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**D E C I S I O N**  
of 27 November 1998

**Case Number:** T 0389/94 - 3.4.1

**Application Number:** 88105176.7

**Publication Number:** 0285129

**IPC:** H01L 21/306

**Language of the proceedings:** EN

**Title of invention:**  
Dry etching method

**Applicant:**  
KABUSHIKI KAISHA TOSHIBA

**Opponent:**  
-

**Headword:**  
Dry etching method/KABUSHIKI KAISHA TOSHIBA

**Relevant legal provisions:**  
EPC Art. 111(1), 114(1)

**Keyword:**  
"Prior art documents introduced ex-officio by the Board"  
"Claims substantially amended in the appeal procedure"  
"Remittal of the case to the examining division for further prosecution"

**Decisions cited:**  
T 0028/81, T 0063/86, T 0047/90, T 0837/91, T 1016/96

**Catchword:**



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Boards of Appeal

Chambres de recours

Case Number: T 0389/94 - 3.4.1

**D E C I S I O N**  
of the Technical Board of Appeal 3.4.1  
of 27 November 1998

**Appellant:** KABUSHIKI KAISHA TOSHIBA  
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Kanagawa-ken 210 (JP)

**Representative:** Hansen, Bernd, Dr. Dipl.-Chem.  
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**Decision under appeal:** Decision of the Examining Division of the  
European Patent Office posted 23 December 1993  
refusing European patent application  
No. 88 105 176.7 pursuant to Article 97(1) EPC.

**Composition of the Board:**

**Chairman:** G. Davies  
**Members:** H. K. Wolfrum  
U. G. O. Himmler

## Summary of Facts and Submissions

I. European patent application 88 105 176.7 relates to a dry etching method. The application was refused by a decision of the examining division dated 23 December 1993, on the grounds that the subject-matter of claims 1 to 6 as filed with a letter dated 11 August 1993 lacked an inventive step having regard to documents

D1: JP-A-61 256 638 (with family member D1':  
US-A-659 426) and

D2: US-A-4 412 885.

II. On 11 February 1994 the applicant lodged an appeal against the decision and paid the prescribed fee. On 25 April 1994 a statement of grounds of appeal was filed. The applicant requested the reversal of the decision and the grant of a patent on the basis of the aforementioned claims 1 to 6. Furthermore, an auxiliary request for a hearing before the Board of Appeal was made.

III. By a communication dated 14 May 1998, the Board, exercising its discretion under Article 114(1) EPC, drew the appellant's attention to two further documents:

D3: JP-A-53 146 939 (and the corresponding JP- and WPI-abstracts) and

D4: JP-A-56 158 452 (and the corresponding JP- and WPI-abstracts).

In view of the considerable relevance of these documents, the appellant was invited to state whether it preferred the case to be remitted to the first instance so as to avoid a loss of an instance of examination or whether it wished to continue the procedure before the Board of Appeal.

IV. By a letter dated 24 September 1998, the appellant filed a set of amended claims 1 to 3 to replace claims 1 to 6 refused by the examining division. The appellant further requested that the present case be remitted to the first instance for further prosecution. The request for oral proceedings before the Board of Appeal was withdrawn.

The amended claims comprise two independent claims which read as follows:

"1. A dry etching method in which etching is applied to aluminium containing transition metal, using an etching gas containing halogen and carbon dioxide or halogen, carbon monoxide and carbon dioxide."

"3. A dry etching in which etching is applied to aluminium containing transition metal, using an etching gas containing halogen and carbon oxide, wherein the amount of said carbon oxide is expressed by the following relationship :

$$R = X/3 \text{ to } 200X$$

wherein "X" is the ratio of the number of transition metal atoms to the total number of aluminium alloy atoms, and wherein "R" is the ratio of the number of carbon oxide molecules to the number of halogen atoms."

## Reasons for the decision

1. The appeal complies with the requirements of Articles 106 to 108 and Rule 64 EPC and is, therefore, admissible.
2. The introduction of further prior art documents by the Board of Appeal and the filing of amended claims have given rise to a new situation in that the subject-matter of claim 1 has significantly changed; furthermore, the newly introduced prior art has not been considered by the first instance.
3. In accordance with the established case law of the Boards of Appeal, if prior art is introduced during the appeal procedure and is considered relevant, the case is normally remitted to the department of the first instance (see for example T 28/81, cf. Case Law of the Boards of Appeal of the European Patent Office, page 342; T 837/91 of 23.10.1992; T 1016/96 of 24.02.1998). In the present case, the appellant would be deprived of the possibility of having his case considered by two instances if the Board would come to the conclusion that no patent could be granted on the subject-matter of the application.

Moreover, substantial amendments have been made to the claims which comprise now for the first time two independent claims defining different etching methods, of which the method according to claim 1, requiring the use of carbon dioxide as constituent of the gas for the etching of aluminium containing transition metal, has never been the subject of any previous request. It is likewise the established practice of the Boards of Appeal that, in a case where substantial amendments are proposed on appeal and the amendments require further substantive examination to both the formal and

substantive requirements of the EPC, the case should be remitted to the first instance (see T 63/86, OJ EPO 1988, 224; T 47/90, OJ EPO, 1991, 486).

In addition, the applicant has explicitly asked for a remittal to the first instance.

For these reasons, the Board, making use of its power under Article 111(1) EPC, finds it appropriate to remit the case to the examining division for further prosecution as requested by the appellant.

4. The further examination should consider all relevant requirements of the EPC, as regards in particular the basis of original disclosure (Article 123(2) EPC), clarity (Article 84 EPC), unity of invention (Article 82 EPC) and the requirements of Articles 52(1); 54(1) and (2) and 56 EPC. In view of the fact that the use of carbon dioxide specifically for the etching of aluminium containing a transition metal is claimed for the first time in the present application, the examining division may even consider it appropriate to have an additional search conducted.

## Order

### **For these reasons it is decided that:**

The case is remitted to the examining division for further prosecution in relation to the proposed amended claims filed on 24 September 1998.

The Registrar:

M. Beer

The Chairman:

G. Davies