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**Datasheet for the decision
of 13 May 2025**

Case Number: T 1184/24 - 3.5.07

Application Number: 20190446.3

Publication Number: 3955248

IPC: G11B7/0045, G11B7/128,
G11B7/14, G11B7/243

Language of the proceedings: EN

Title of invention:

Data recording on ceramic material

Applicant:

Ceramic Data Solutions GmbH

Headword:

Ceramic data recording/CERAMIC DATA SOLUTIONS

Relevant legal provisions:

EPC Art. 83, 111(1)

Keyword:

Sufficiency of disclosure - (yes)

Decisions cited:

T 2574/16, T 0500/20, T 0155/21, T 1256/21

House of Lords (UKHL):

Kirin-Amgen Inc v Hoechst Marion Roussel Ltd [2004] UKHL 46



Beschwerdekammern

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Case Number: T 1184/24 - 3.5.07

D E C I S I O N
of Technical Board of Appeal 3.5.07
of 13 May 2025

Appellant:
(Applicant)

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Representative:

Vossius & Partner
Patentanwälte Rechtsanwälte mbB
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Decision under appeal:

**Decision of the Examining Division of the
European Patent Office posted on 29 April 2024
refusing European patent application
No. 20190446.3 pursuant to Article 97(2) EPC**

Composition of the Board:

Chair

P. San-Bento Furtado

Members:

R. de Man

E. Mille

Summary of Facts and Submissions

- I. The applicant appealed against the decision of the examining division refusing European patent application No. 20190446.3.
- II. The examining division decided that the subject-matter of claim 1 of each of the main request and auxiliary requests 1 to 35 had been insufficiently disclosed in the application (Article 83 EPC).
- III. With its statement of grounds of appeal, the appellant maintained the main request and auxiliary requests 1 to 35 considered in the contested decision.

It requested that the decision under appeal be set aside and that a patent be granted on the basis of the claims of the main request or, alternatively, of one of auxiliary requests 1 to 35.

As an auxiliary measure, the appellant requested that the board decide that the main request or, in the alternative, one of auxiliary requests 1 to 35 complied with the requirements of Article 83 EPC and that the case be remitted to the examining division for further prosecution.

As a further auxiliary measure, it requested oral proceedings.

- IV. In a communication accompanying the summons to oral proceedings, issued on 31 March 2025, the board indicated that it intended to set aside the decision under appeal and to remit the case to the examining division for further prosecution.

V. In a letter dated and received on 2 April 2025, the appellant withdrew its request for oral proceedings, agreed to a remittal of the case to the examining division, and requested that 25% of the appeal fee be reimbursed under Rule 103(4)(c) EPC.

VI. The board cancelled the oral proceedings.

VII. Claim 1 of the main request reads as follows:

"A method for recording data in a layer of a ceramic material (1), the method comprising the steps of:

providing a layer of a ceramic material (1); and
selectively illuminating a plurality of regions of the layer of the ceramic material (1) with a picosecond laser (2) or a femtosecond laser (2) beam using a digital micromirror device (3);

wherein the parameters of the laser beam and the time of illumination for each of the selected regions are configured so as to ablate each of the selected regions in order to record data in the layer of the ceramic material (1) by creating recesses or holes in the layer of the ceramic material (1), each recess or hole being open to atmosphere;

wherein providing the layer of a ceramic material (1) comprises providing a substrate (7) and coating the substrate (7) with the layer of the ceramic material (1) different from the material of the substrate (7), wherein the layer of the ceramic material (1) has a thickness no greater than 10 μm ; and

wherein the layer of the ceramic material (1) comprises at least one of: TiC, Al_4C_3 , VC, ZrC, HfC, ThC, B_4C ,

SiC; a metal nitride such as CrN, CrAlN, TiN, TiCN, TiAlN, ZrN, AlN, VN, Si₃N₄, ThN, HfN, BN; a metal oxide such as Al₂O₃, TiO₂, SiO₂, ZrO₂, ThO₂, MgO, Cr₂O₃, Zr₂O₃, V₂O₃; a metal boride such as TiB₂, ZrB₂, CrB₂, VB₂, SiB₆, ThB₂, HfB₂, WB₂, WB₄; or a metal silicide such as TiSi₂, ZrSi₂, MoSi₂, WSi₂, PtSi, Mg₂Si."

Reasons for the Decision

1. The application relates to recording data in a layer of ceramic material.

Main request

2. *Sufficiency of disclosure*

- 2.1 The examining division argued that the application did not sufficiently disclose the claimed invention for the skilled person to carry it out because the skilled person would need to select:
 - the specifications of the laser and the digital micromirror device;
 - appropriate optical components for the optical path of the laser beam and their specifications;
 - appropriate parameters for the laser beam and the time of illumination, in particular:
 - parameters relating to the power density of the beam emitted by the laser;
 - the number of pulses for ablating a single recess or hole in the ceramic layer;
 - the pulse repetition frequency;
 - the power density of each of the beams emitted by the digital micromirror device, said power density depending on the number of micromirrors

and on the specifications of the digital micromirror device; and

- the power density of each of the spots focused on the layer of ceramic material, wherein said power density should be sufficient for ablating a recess or hole in each of the ceramic materials listed in the claim.

The need for the skilled person to establish by trial and error a large number of parameters without having at their disposal any information that would lead them necessarily and directly towards success through the evaluation of initial failures represented an undue burden.

2.2 The board notes that selecting components and parameters by means of trial and error is part of the normal activity of the skilled person. The examining division did not argue that the required components were not commercially available at the filing date of the application. The fact that a large number of choices are available to the skilled person does not mean that the skilled person is presented with an undue burden, as there is no indication that only a narrow set of choices can lead to a functioning method falling within the wording of the claim. In this respect, the board notes that the claim does not include requirements on the speed of the recording process or on the density and reliability of the recorded information. Moreover, the claim does not require the same arrangement of components and parameters to work with each of the listed ceramic materials.

2.3 The examining division further argued that the application did not address the need to simultaneously fulfil two competing requirements, namely that the

fluence of the laser beam at the digital micromirror device should be low enough not to damage it, while the fluence of each of the laser beams focussed on the layer of ceramic material after being split at the digital micromirror device should be high enough to exceed the ablation threshold of the ceramic material.

The board notes that both requirements are self-evident. The examining division did not argue, let alone substantiate with evidence or sound reasons, that the two requirements were generally in conflict with each other and could only be fulfilled simultaneously if a number of very specific choices of components and parameters were made.

- 2.4 The examining division further argued that methods for recording data wherein the laser beam incident on the digital micromirror device was uncollimated and wherein the multiple laser beams emitted by the digital micromirror device were not converged on the layer of ceramic material by means of an objective were within the scope of claim 1 of the main request. It was highly unlikely that such methods would be able to ablate a plurality of selected regions on the layer of ceramic material.

First, the board notes that claim 1 is restricted to methods "wherein the parameters of the laser beam and the time of illumination for each of the selected regions are configured so as to ablate each of the selected regions ...". Any method falling within the scope of claim 1 therefore is able to ablate a plurality of selected regions on the layer of ceramic material (cf. decision T 1256/21, Reasons 3.2).

Second, it is true that any concrete implementation of a method according to claim 1 will include details that are not mentioned in the claim. But this does not automatically amount to a lack of sufficiency of disclosure if the skilled person is able to provide the required details (cf. decisions T 500/20, Reasons 3.6; T 155/21, Reasons 5.3.3). The board has no doubt that the skilled person would indeed be aware that collimating optics and focusing optics may be used to implement the invention.

The board further notes that even if the scope of a claim encompasses implementations that, at the filing date, were not yet within the reach of a skilled person having access to the content of the application, this alone does not mean that patent protection can be denied on the basis of Article 83 EPC. In fact, it is entirely normal for a patent to cover embodiments that include later-developed improvements, including improvements which potentially can themselves be patented (cf. decision T 2574/16, Reasons 3.6; see also *Kirin-Amgen Inc v Hoechst Marion Roussel Ltd* [2004] UKHL 46, paragraphs 110 and 117).

- 2.5 In view of the above, the examining division's objection of insufficiency of disclosure (Article 83 EPC) with respect to the main request is not justified.

3. *Remittal*

- 3.1 Although the appellant suggested that the presence of an inventive step was no longer challenged by the examining division, the board sees no indication for this in the file.

Indeed, in its communication dated 18 April 2024, apparently issued on the date of the second oral proceedings before the examining division, the examining division mentioned that it intended to discuss compliance of the requests on file with, in particular, Articles 52(1), 54(1) and (2), 56, 83 and 123(2) EPC. The fact that the written decision does not contain an objection of lack of inventive step is not surprising given that the application was refused for lack of sufficiency of disclosure.

Moreover, a conclusion that the claimed subject-matter is sufficiently disclosed may also have bearing on the assessment of inventive step.

- 3.2 Hence, the decision under appeal is to be set aside and the case is to be remitted to the examining division for further prosecution on the basis of the main request (Article 111(1) EPC).
- 3.3 Since the appellant withdrew its request for oral proceedings within one month of notification of the board's communication, and since no oral proceedings have taken place, the appeal fee is to be reimbursed at 25% (Rule 103(4)(c) EPC).

Order

For these reasons it is decided that:

1. The decision under appeal is set aside.
2. The case is remitted to the examining division for further prosecution.
3. The appeal fee is to be reimbursed at 25%.

The Registrar:

The Chair:



S. Lichtenvort

P. San-Bento Furtado

Decision electronically authenticated