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D E C I S I O N
of 31 May 2006

Case Number: T 1304/04 - 3.3.08

Application Number: 99113261.4

Publication Number: 0982591

IPC: G01N 33/68

Language of the proceedings: EN

Title of invention:
Imprints formed using functionally complementary monomers

Applicant:
MOSBACH, KLAUS

Opponent:
-

Headword:
Imprints/MOSBACH

Relevant legal provisions:
EPC Art. 83

Keyword:
"Sufficiency of the disclosure (no)"

Decisions cited:
G 0010/93

Catchword:
-

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Case Number: T 1304/04 - 3.3.08

D E C I S I O N
of the Technical Board of Appeal 3.3.08
of 31 May 2006

Appellant: MOSBACH, Klaus
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Decision under appeal: **Decision of the Examining Division of the European Patent Office posted 26 May 2004 refusing European application No. 99113261.4 pursuant to Article 97(1) EPC.**

Composition of the Board:

Chairman: M. R. Vega Laso
Members: T. J. H. Mennessier
C. Rennie-Smith

Summary of Facts and Submissions

I. The Applicant (Appellant) lodged an appeal against the decision of the Examining Division of 26 May 2004 refusing the European patent application No. 99 113 261.4 with publication number 0 982 591. The application, entitled "*Imprints formed using functionally complementary monomers*", was a divisional application of European patent application No. 95 910 042.1 published as the international PCT application WO 95/21673.

II. The application had been refused for reason of non-compliance with the requirements of Articles 76(1), 84 and 54 EPC, basis for the refusal being the claim request filed with letter of 25 September 2003.

III. On 5 October 2004, the Appellant filed a statement of grounds of appeal which was accompanied by a new main request (to replace the claim request of 25 September 2003 then on file) and a first auxiliary request, each consisting of only one claim.

Claim 1 of the main request read:

"1. A method of producing an entity complementary to a molecule, **characterised** in that it comprises the following steps:
(i) selecting a particular molecule, comprising active or binding sites, to which a complementary entity is to be produced;
(ii) contacting said molecule with crosslinkable moieties having active groups complementary to the

sites on the molecule, whereby the moieties associate with said sites,
(iii) effecting crosslinking of said associated moieties to produce an entity having active groups complementary to the molecule
(iv) separating said entity from the molecule resulting in a thin-layer imprint of the molecule.".

Claim 1 of the first auxiliary request read:

"1. A method of producing an entity complementary to a molecule, **characterised** in that it comprises the following steps:
(i) selecting a particular molecule, comprising a surface or active site, to which a complementary entity is to be produced;
(ii) contacting said molecule with monomers whereby monomers having active groups complementary to the surface or active site on the molecule interact with the surface or active site,
(iii) effecting crosslinking of said monomers having active groups complementary to the surface or active site on the molecule to produce an entity having active groups complementary to the molecule,
(iv) separating said entity from the molecule, resulting in a thin-layer imprint of the molecule.".

IV. The Examining Division did not rectify its decision and referred the appeal to the Board of Appeal (Article 109 EPC).

V. A communication under Article 11(1) of the Rules of Procedure of the Boards of Appeal (RPBA) presenting some preliminary and non-binding views of the Board was

sent to the Appellant. In the communication it was indicated that, should the main claim request be considered to meet the requirements of Articles 76, 84 and 123(2) EPC, it would remain to be assessed *inter alia* whether the claimed invention was sufficiently disclosed (Article 83 EPC).

VI. On 28 April 2006, in reply to the communication of the Board, the Appellant submitted a second, a third, a fourth, a fifth and a sixth auxiliary requests, together with observations. Its letter was accompanied by two new documents (to be referred to hereinafter as documents D8 and D9; see section IX infra). Furthermore, with the same letter the Appellant announced that it did not intend to attend the scheduled oral proceedings.

VII. Each of the five newly-filed auxiliary requests consisted of only one claim.

Claim 1 of the second auxiliary request read:

"1. Method of producing an entity complementary to a molecule, characterised in
- adding to the molecule, comprising active sites, monomers or other molecules interacting with functional groups of the molecule, so that the monomers or other molecules line up along the surface or active site of the molecule,
- crosslinking of the monomers or other molecules, which interact with the functional groups of the molecule,
- removal of the molecule from the entity.".

Claim 1 of the third auxiliary request read:

"1. Method of producing an entity complementary to a molecule, characterised in
- adding to the molecule, comprising active sites, monomers or other molecules interacting with functional groups of the molecule, so that the monomers or other molecules line up along the surface or active site of the molecule,
- crosslinking of the monomers or other molecules, which interact with the functional groups of the molecule,
- removal of the molecule from the entity, resulting in a thin-layer imprint complementary to the molecule.".

Claim 1 of the fourth auxiliary request read:

"1. Method of producing an entity complementary to a molecule, characterised in
- adding to the molecule, comprising active sites, monomers or other molecules interacting with functional groups of the molecule, so that the monomers or other molecules line up along the surface or active site of the molecule,
- condensation of the monomers or other molecules, which interact with the functional groups of the molecule,
- removal of the molecule from the entity.".

Claim 1 of the fifth auxiliary request read:

"1. Method of producing an entity complementary to a molecule, characterised in

- adding to the molecule, comprising active sites, monomers or other molecules interacting with functional groups of the molecule, so that the monomers or other molecules line up along the surface or active site of the molecule,
- condensation of the monomers or other molecules, which interact with the functional groups of the molecule,
- removal of the molecule from the entity, resulting in a thin-layer imprint complementary to the molecule.".

Claim 1 of the sixth auxiliary request read:

"1. Method of producing an entity complementary to a molecule, characterised in
- adding to the molecule, comprising active or binding sites, small moieties having active groups complementary to the sites on the molecule, whereby the small moieties associate with said sites, thereafter
- crosslinking the small moieties associated with these active sites under the formation of an entity having active groups complementary to the molecule, and then
- separating the entity from the molecule.".

VIII. On 22 May 2006, a communication under Article 12 RPBA was sent via fax to inform the Appellant that the Board had serious concerns about the requests on file in addition to those already expressed in its previous communication with respect to the main and the first auxiliary requests, and that these concerns could lead to the appeal being dismissed. It was pointed out that the Board had serious doubts that the skilled person was provided in the application with all the necessary teaching to perform the process of the invention as

described in paragraph 0013 on page 4, in particular with regard to the "lining up" step (see Article 83 EPC).

IX. The following documents are referred to in the present decision:

(D8) Yihua Yu et al., Angew. Chem. Int. Ed., Vol. 41, No. 23, 2002, Pages 4459 to 4463

(D9) Stu Borman, Chemical & Engineering News, Vol. 81, No. 2, 13 January 2003, Page 40, submitted to the Board as an Internet article with pages 1 to 3

X. The submissions made by the Appellant in writing, insofar as they are relevant to the decision, may be summarised as follows:

Claim 1 of each of the requests had a basis in claim 1 of the divisional application as filed in combination with paragraph [0013] on page 4 of the description. The claimed invention was not described only in that paragraph. Paragraph [0012] was also to be taken into consideration for the assessment of sufficiency of disclosure.

The technique on which the claimed invention relied had been named "direct molding" by the inventors and was also described in detail in documents D8 and D9.

XI. Oral proceedings took place on 31 May 2006. As announced in its letter of 28 April 2006, the Appellant, which had not taken position on the concerns as to

sufficiency of disclosure expressed by the Board in its communication of 22 May 2006, did not attend.

XII. The Appellant requested in writing that the decision under appeal be set aside and a patent be granted on the basis of the main request or of any of the six auxiliary requests.

Reasons for the Decision

1. Although insufficiency of disclosure was not a reason for the refusal in the decision under appeal, the Board, exercising its discretion (see Decision G 10/93, OJ EPO 1995, 172, Order) and as announced in its communications under Articles 11(1) and 12 RPBA, regards it as appropriate to assess whether the present application discloses the claimed invention in a manner sufficiently clear and complete for it to be carried out by a person skilled in the art, as required in Article 83 EPC.

2. Each of the main request and the six auxiliary requests on file is directed to a method of producing an entity complementary to a given molecule. In its letter of 28 April 2006 (see page 2), the appellant alleged that the claimed method for direct molding is described in paragraph [0013] on page 4 of the published application.

3. This paragraph reads: "*Further, as an alternative to the above direct imprinting, one can envisage the lining up of monomers or other molecules along a surface or active site of e.g. biomolecules as outlined in Fig. 5. The former are allowed to interact with functional groups of the molecule, 1, in step A*

followed by their condensation (B). Removal of 1 in step C leads to the formation of a thin-layer imprint of 1. Alternatively, the functional groups of the biomolecule are first derivatised followed their condensation.".

4. It is apparent from this passage of the application that the claimed method involves **the lining up of monomers or other molecules** along a surface or active site of the given molecule and their subsequent condensation to generate an imprint. Hence, the basic question to be answered in the present case is whether the skilled person is provided in the application with all the necessary teaching to perform the process of the invention as described in paragraph [0013] on page 4, in particular with regard to the "lining up" step. In this respect, the question arises whether the cross-linking monomers described in the application are suitable as the "monomers or other molecules" to be used **in the lining up step** of the method for which protection is sought.

5. The monomers described on pages 3 to 5 of the application have been shown to be suitable for the preparation of anti-idiotypic imprints (see Examples 1 to 4 on pages 4 and 5), which is the subject-matter of the patent granted on the parent application. No information is however provided in the application as to the monomers to be lined up in the direct molding method described in paragraph [0013]. Figure 5, to which it is referred in paragraph [0013], is a very simplified representation of the claimed method and does not provide any information whatsoever on the nature of the required "monomers and other molecules".

Thus, in the absence of any guidance in the application with respect to monomers and other molecules suitable for carrying out the claimed method, the skilled person would have to embark on a research program requiring an undue amount of experimentation and, possibly, inventive skills.

6. Although not absolutely necessary for reaching the conclusion of lack of sufficiency, the evidence filed by the Appellant with its letter dated 28 April 2006 confirms the Board's findings. Post-published documents D8 and D9 have been submitted by the Appellant to show the differences between the preparation of directly molded imprints as presently claimed and the preparation of anti-idiotypic imprints. In the fourth paragraph of page 2 of document D9, it is stated that a distinctive technical feature of the direct molding technique is the use of **a triazine-amine condensation**. This is confirmed by document D8, to which the inventor contributed as an author. Document D8 illustrates the preparation of an imprint of the active site of kallikrein using **2-(4-amidinophenylamino)-4,6-dichlorotriazine** and various **amines** as building blocks (see the second full paragraph on the right column of page 4461 together with Figure 1 on page 4460).

7. Neither **triazine** nor any of the various **amines** are disclosed in the present application either in paragraphs [0012] and [0013] of the description (see page 4) or elsewhere. The Board thus concludes that the application fails to indicate any "monomer or other molecule" which is appropriate for the lining up step. Therefore, the present application lacks an essential

technical information and does not disclose the claimed invention in a manner sufficiently clear and complete for it to be carried out by a person skilled in the art. Consequently, the application does not comply with Article 83 EPC and should be refused.

Order

For these reasons it is decided that:

The appeal is dismissed.

The Registrar: The Chairman:

P. Cremona M. R. Vega Laso