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**Datasheet for the decision
of 20 August 2020**

Case Number: T 3218/19 - 3.3.09

Application Number: 10180580.2

Publication Number: 2306495

IPC: H01L21/00, C09K11/06,
H05B33/14, H01L51/50, H01L51/30

Language of the proceedings: EN

Title of invention:

Very high efficiency organic light emitting devices based on electrophosphorescence

Patent Proprietor:

The Trustees of Princeton University
University Of Southern California

Opponent:

Merck Patent GmbH

Headword:

Light emitting devices/PRINCETON

Relevant legal provisions:

EPC Art. 100(c)
RPBA 2020 Art. 11, 12(2)

Keyword:

Main request: added subject-matter - no

Remittal to opposition division for further prosecution - yes

Decisions cited:

T 1966/16, T 0731/17

Catchword:



Beschwerdekammern

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Case Number: T 3218/19 - 3.3.09

D E C I S I O N
of Technical Board of Appeal 3.3.09
of 20 August 2020

Appellant: The Trustees of Princeton University
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Appellant: University Of Southern California
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Respondent: Merck Patent GmbH
(Opponent) Frankfurter Strasse 250
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Decision under appeal: **Decision of the Opposition Division of the
European Patent Office posted on 10 October 2019
revoking European patent No. 2306495 pursuant to
Articles 101(2) and 101(3) (b) EPC.**

Composition of the Board:

Chairman A. Haderlein
Members: A. Veronese
F. Blumer

Summary of Facts and Submissions

- I. The appeal was filed by the patent proprietors against the decision of the opposition division to revoke European patent No. 2 306 495 B1.
- II. The patent derives from European patent application No. 10 180 580, filed as a divisional application of European patent application No. 06 016 911, which was itself filed as a divisional application of European patent application No. 00 932 308.
- III. With its notice of opposition, the opponent had requested revocation of the patent in its entirety, citing as its grounds Article 100(a) EPC (lack of novelty and lack of inventive step) and Articles 100(b) and 100(c) EPC.
- IV. The decision of the opposition division was based on the granted patent (main request) and auxiliary requests 1 to 3, filed by letter dated 14 August 2018.

Claim 1 as granted reads:

"An organic light emitting device comprising an anode, a cathode, and an emissive layer, wherein the emissive layer is located between the anode and the cathode, and the emissive layer comprises a phosphorescent organometallic iridium compound, wherein the phosphorescent organometallic iridium compound has an aromatic ligand."

- V. In its decision the opposition division found that the feature *"the phosphorescent organometallic iridium compound has an aromatic ligand"* in granted claim 1 had

no basis in the earlier European patent application No. 00 932 308 as filed. Thus, this claim contained subject-matter extending beyond that disclosed in the earlier application as filed. The opposition division considered, in particular, that neither the passage on page 14, lines 6 to 8, nor the disclosure of the specific compounds described in the earlier application provided a basis for the aforementioned feature. Since claim 1 of each of auxiliary requests 1 to 3 contained the aforementioned feature, this claim was also considered to contain added subject-matter.

- VI. This decision was appealed by the proprietors (appellants), who requested that the decision be set aside and that the patent be maintained as granted (main request) or, alternatively, on the basis of one of the auxiliary requests 1 to 3 which form the basis of the decision under appeal.
- VII. By a communication of the board sent by registered letter, a copy of the statement setting out the grounds of appeal was sent to the opponent (respondent). The respondent was informed that any reply must be filed within four months of notification of that communication.
- VIII. The respondent did not reply to the communication.
- IX. The appellants' arguments, where relevant for the decision, may be summarised as follows:
- the term "aromatic ligand" was disclosed in the passage on page 14, lines 4 to 8, of the description of the earlier patent application No. 00 932 308 as filed, and in corresponding passages

of patent application No. 06 016 911 and of the application for the patent in suit as filed,

- it was clear from those applications that this passage related to organometallic iridium compounds, which were the preferred phosphorescent compounds for carrying out the invention. Therefore, the feature: "the phosphorescent organometallic iridium compound has an aromatic ligand", was directly and unambiguously disclosed,
- for these reasons, granted claim 1 did not contain added subject-matter extending beyond the content of the earlier applications and the application for the patent in suit as filed.

Reasons for the Decision

1. In this decision, European patent application No. 00 932 308, from which European patent application No. 06 016 911 and the application for the patent in suit derive, is referred to as the "grandparent application", whereas in the impugned decision it is referred to as the "parent application".
2. *Added subject-matter*
 - 2.1 The grandparent application discloses light emitting devices comprising an emissive layer comprising an emissive phosphorescent organometallic complex. It is readily apparent that the most preferred complexes disclosed in that application are organometallic iridium complexes. These are, in fact, the only complexes which were actually used to prepare light emitting devices according to the invention and to

conduct tests aimed at determining their emission properties: see examples 1 to 4 and the figures, which describe the preparation of devices comprising organometallic iridium complexes according to the invention, and their properties in terms of luminance and power efficiency as a function of the applied voltage.

- 2.2 The opposition division decided that the grandparent application did not disclose an organometallic iridium complex in which "*the phosphorescent organometallic iridium compound has an aromatic ligand*".

The board does not share this view.

- 2.3 It is noted, first, that all the specific ligands disclosed in the grandparent application are, without exception, aromatic ligands. Furthermore, the passage starting from page 13, line 25, and ending on page 14, line 10, of the description, which provides further technical details for carrying out the invention, teaches explicitly that "transition metal complexes with aromatic ligands" are preferred, because they induce strong phosphorescence at room temperature: see in particular page 14, lines 7-8. This passage, which provides the broadest definition of the metal complexes used to prepare the phosphorescent compounds of the invention, can be read in combination with the parts of the application mentioned above, which point towards the use of organometallic iridium complexes. For this reason, organometallic iridium compounds having an aromatic ligand are directly and unambiguously disclosed in the grandparent application as filed.

- 2.4 Accordingly, the board concludes that the feature specifying that the "phosphorescent organometallic

iridium compound has an aromatic ligand" does not extend beyond the content of the grandparent application as filed. Since the aforementioned parts of the description of the grandparent application are also present in the description of the earlier divisional application No. 06 016 911 and of the application for the patent in suit as filed, this feature does not add any subject-matter extending beyond that disclosed in those applications as filed (Article 100(c) EPC).

2.5 In view of this finding, there is no need to consider the auxiliary requests.

3. *Remittal of the case*

3.1 The decision under appeal is limited to the issues of added subject-matter. The appellants requested that the case be remitted to the opposition division for examination of the other issues (sufficiency of disclosure, novelty and inventive step).

3.2 As set out in Article 12(2) RPBA 2020, the primary object of the appeal proceedings is to review the decision under appeal in a judicial manner. This principle would not be respected if the board were to conduct a complete examination of issues which were not dealt with by the opposition division. Thus, special reasons present themselves for remitting the case (Article 11 RPBA 2020 and decisions T 1966/16 and T 731/17).

Order

For these reasons it is decided that:

1. The decision under appeal is set aside.
2. The case is remitted to the opposition division for further prosecution on the basis of the main request.

The Registrar:

The Chairman:



A. Nielsen-Hannerup

A. Haderlein

Decision electronically authenticated