

**Internal distribution code:**

- (A) [ ] Publication in OJ  
(B) [ ] To Chairmen and Members  
(C) [X] To Chairmen  
(D) [ ] No distribution

**D E C I S I O N**  
**of 15 November 2002**

**Case Number:** T 0811/00 - 3.4.2

**Application Number:** 94111419.1

**Publication Number:** 0635734

**IPC:** G02B 1/08, G02F 1/17

**Language of the proceedings:** EN

**Title of invention:**  
Method of making light-polarizing particles

**Applicant:**  
RESEARCH FRONTIERS INCORPORATED

**Opponent:**  
-

**Headword:**  
-

**Relevant legal provisions:**  
EPC Art. 54

**Keyword:**  
"Novelty (no)"

**Decisions cited:**  
-

**Catchword:**  
-



**Case Number:** T 0811/00 - 3.4.2

**D E C I S I O N**  
**of the Technical Board of Appeal 3.4.2**  
**of 15 November 2002**

**Appellant:** RESEARCH FRONTIERS INCORPORATED  
240 Crossways Park Drive  
Woodbury,  
New York 11797 (US)

**Representative:** Zinnecker, Armin, Dipl.-Ing.  
Lorenz-Seidler-Gossel  
Widenmayerstrasse 23  
D-80538 München (DE)

**Decision under appeal:** Decision of the Examining Division of the  
European Patent Office posted 25 February 2000  
refusing European patent application  
No. 94 111 419.1 pursuant to Article 97(1) EPC.

**Composition of the Board:**

**Chairman:** E. Turrini  
**Members:** A. G. Klein  
V. Di Cerbo

## Summary of Facts and Submissions

- I. European patent application No. 94 111 419.1 (Publication No. 0 635 734) was refused by decision of the Examining Division.

The reason for the refusal was - *inter alia* - that the claimed subject-matter lacked novelty in view of the contents of the document

D1: EP-A-0 551 136.

- II. The appellant (applicant) lodged an appeal against the decision, requesting that it be set aside and that a patent be maintained on the basis of the claims presented as main or auxiliary requests with the statement of the grounds of appeal dated 19 June 2000.

Claim 1 of the main request reads as follows:

- "1. A method of preparing particles of a light-polarizing material, which comprises reacting (i) elemental molecular iodine, (ii) a hydrohalide acid and/or an ammonium or alkali metal or alkaline earth metal halide, and (iii) a precursor compound selected from the group consisting of metal-ion chelating heterocyclic compounds containing a nitrogen atom in the heterocyclic ring, in the presence of a solution of a polymeric stabilizer in a non-aqueous solvent in which the precursor compound and the light-polarized material are at least substantially insoluble, characterized in that

said reaction is carried out in the presence of an amount of water effective to cause the formation of particles of said light-polarizing material, but less than an amount which results in the formation of particles of said light-polarizing material having an average particle length in excess of 1 micron, wherein said amount of water is no more than 20% by weight, based upon the weight of said reactants (i), (ii) and (iii)."

Claim 1 of the auxiliary request corresponds to claim 1 of the main request, with the expression "which is controlled such that it is" being inserted in the characterizing portion between "an amount of water" and "effective to cause".

The appellant in its statement of the grounds submitted in substance that it discovered that control of the particle size of the light polarizing crystals may be effected by rigorously controlling the relative amount of water in the reaction medium, to which the skilled person could get no hint whatsoever from the prior art.

The appellant also requested that oral proceedings be appointed in case the Board could not follow its argumentation.

III. In a communication pursuant to Article 11(2) RPBA dated 25 September 2002 and annexed to the summons to attend the oral proceedings which were appointed in accordance with the appellant's auxiliary request the Board expressed its provisional view that claim 1 of the main request did not appear to recite any "controlling" of the amount of water, and that it was not apparent which specific method step the reference to the amount of

water being "controlled" was meant to define in claim 1 of the auxiliary request. The claim would in particular appear to cover embodiments with no further water being added to the trace amount of residual water already present in the solvent or precursor compound. This appeared to be the case also for the method of document D1.

- IV. In its response of 24 October 2002 to the summons to oral proceedings the appellant withdrew its request for oral proceedings, requested a decision in writing and maintained its earlier main and auxiliary requests without submitting any further arguments.
- V. The oral proceedings scheduled to take place on 14 January 2003 were cancelled.

### **Reasons for the Decision**

- 1. The appeal is admissible.
- 2. *Main request*

A method as defined in the preamble of claim 1 is undisputedly disclosed in document D1, as was agreed by the appellant in its statement of the grounds of appeal (see page 2, 2nd paragraph). Furthermore, the method of document D1 also results in the formation of particles of light-polarizing material having an average particle length which does not exceed the limit of 1 micrometre as is set out in the characterizing portion of claim 1 (see column 4, lines 11 to 15: "preferred size of the light-polarizing particles is less than 1  $\mu\text{m}$  and preferably in the range from 0,1 to 0,3  $\mu\text{m}$ ").

The claimed method is "characterized in that the reaction is carried out in the presence of an amount of water effective to cause the formation of particles of said light-polarizing material, but less than an amount which results in the formation of particles of said light-polarizing material having an average particle length in excess of 1 micron, wherein said amount of water is no more than 20% by weight, based upon the weight of "the reactants".

Document D1 does not specify that any amount of water must be added to the reactants.

On the one hand, however, the wording of the characterizing portion of claim 1 does not require the addition of supplementary water to the reactants since it also encompasses reactions carried out in the presence only of trace amounts of residual water in the solvent or precursor compound, as is clear e.g. from Example 1 of the invention as described on page 15 of the description of the present patent application (see also the last sentence on page 4, according to which the 6 milliseconds decay time as measured for Example 1 correlates with a particle size of up to 0,2 micrometres).

On the other hand, the present description itself states that the requisite reaction to form the light valve particles does not occur in the complete absence of water (see page 3, lines 15 to 20), and that residual water present in the precursor compound is usually in the range from 1 to 3 percent by weight (see page 17, lines 11 to 14). Accordingly, the Board concurs with the examining division's view that the mere fact that the method of document D1 actually

produces particles having a size of less than 1 micrometre and preferably in a range from 0,1 to 0,3 micrometre - which is the size considered suitable also in the present description (see page 4, lines 1 to 4) - establishes that some residual water is present also in the starting materials of the method of document D1.

Since claim 1 encompasses a preparation method performed without any supplementary water being added, its subject matter is anticipated by the method of document D1 and is not novel within the meaning of Article 54 EPC, accordingly.

3. *Auxiliary request*

Claim 1 of the auxiliary request is distinguished from claim 1 of the main request in that the amount of water effective to cause the formation of particles of the desired size and in the presence of which the reaction is performed is now stated to be "controlled".

As indicated in the Board's communication of 25 September 2002, it is not apparent which additional limitation this reference to controlling the amount of water is meant to define. The claim in particular still covers embodiments with no further water being added to the trace amount of residual water already present in the solvent or precursor compound (see Examples 1 or 4 on pages 15 and 16 of the description), which was not denied by the appellant.

Accordingly, the subject matter of claim 1 of the appellant's auxiliary request is not novel either within the meaning of Article 54 EPC, for the reasons

already set out in relation with the main request.

**Order**

**For these reasons it is decided:**

The appeal is dismissed.

The Registrar:

The Chairman:

P. Martorana

E. Turrini