last entry in Table 2), while several implants with the value "15", the lowest conductivity value obtained in Table 2, have a contact angle of 0.

Therefore, the results of the conductivity measurements presented in table 2 of document (12) also do not allow to conclude that the use of a 1% $MgCl_2$ solution instead of 0.9% NaCl solution improves the wettability of implants.

Since the required evidence is missing to support an improvement of the wettability achieved by the claimed method compared to the method of document (3), the technical problem as defined above needs to be reformulated in a less ambitious way. In view of the teaching of document (3) the objective technical problem to be solved could be the provision of an alternative method for improving wettability of a metallic or metallic alloy implant surface.

4. *Obviousness*

It remains to be decided whether or not the proposed solution to that objective technical problem, namely the process according to claim 1 of the patent in suit, is obvious in view of the state of the art.

4.1 Document (3) teaches that contamination is the main reason for reduced hydrophilicity of titanium implant

surfaces (page 331, right-hand column, last paragraph). Therefore, protective gas condition during final preparation and storage is crucial for obtaining permanent hydrophilization effect. Figure 4(b) shows that if the SLA surface is stored in water and then dried under nitrogen, the initial hydrophilicity due to pure water immersion is completely lost after subsequent vacuum drying. Figure 4(c) shows that if the SLA surface is stored in a NaCl solution and then dried under nitrogen, the SLA surface retains some hydrophilicity but loses its strong hydrophilicity. In order to retain the strong hydrophilicity after vacuum drying, the SLA surfaces are rinsed under nitrogen protection and directly stored in isotonic NaCl solution protected by nitrogen filling (see page 324, righ-hand column; surface preparation; ModSLA; page 329, figure 4(d)). The carbon concentration on the modSLA surface, corresponding to contamination, is decreased because the surface is not exposed to air (page 331, right-hand column, last paragraph).

4.2 Document (5) provides an implant-treating process whereby the impairment of the biologically active surface of the implant due to contaminants is prevented (see paragraph [0009]). The implant consists of titanium (paragraph [0024]). Therefore, a surface oxide film is spontaneously formed as a thin TiO_2 passivation layer, i.e. a dielectric insulating layer.

The surface of the titanium implant has a macroroughness obtained by sandblasting with a grain having an average grain size in the range from 0.1 mm to 0.5 mm and etched with HCl/H_2SO_4 (see paragraphs [0019], [0020], [0033], [0034]).
Document (5) aims to provide the implant with a protective layer which prevents the deposit of

contaminants on the active surface of the implant, in particular organic compounds, (see sentence crossing columns 2 and 3; paragraphs [0013], [0031]).

The surface of the implant is, if necessary, first cleaned in order to remove organic deposits from the surface (paragraph [0028]). The cleaned surface is provided with a protective layer of salt, which may be applied to the implant by dipping into a 0.01M to 1M salt solution and subsequently is dried under nitrogen (see paragraph [0029]).

In example 1 of document (5), immediately after sand blasting and etching the implant is dipped in a 0.15M NaCl solution and thereafter dried under nitrogen. This immersion into the salt solution and subsequent drying under nitrogen typically produces a layer of a few nanometers, in particular 1 to 100 nm, which is sufficient to prevent organic compound deposits directly on the titanium surface (see paragraphs [0029] and [0030]).

Thus, the surface remains hydrophilic and biologically active as a result of the protection of the salt (see column 3, lines 51 to 54). Document (5) furthermore discloses that besides NaCl, which is the preferred salt, other salts such as magnesium chloride may be used to form the protective layer (paragraphs [0014] and [0015]).

4.3 The skilled person looking for an alternative to the surface treatment process for improving wettability of SLA surfaces of document (3) would therefore turn its attention to document (5) which belongs to the same technical field of treating surface of implantable titanium medical devices. The skilled person would thus

be aware from document (5) that SLA surfaces dipped in a salt solution and died under nitrogen retain their hydrophilicity after drying as a result of the salt ions forming a protecting layer on the surface (see paragraphs [0016] and [0030]).

Hence, the skilled person would be aware from document (5) that dipping the SLA surface of the titanium implant in a salt solution, which includes magnesium chloride, improves its wettability after drying.

4.4 Appellant I further argues that there was nothing advising the skilled person to specifically choose a solution of 1% $MgCl_2 \cdot 6H_2O$.

However, it has not been shown that choosing this specific salt in this particular concentration is associated with an unexpected effect. Thus, the arbitrary choice of a solution of a solution of 1% $MgCl_2 \cdot 6H_2O$, which is within the ambit of the general teaching of document (5) to improve wettability, lies within the routine activity of the skilled person to select a suitable salt and its amount in the solution to perform the protective treatment disclosed in document (5).

4.5 According to appellant I, document (3) does not disclose that sodium ions improve the wettability of the implant. However, this argument is irrelevant as it is document (5) that gives the solution of dipping the titanium implant in a salt solution, such as sodium or magnesium chloride, to form a protective layer against contaminants. Document (3) teaches that increase in wettability is due to the prevention of contamination that occurs when in contact with air.

4.6 The Board comes therefore to the conclusion that the subject-matter of claim 1 of the second auxiliary request is obvious in the light of document (3) combined with document (5).

Third auxiliary request - Inventive step.

5. Claim 1 comprises the additional feature that the applied ions are insufficient to perform any kind of protective coating function for the implant.

However, apart from the fact that none of the kind of protective coating functions which should be avoided are defined in the patent in suit, this additional feature does not add any new technical feature to the subject-matter of claim 1 which still includes the obvious method of applying a solution of 1% $MgCl_2 \cdot 6H_2O$ to the surface of the implant.

Accordingly, the third auxiliary request also lacks inventive step.

Fourth auxiliary request - admission

6. This request was filed during the oral proceeding before the Board. As explained above, the provisions of Article 13 RPBA 2007 apply (Article 25(3) RPBA).

Appellant I indicated that the filing of this request during the oral proceedings was a reaction of the conclusion of the Board during the oral proceedings announcing that auxiliary requests 2 and 3 did not meet the requirement of inventive step in view of the combination of documents (3) and (5), particularly that it was considered that document (5) disclosed a dielectric insulating layer.

However, appellant I was well aware of this objection of appellant II based on the combination of documents (3) and (5) from the statement of grounds of appeal. Moreover, the third auxiliary request (former fourth auxiliary request) was filed in view of document (5). Consequently, this argument does not convince the Board. Furthermore, claim 1 of the fourth auxiliary request comprises new features taken from the description. It cannot be expected either from the Board or from appellant II to deal with such amendment during oral proceedings (Article 13(3) RPBA 2007).

Auxiliary request 4 is therefore not admitted into the appeal proceedings.

Order

For these reasons it is decided that:

1. The decision under appeal is set aside.
2. The patent is revoked.

The Registrar: The Chairman:

C. Rodríguez Rodríguez M. Kollmannsberger

Decision electronically authenticated