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**D E C I S I O N**  
**of 28 April 2004**

**Case Number:** T 0011/01 - 3.4.2

**Application Number:** 95907427.9

**Publication Number:** 0739485

**IPC:** G01N 33/18

**Language of the proceedings:** EN

**Title of invention:**

A method and apparatus for controlling the feed of water treatment chemicals using a voltammetric sensor

**Applicant:**

BUCKMAN LABORATORIES INTERNATIONAL, INC.

**Opponent:**

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**Headword:**

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**Relevant legal provisions:**

EPC Art. 111

**Keyword:**

"Amended claims"  
"Remittal to the Examining Division"

**Decisions cited:**

-

**Catchword:**

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Case Number: T 0011/01 - 3.4.2

**D E C I S I O N**  
of the Technical Board of Appeal 3.4.2  
of 28 April 2004

**Appellant:** BUCKMAN LABORATORIES INTERNATIONAL, INC.  
1256 North McLean Boulevard  
Memphis  
TN 38108-0305 (US)

**Representative:** Matthews, Derek Peter  
Frank B. Dehn & Co.  
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**Decision under appeal:** Decision of the Examining Division of the  
European Patent Office posted 14 July 2000  
refusing European application No. 95907427.9  
pursuant to Article 97(1) EPC.

**Composition of the Board:**

**Chairman:** A. G. Klein  
**Members:** M. A. Rayner  
J. H. P. Willems

## Summary of Facts and Submissions

I. The patent applicant has appealed against the decision of the examining division refusing European patent application number 95 907 427.9 (WO 95/19566). The patent application concerns a method and apparatus for controlling the feed of treatment chemical into a solution using a voltammetric sensor.

II. Claims 1, 2, 4 to 7 and 8 of the application as published are worded as follows:

"1. A method for controlling the chemical treatment of a solution comprising the steps of: (a) feeding a treatment chemical into the solution; (b) applying an external voltage across a reference electrode and a working electrode of a voltammetric sensor while the electrodes are immersed in the solution; (c) measuring a current that flows through the working electrode; (d) converting the measured current into a feedback signal which is indicative of a concentration of a substance in the solution; and (e) using the feedback signal to control a rate of feeding the treatment chemical in step (a).

2. The method according to claim 1, wherein the step of using the feedback signal in step (e) compares the feedback signal and a reference signal to generate a control signal for controlling the rate of feeding the treatment chemical in step (a).

4. The method according to claim 1, wherein applying an external voltage step (b) comprises applying a voltage pulse train.

5. The method according to claim 4, wherein the current measuring step (c) measures the current after the application of a voltage pulse of the pulse train to permit non-faradaic charging.

6. The method according to claim 1, further comprising the step of: (f) applying a current to the working electrode sufficient to remove deposits from the working electrode.

7. The method according to claim 1, further comprising the steps of: measuring a background signal before the treatment chemical is introduced into the solution; and subtracting the background signal from the feedback signal after the treatment chemical has been introduced into the solution.

8. An apparatus for controlling the amount of treatment chemicals to be added to a solution, comprising: means for feeding a treatment chemical into the solution; a voltammetric sensor including: a reference electrode, a working electrode, means for applying a voltage across the reference electrode and working electrode while immersed in the solution, means for measuring a current that flows through the working electrode, and means for converting the measured current into a feedback signal which is indicative of a concentration of a substance in the solution; and means for applying the feedback signal to the feeding means whereby to control a rate of feeding the treatment chemical."

III. The application was subject to an International Preliminary Examination Report (IPER) to which the examination division made reference during the examination proceedings. According to Section 1 of the IPER the subject matter of, *inter alia*, claims 1 and 8 as published lacks novelty. The subject matter of, *inter alia*, claims 2, 4, 5, 6 and 7 as published lacks inventive step.

IV. The decision under appeal makes reference to the following documents:

D1 EP-A-466 302

D2 WO-A-88/08532 (=US-A-4 822 474).

The decision of the examining division was based on independent claims 1 and 8 as published. The examination division was of the view that document D1 taking account of document D2, incorporated into the teaching of document D1 by a reference therein to US-A-4 822 474, discloses the features of independent method claim 1 and of corresponding apparatus claim 8. The division observed that claim 1 does not exclude either sampling the solution or adding analysing agent. Thus the subject matter of both claims 1 and 8 lacked novelty.

V. According to the appellant, step (b) of claim 1 clearly states that the electrodes are immersed in the solution, i.e. the solution defined previously in the claim as being that to which the treatment chemical is being added. Document D1 on the other hand discloses drawing off of a sample stream 18 for separate analysis with

addition of an analysing agent 36 prior to passing through an analyser 52, for example the amperometric analyser of document D2, thus any electrodes are not immersed in or in contact with the solution. Remittal of the case to the examining division for fuller consideration of inventive step thus appeared appropriate and was requested. Oral proceedings were requested before the board exercised any power adverse to the appellant.

- VI. In a communication attached to a summons to oral proceedings, the board informed the appellant that the sensor is, according to document D1, not in the process stream 12 but in what amounts to a parallel sampling path, which seems to return to stream 12 via 29 (see column 5, line 4). The question at issue is whether the wording of claim 1 really excludes the document D1 configuration. The claim is cast as a method claim and the reader can understand that the steps recited are in the order given, i.e. feeding followed by applying and the other steps. The view of the appellant that step (b) involves the solution in which the electrodes are immersed being that to which the treatment chemical is "being added", i.e. a kind of temporal coincidence or vague indication that everything takes place in one vessel, may therefore not be the only way of understanding the claim. The board thus doubted that the word "solution" on its own excludes using the contents of the parallel sampling path of document D1, to which the analysing agent has later also been added. The board observed that the appellant did not argue for novelty of any features of claim 1 other than feature (b), which may be considered to imply that the position of the examining division was otherwise agreed with.

VII. Following the communication from the board, the appellant replied by filing an amended claim set together with three auxiliary requests. The appellant requested a decision that the new main request, or failing that one of the auxiliary requests, is novel. Remittal of the case to the Examining Division for further consideration of inventive step would then be appropriate, only novelty having been the subject of the appealed decision. The appellant noted that the new main request incorporates claim 2 into claim 1 (claim 2 having been acknowledged in the IPER as novel). The auxiliary requests incorporate claim 6, claim 7 and finally a combination of claims 4 and 5 into claim 1 (with cancellation of the apparatus claims). All of these claims were likewise acknowledged in the IPER as novel. The appellant expressed the view that it may be possible to avoid the need for oral proceedings.

VIII. Following the reply of the appellant, the board cancelled the oral proceedings.

### **Reasons for the Decision**

1. The appeal complies with the provisions mentioned in Rule 65(1) EPC and is therefore admissible.
2. The claims upon which the decision under appeal was based have been replaced following the communication of the board. The claims now presented involve features of the published dependent claims as explained by the appellant. The IPER took a negative line with respect to inventive step in connection with subject matter

included in published dependent claims 2, 4 to 7 which corresponds to that contained in the independent claims of the various current requests of the appellant, but gave no reasoning for this stance, nor is any reasoning present in the remainder of the file.

3. While it might be concluded from the communication of the board that it agreed with the examining division with respect to the former claims the subject of the decision under appeal, the board does not consider it appropriate to advance a reasoned view in relation to subject matter in fresh independent claims of requests presented for the first time during the appeal proceedings, the reason being that if it were to reach a negative decision, the appellant would have been deprived of an instance. In line with this approach, the board does not comply with the request of the appellant to decide on novelty of the subject matter of any of the present requests as this could hamper the work of the examining decision, which, following closure of the discussion of the claims upon which its decision was based, is free to examine whether the fresh claims comply with the requirements of the Convention.
  
4. Therefore, as the appellant, despite its request for a decision on novelty of the requests made during the appeal proceedings, is not adversely affected by the board refraining from taking this action, the board considers it appropriate simply to comply with the appellant's request for remittal to the examining division for further prosecution without commenting on the merits of the claims now submitted.



**Order**

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

1. The decision under appeal is set aside.
2. The case is remitted to the first instance for further prosecution.

The Registrar:

The Chairman:

P. Martorana

A. G. Klein