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D E C I S I O N
of 30 November 2005

Case Number: T 0136/01 - 3.4.3

Application Number: 91301416.3

Publication Number: 0443861

IPC: H05B 33/14

Language of the proceedings: EN

Title of invention:
Organic electroluminescence device

Patentee:
SUMITOMO CHEMICAL COMPANY LIMITED

Opponents:
Cambridge Display Technology Limited
Hoechst AG

Headword:

-

Relevant legal provisions:
EPC Art. 107, 87(1), 54, 56

Keyword:
"Admissibility of the appeal (yes)"
"Main and first auxiliary request: novelty (no)"
"Second auxiliary request: novelty (yes), inventive step (yes)"

Decisions cited:
G 0004/88, G 0003/97, G 0002/98, G 0002/04, T 0799/97,
T 0602/99, T 0854/99, T 1137/97, T 0870/92

Catchword:

-



Case Number: T 0136/01 - 3.4.3

D E C I S I O N
of the Technical Board of Appeal 3.4.3
of 30 November 2005

Appellant: Cambridge Display Technology Limited
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Decision under appeal: Interlocutory decision of the Opposition
Division of the European Patent Office posted
4 December 2000 concerning maintenance of
European patent No. 0443861 in amended form.

Composition of the Board:

Chairman: R. G. O'Connell
Members: V. L. P. Frank
J. P. B. Seitz

Summary of Facts and Submissions

I. This is an appeal by opponent II against the maintenance of European patent 443 861 in amended form pursuant to Article 102(3) EPC, opponent I having withdrawn his opposition during the opposition proceedings

Grounds of opposition were *inter alia* lack of novelty and of inventive step (Article 100(a), 54 and 56 EPC). However, in the appeal proceedings only the objection of lack of novelty with respect to claim 1 was substantiated.

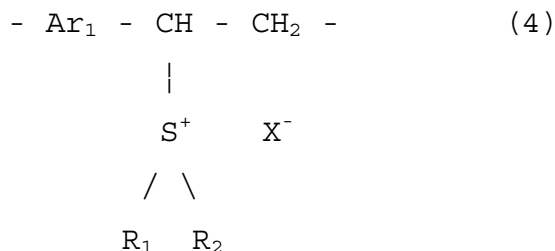
II. Claim 1 of the granted patent, forming the basis of the proprietor's main request on appeal, reads as follows:

"1. An organic electroluminescence device having a light emitting layer or a light emitting layer and a charge transport layer disposed between a pair of electrodes, at least one of which is transparent or semitransparent, the light emitting layer comprising a conjugated polymer having a repeating unit of general formula (1):

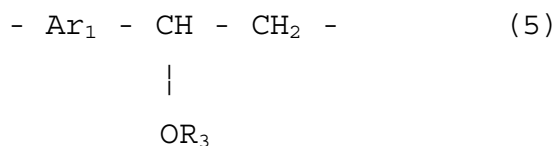


where Ar_1 is an aromatic hydrocarbon group of 6 to 14 carbon atoms which is unsubstituted or substituted by one or two hydrocarbon or alkoxy groups of 1 to 22 carbon atoms, said polymer being obtainable by any one of the following methods:

(A) heat treating at a temperature from 80 to less than 200°C a polymer intermediate having a repeating unit of general formula (4):



where Ar₁ is as defined above and in which R₁ and R₂, which are same or different, are alkyl of 1 to 8 carbon atoms and X⁻ is a counteranion, or the general formula (5):



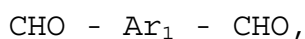
where Ar₁ is as defined above and R₃ is a hydrocarbon group of 1 to 12 carbon atoms;

(B) condensation polymerisation in solution, and in the presence of an alkali, of a dihalogenide compound of the general formula (6):



where Ar₁ is as defined above and X₂ is halogen;

(C) subjecting a dialdehyde compound of general formula:



where Ar₁ is as defined above, and a phosphonium salt of a dihalogenide compound of general formula (6) as defined above to condensation polymerization by a Wittig reaction."

In claim 1 of the first auxiliary request the first sentence of method (A) was amended to read (board's emphasis):

"(A) heat treating at a temperature from 80 to less than 200°C **for 10 minutes to 8 hours** a polymer intermediate having a repeating unit of general formula (4):"

Claim 1 of the second auxiliary request was restricted to methods (B) and (C) defined above.

Claim 1 of the third auxiliary request was restricted to method (B).

All requests comprise further two independent claims directed to an organic electroluminescence device comprising respectively a charge transport layer (claim 5) and a conducting polymer buffer layer (claim 6) which are not reproduced here, as they were not discussed in the appeal proceedings.

III. The following prior art documents *inter alia* were cited in the opposition procedure:

C1 = EP 423 283 A

S3 = J. Phys. D: Appl. Phys., vol. 20, 1987, pp. 1389 -
1410

IV. In the decision under appeal the opposition division found that the patent was entitled to the filing date of the priority document P1 (= JP 43930/90 A) although document P1 disclosed that in method (A) the heat treatment should be carried out at "room temperature to 200°C" while the patent disclosed performing it "at 80°C to less than 200°C". The opposition division argued that the comparison with document C1 showed that it was an essential feature of method (A) to work at temperatures of less than 200°C. The inventions disclosed in P1 and the opposed patent were therefore the same (cf point 22 of the reasons). It followed that document C1 was part of the prior art under Article 54(3) EPC, ie only relevant for assessing novelty.

As regards method (A) of claim 1, the opposition division found that the polymers obtainable by this method were different from the ones obtainable by the method disclosed in document C1 (ibid, point 23). The temperature range disclosed in C1 was from 200°C to 350°C and document S3, which was explicitly cited in C1, disclosed that full conversion was not obtained at temperatures below 300°C. Method (A) resulted therefore in polymers with relatively short conjugated chains as compared to those obtained at higher temperatures, by specifying a temperature range from 80°C to less than 200°C.

V. The respondent proprietor contested the admissibility of the appeal filed in the name of Hoechst AG as former opponent II, since the assets in the interests of which the opposition was originally filed were transferred on the own admission of this opponent to Hoechst Research and Technologies Deutschland GmbH & Co KG, the transferee having later changed their name to Aventis Research and Technologies GmbH & Co KG and later transferred the assets to Axiva GmbH. This was indicated in the decision under appeal (cf point 2 of the summary of facts), which stated that during the further proceedings, the rights in the opposition of Hoechst AG were twice transferred, first to Aventis Research and Technologies GmbH and then to Axiva GmbH. Accordingly, Hoechst AG was no longer a party entitled to appeal against the decision of the opposition division and the appeal therefore inadmissible.

He argued that the reasoning of the Enlarged Board of Appeal in G 2/04 was limited to the situation in which the original opposition was filed in the name of a holding company, where the subsidiary company to whose business the opposition related existed as a separate legal person at the time of filing the opposition. The present case related, however, to a different factual situation, because Axiva GmbH was not a subsidiary of Hoechst AG when the opposition was filed by Hoechst AG. It was, moreover, now too late to correct the identity of the appellant in the present case from Hoechst AG to Axiva GmbH, in view of the reasoning of the EBA in G 2/04.

VI. Appellant opponent II argued on the admissibility of the appeal essentially as follows:

- The documents provided to the EPO for recording the transfers and later submitted again on request from the board, showed that by the contract dated 31 December 1997 the original opponent Hoechst AG had transferred their assets in the field of Research & Technology to Hoechst Research & Technology Deutschland GmbH & Co. KG so that said corporate entity had to be considered their successor in law in said field, and was as such therefore entitled to proceed further with the opposition. The transferee had changed their name from Hoechst Research & Technologies Deutschland GmbH & Co, KG to Aventis Research & Technologies GmbH & Co. KG.

- This request for transfer remained unanswered by the EPO until, in a second letter dated 15 September 2000, Hoechst AG referred expressly to the unanswered request and further requested that in view of the oral proceedings to be held before the opposition division on 9 November 2000 the opposition be transferred to Axiva GmbH. In support of this second request the opponent Hoechst AG explained that by a first contract already referred to in their former unanswered request they had transferred their rights in the opposition to Aventis Research and Technologies GmbH & Co. KG, and that meanwhile said corporate entity had further disposed of these rights by contract dated 31 December 1999 in favor of Axiva GmbH.

- The formalities officer of the transfer registration service of the EPO rejected both requests by letter dated 21 November 2000, on the ground that, according to decision G 4/88, the transfer of opposition rights was only possible either to general successors in law, or when they constitute an inseparable part of the assets disposed of. It was therefore for the cedant to prove that their opposition right necessarily belonged to that part of their assets which were the subject of the transfer. However, the documents filed together with both requests could not adequately establish that this second requirement was ever fulfilled.

- Consequently, Hoechst AG remained a party to the proceedings. They were adversely affected by the contested decision, as their request before the opposition division for revocation of the patent had not been granted, and were therefore entitled to appeal.

VII. Appellant opponent II argued on the substantive issues of the appeal essentially as follows:

- Document C1, published on 1 November 1990, belonged to the prior art under Article 54(2) EPC, as the opposed patent's priority date of 23 February 1990 (P1 = JP 43930/90 A) could not be allowed for claim 1 of the main and first auxiliary requests. The method disclosed in P1 for obtaining a polymer corresponding to method (A) of the claim comprised a heat treatment temperature range from room temperature to 200°C. However, method (A) of claim 1 specified a temperature range from 80 to less than

200°C, ie both end points of the temperature range had been amended. Method (A) was therefore not directly and unambiguously derivable from the priority document P1 as required by decision G 2/98.

- Claim 1 of all requests was cast as a "product by process" claim, ie the light emitting layer comprised a polymer that was obtainable by any one of the methods specified in the claim. It was, however, the product itself and not the method which had to be new and inventive. It was therefore contested that the electroluminescent polymers obtained by the methods specified in claim 1 were distinguishable from the polymers disclosed in document C1. Reference was made, in particular, to the experimental evidence submitted by appellant opponent II and by former opponent I.

VIII. The respondent proprietor argued essentially as follows:

- The claim to the priority date of P1 should be allowed, as the change in the lower end point of the temperature range from room temperature to 80°C did not alter the invention. The gist of the present invention was to maintain the temperature below 200°C so that not fully conjugated polymers were obtained.
- In the polymers obtained according to method (A) of claim 1 not all substituent groups were driven off by the heat treatment, contrary to what happened in the method disclosed in document C1 which was carried out at a temperature between 200 and 350°C. Accordingly, the excited states responsible for

electroluminescence were confined between the points where the substituent groups remained, interrupting the conjugation.

- Polymers produced by method (B) would comprise additionally to the main "head to tail" reaction some secondary "head to head" and "tail to tail" reactions which introduced, respectively, triple and single bonds in the polymer backbone. Single bonds however had a similar effect on electroluminescence as the "defects" mentioned in relation to method (A). Additionally, in contrast to the polymers obtainable by method (A), polymers obtainable by method (B) included a measurable amount of halogen atoms.

- The polymers produced according to method (C) comprised -CH=CH- groups in the *trans* and *cis* configurations, while the polymers obtainable by method (A) would all be in the *trans* configuration. The presence of the *cis* configuration altered however the linearity of the polymer's backbone and hence confined the electron density states.

- It was therefore submitted that all three methods referred to in claim 1 of the main request produced polymers that were different from the polymers which were obtainable by the method disclosed in document C1. Reference was made to the experimental measurements submitted during appeal and opposition proceedings.

IX. At the oral proceedings before the board appellant opponent II requested that the decision under appeal be set aside and that the patent be revoked.

The respondent proprietor requested that the appeal be rejected as inadmissible.

He further requested that the appeal, if found admissible, be dismissed or that the patent be maintained on the basis of one of the auxiliary requests:

- First auxiliary request, filed on 30 November 2005 during the oral proceedings
- Second auxiliary request, filed on 21 December 2001
- Third auxiliary request, filed on 27 October 2005.

Reasons for the Decision

1. *Admissibility of the appeal*

1.1 The respondent proprietor contests the admissibility of the appeal of opponent II, on the grounds that the assets in the interests of which the opposition was originally filed were transferred on his own admission by this opponent to Hoechst Research and Technologies Deutschland GmbH & Co KG, the transferee having later changed their name to Aventis Research and Technologies GmbH & Co KG and later transferred the assets to Axiva GmbH.

1.2 According to Article 107 EPC, defining the persons entitled to appeal and to be parties to the appeal proceedings, "any party to proceedings adversely

affected by a decision may appeal. Any other parties to the proceedings shall be parties to the appeal proceedings as of right."

1.3 In considering the present issue, it has therefore to be ascertained whether Hoechst AG:

- (a) were a party to the opposition proceedings,
- (b) were adversely affected by the impugned decision,
- (c) were still enjoying the status of a party at the time the appeal was filed,
- (d) have not, subsequently, lost the status of a party to appeal proceedings for any legal or factual reasons.

1.4 After due consideration of the documents on file these questions can be answered as follows:

1.4.1 Hoechst AG originally filed the opposition and acquired thereby the status of an opponent entitled to be a party in the opposition proceedings, as well as in the appeal proceedings.

1.4.2 The statement under point 2 of the summary of facts and submissions of the decision under appeal, according to which "during the further proceedings (i.e. after the filing of the opposition), the rights in the opposition of Hoechst AG were twice transferred, first to Aventis Research and Technologies GmbH and then to Axiva GmbH" if ever correct and accepted as such would have definitely deprived Hoechst AG of this primal status of

opponent, party to the opposition proceedings, and therefore of this right to appeal.

1.4.3 However if not totally erroneous this statement is incomplete and may have lead to confusion:

- not totally erroneous since, on the one hand, on their own admission Hoechst AG had by 31 December 1997 assigned their assets in the field denominated -Corporate Research & Technology - to Hoechst Research & Technology GmbH & Co KG,
- and since, on the other hand, they sought the corresponding transfer of the opposition against EP 443 861 (see affidavit of Dr Oleg de Lousanoff, public notary, represented by M. Klöcker, attorney at law),
- nevertheless incomplete and misleading since, on the one hand, by decision dated 21 November 2000 the formalities officer of the transfer registration service of the EPO had refused the requested transfer, considering it had not been sufficiently substantiated because it had not yet been proven that the opposition rights in suit constituted an inseparable part of the opponents business assets in the interest of which the opposition was filed,
- and since, on the other hand, the decision under appeal was notified to Dr Klaus Dörr, authorized representative, who enjoyed a power of attorney from Hoechst AG only, and not from Axiva GmbH as it should have been if the aforesaid statement 2 in the decision under appeal were to be considered as being

correct, and if the decision had been consistent with itself.

1.4.4 *Ad absurdum* this would imply that the notification of the decision under appeal to Hoechst AG was addressed to a legal person who was no longer a party to the opposition proceedings, and hence that said notification was null and void *ab initio*, ie theoretically that the decision of the opposition division was still open to an appeal by the last transferee and "actual" opponent Axiva GmbH.

1.4.5 Hence, in the board's view, the statement under point 2 of the decision under appeal on its proper and reasonable interpretation means that:

- during the opposition proceedings the opponent assigned his rights in the opposition,
- the transfer of status had not yet been accepted by the EPO at the date of the oral proceedings before the opposition division.
- Hoechst AG remained opponent and was therefore the due addressee of the notification of the written decision on 4 December 2000 (all the more since the decision not to accept the requested transfer had already been taken on 21 November 2000).

1.4.6 This interpretation would then at least be consistent and in line with the then common practice applied by the EPO, as resulting from decision G 4/88 and the jurisprudence implementing it later on.

Decision G 4/88, whereas acknowledging transmission of the opposition to universal successors in law, expressly did not answer the question whether an opposition could be transferred or assigned independently of the existence of an interest in instituting the opposition, and decided that a pending opposition may be transferred or assigned to a third party (ie a legal person having up to the assignment enjoyed the status of *penitus extranei*) as part of the opponent's assets of business together with those assets in the interest of which the opposition was filed (applying to a certain extent the principle of law according to which *accessio cedit principali*).

- 1.4.7 It must be borne in mind that universal succession in law implies necessarily that the original owner of the right (be it real or subjective) disappears as a legal person by virtue of the event giving birth to the transfer of right (e.g. death, merger of two corporate entities).

This is not the case where Hoechst AG has retained their former legal status, and remains a legal person.

- 1.4.8 In decision G 3/97 the Enlarged Board of Appeal at point 2.2 of the reasons stated that "the opponent does not have a right of disposition over his status as a party".
- 1.4.9 This has been reaffirmed in G 2/04 whose headnote I(a) stated: "The status as an opponent cannot be freely transferred". The fact that the present case does not fall under the specific form of transfer not recognized by the EBA in headnote I(b) does not of course justify

a contrario, as maintained by the respondent proprietor, that the transfer in the present case should be recognized as depriving Hoechst of opponent status.

- 1.4.10 The decision as to whether the alleged assignee has become opponent, and thus acquired the status of a party to the opposition proceedings falls within the exclusive competence of the department before which said proceedings are pending, ie either the opposition division or the board of appeal (cf T 799/97, T 602/99, T 854/99)

As long as the requested transfer has not been sufficiently substantiated, and has not been accepted by the competent department, the original opponent retains the status of party to the opposition proceedings (cf T 1137/97, T 870/92)

- 1.4.11 In the present case no transfer was ever authorized, therefore Hoechst AG who still enjoy the status of a legal person were a party entitled to appeal at the date of the filing of the appeal.
- 1.4.12 As regards point (b) of the requirements (cf 1.3 above), it is not disputed that the opponent Hoechst AG, was adversely affected by the decision they appealed against, namely to maintain the patent in amended form.
- 1.4.13 As regards points (c) and (d) of the requirements, as stated at 1.4.11 above, Hoechst AG necessarily enjoyed the status of an adversely affected party on the date of filing the appeal and has not lost this status since then.

1.5 As to the objection raised by the respondent proprietor, it must be borne in mind that they mainly rely on a line of argument according to which:

- On their own admission Hoechst AG has firstly merged their industrial assets with Rhône-Poulenc SA to form a new corporate entity Aventis SA, and secondly transferred their opposition rights to a third party, whichever it may be.
- G 4/88 sets out that opponent status may only be transferred to a third party with the business assets in the interest of which the opposition was filed, and sets out further that "the opposition constitutes an inseparable part of those assets".
- From this reasoning and these facts it follows, in the case under consideration, that "opponent status automatically transferred to Aventis if the business assets in the interest of which the opposition was filed were transferred to Aventis".

1.6 For the board this reasoning, although *prima facie* reasonable, is not persuasive for the following reasons:

- Out of an exception set out in G 4/88 and further confirmed by the established jurisprudence, the respondent infers a mandatory rule which is not acceptable.
- Legal certainty requires that the patent proprietor and the public know the identity of the opponent, which identity would change automatically even against the will of the genuine opponent in case of

part mergers or assignments likely to occur every day in the current business world.

- To follow the patentee's interpretation of the jurisprudence would in the present case amount to the introduction of a new requirement to those already set in Article 99 EPC, namely that the opponent at any stage of opposition proceedings must justify his *locus standi*.

1.7 The board judges therefore that the appeal of appellant opponent II is admissible.

2. Incidentally, the board is surprised that the complete exchange of correspondence between opponent II and the corresponding department of the EPO on the requests for transfer of the opposition rights is missing from the file. Copies of these documents were provided in the course of the appeal procedure by appellant opponent II after objections had been raised by the respondent proprietor.

The board emphasizes that full and accurate maintenance of the file is a basic duty of all departments of the EPO to ensure transparency of the administrative and legal proceedings.

3. *Priority*

3.1 After the decision of the opposition division was issued the Enlarged Board of Appeal clarified the entitlement to the right to priority in Opinion G 2/98 as follows (OJ EPO 2001, 413; Headnote):

"The requirement for claiming priority of the 'same invention', referred to in Article 87(1) EPC, means that priority of a previous application in respect of a claim in a European patent application in accordance with Article 88 EPC is to be acknowledged only if the skilled person can derive the subject-matter of the claim directly and unambiguously, using common general knowledge, from the previous application as a whole."

3.2 It has to be decided therefore if the temperature range "from 80°C to less than 200°C" specified in method (A) of claim 1 of the main and first auxiliary requests can be derived directly and unambiguously from document P1, which is the priority document disclosing *inter alia* the production of electroluminescent polymers by the sulphonium salt decomposition route of method (A).

3.3 Document P1 discloses that "the heat treatment is preferably carried out at room temperature to 200°C when the intermediate is used as a light emitting material" (cf page 8, lines 10 to 12 of the English translation). Moreover, a heat treatment at 80°C is not disclosed in document P1.

The evidence submitted by the former opponent I with the letter of 7 September 2000 shows that polymers obtained by a heat treatment at room temperature and at 80°C possess different UV absorption spectra and, therefore, different properties (cf Figure 3 attached to the letter). The change in the lower end point of the temperature range has therefore direct consequences on the polymers obtainable by said heat treatment and, consequently, on the electroluminescence devices produced therewith. The electroluminescence device

according to claim 1 is consequently different from the one disclosed in the priority document.

As the lower end point of the temperature range specified in the opposed patent is not directly and unambiguously derivable from the disclosure of document P1, both documents do not relate to the "same invention".

3.4 The board judges, for this reason, that claim 1 of the main and first auxiliary requests is not entitled to the priority date of 23 February 1990 but only to the filing date of the European patent application, i.e. the 22 February 1991, insofar as method (A) is concerned. Under these circumstances document C1, published on 1 November 1990, is prior art within the meaning of Article 54(2) EPC for the polymers obtainable by method (A).

4. *Main request - Novelty*

4.1 Claim 1 is directed to an organic electroluminescence device having a light emitting layer comprising a conjugated polymer which is obtainable *inter alia* by method (A), the so called sulphonium salt decomposition process, in which a polymer intermediate having a repeating unit according to formula (4) (cf point II above) is subjected to a heat treatment at a temperature from 80°C to less than 200°C. The aromatic hydrocarbon group Ar₁ of formula (4) comprises p-phenylene (cf claim 2 of the patent) and accordingly the polymer intermediate may be derived from poly(p-phenylenevinylene) or in short PPV.

- 4.2 It is undisputed that document C1 discloses an organic electroluminescence device in which the light emitting layer comprises a polymer obtainable by the sulphonium salt decomposition process in which the conjugated polymer is also a derivative of PPV (cf page 1, first paragraph; page 7, formula (I); page 10).
- 4.3 The sulphonium salt decomposition method disclosed in document C1 differs therefore from method (A) of claim 1 only in that the heat treatment is carried out at 200 to 350°C while claim 1 specifies a temperature from 80°C to less than 200°C (cf C1, page 10, end of the fourth paragraph).
- 4.4 The board has to determine whether polymers obtained by the sulphonium salt decomposition process with heat treatments at temperatures above and below 200°C can be distinguished from each other, since in a "product by process" claim the requirement of novelty has to be met by the product itself and not merely by the process by which it is obtained.
- 4.5 The former opponent I submitted experimental evidence with the letter dated 30 November 1999 showing that ultraviolet/visible absorption (UV/Vis) spectra and photoluminescence (PL) spectra of precursor films converted at 190°C and 210°C for 2 hours were indistinguishable from each other (cf Annex 1: Experimental section, Figures 1 and 2).
- 4.6 The respondent proprietor, on the other hand, submitted experimental evidence with the letter dated 15 February 2000 in which a small difference between the UV/Vis spectra of polymers converted at 190°C and 210°C can be

recognized (cf Figure 2). A larger difference is seen in the corresponding PL spectra (cf Figure 4).

4.7 By further evidence annexed to the letter dated 7 September 2000, the former opponent I submitted UV/Vis absorption spectra and PL spectra made on the same polymer and on two different samples of the same polymer batch (cf point 3 and Figures 1a and 1b). This evidence addressed the repeatability of the measurements conducted by the parties and showed that "the variation in peak wavelength, peak intensity and shape between spectra for different samples of the same polymer is of an equivalent extent to the variation between spectra for a polymer produced by heat treatment at 190°C for 2 hours and at 210°C for 2 hours" (cf point 3.4).

4.8 As the result of a polymerization process is not a well defined product, as in the case of synthesizing a single molecular compound, but a substance with a wide statistical distribution of molecular weights and chain lengths, the board agrees with the appellant opponent II that polymers produced above and below 200°C at temperatures close to this value can not be differentiated. The requirement in the opposed patent that the heat treatment is conducted at a temperature less than 200°C provides a distinction in the fabrication process with respect to document C1, but, in the view of the board, imparts no difference to the polymers obtained by said treatment.

For these reasons, the board judges that the organic electroluminescence device according to claim 1 is not new having regard to document C1.

5. *First auxiliary request - Novelty*

5.1 Claim 1 according to this request further specifies that in method (A) the heat treatment is done for 10 minutes to 8 hours.

5.2 As the respondent proprietor correctly pointed out, document C1 merely discloses heat treating a precursor polymer film at 300°C for 12 hours (cf Example 1, page 15 middle of second paragraph).

5.3 However, no evidence was submitted showing that the duration of the heat treatment had any noticeable effect on the obtained polymer. In particular, the evidence presented by the respondent proprietor when comparing polymers obtained at 190°C and 210°C shows that a heat treatment of two hours is sufficient for a full polymerization. This suggests that the product resulting from the process, ie the electroluminescence device, does not have any differentiating features when the heat treatment is reduced from 12 hours to less than 8 hours.

5.4 The board judges therefore that specifying the duration of the heat treatment distinguishes the fabrication process from the one disclosed in document D1, but is unable to impart novelty to the obtained polymers and consequently to the claimed device.

6. *Second auxiliary request*

6.1 Amendments

Claim 1 of this request differs from claim 1 of the preceding requests in that method (A) has been removed from the claim. This is a restriction of the methods by which the electroluminescent polymer may be obtained, and therefore also a restriction of the polymers obtainable by the claim, since, as will be shown below, the polymers resulting from the three methods have different features. The requirements of Articles 123(2) and (3) EPC are therefore fulfilled.

6.2 Novelty

6.2.1 As mentioned under point 3.4 above, document C1 belongs to the prior art under Article 54(3) EPC and is therefore relevant only for novelty, as this claim is entitled to the priority date of P1.

6.2.2 Appellant opponent II and the respondent proprietor submitted nuclear magnetic resonance (NMR) spectra of polymers obtained by method (B) with the letters dated 29 July 2004 (evidence 1) and 24 March 2005 (evidence 2), respectively.

According to appellant opponent II, evidence 1 showed that the peak at 2.9 ppm, corresponding to the single bond CH₂ - CH₂ "defect", is clearly recognizable when in method (B) 0-xylol was used as solvent, smaller for dioxane and unrecognizable for tetrahydrofuran (THF). He argued therefore, that the solvent had a strong influence in the polymerization process and that

polymers nearly without single bonds, ie equivalent to the polymers obtainable by the method disclosed in document C1, could be obtained by following method (B) of the patent.

The respondent's proprietor evidence 2, on the other hand, shows that the CH₂ - CH₂ "defect" peak is present with nearly the same intensity independently of the solvent used (cf the spectra of the three samples made with the same solvents used by the opponent). The respondent proprietor argued that in evidence 1 even the spectrum with THF showed a small peak at 2.9 ppm. Since this spectra had a very low signal to noise ratio, it was no conclusive evidence for the absence of the CH₂ - CH₂ "defect" peak.

6.2.3 The respondent proprietor further argued that method (B), viz the dehydrohalogenation method, comprised the removal of the halogens shown as X₂ in formula (6) of claim 1. However, the removal was necessarily incomplete and some halogen remained in the polymers. This was shown in the evidence accompanying the proprietor's letter dated 4 August 1998, wherein according to Experiment 1 0.23 w/w% of residual chlorine was determined in the obtained polymers. Accordingly, the presence of residual halogen differentiated the polymers obtainable by method (B) from the ones obtainable by the method of C1, since in the latter no halogen was present.

6.2.4 It was also argued by the respondent proprietor that the polymers obtained by the Wittig reaction, ie method (C) of claim 1, possessed fragments in *cis* and *trans* configurations (cf the evidence submitted with the

letter dated 8 September 2000, Annex 6). This was not the case, however, with the polymers obtained according to the method of document C1.

6.2.5 The appellant opponent II did not submit any evidence contradicting the arguments of the respondent proprietor mentioned above under points 6.2.3 and 6.2.4.

6.2.6 For these reasons, it is the judgement of the board that the organic electroluminescence device of claim 1 is new over the disclosure of document C1, as the polymers which are obtainable by methods (B) and (C) can be differentiated from the polymers obtained by the sulphonium salt precursor method of this document.

6.3 Inventive step

6.3.1 The issue of inventive step was dealt with in the decision of the opposition division under point 24 of the reasons for the decision.

6.3.2 Appellant opponent II has not substantiated an objection on this ground and the board has nothing to add to the opposition division's reasoning.

6.4 The board, for the preceding reasons, judges that the electroluminescence device according to claim 1 fulfils the requirements of the EPC.

6.5 The description has still to be adapted to the claims according to the respondent's second auxiliary request. In particular, it should be clarified that polymers which are obtainable by method (A) are not part of the invention.

Order

For these reasons it is decided that:

1. The appeal is admissible.
2. The decision under appeal is set aside.
3. The case is remitted to the department of first instance with the order to maintain the patent with the following documents:
 - Claims 1 to 12 of the second auxiliary request filed on 21 December 2001,
 - a description still to be adapted,
 - Figures 1 to 3 as granted.

Registrar:

Chair:

D. Meyfarth

R. G. O'Connell