

**PATENT COOPERATION TREATY**

**PCT**

**INTERNATIONAL PRELIMINARY REPORT ON PATENTABILITY**

(Chapter I of the Patent Cooperation Treaty)

(PCT Rule 44*bis*)

Applicant's or agent's file reference 08/572WO	<b>FOR FURTHER ACTION</b>		See item 4 below
International application No. PCT/EP2009/004000	International filing date ( <i>day/month/year</i> ) 04 June 2009 (04.06.2009)	Priority date ( <i>day/month/year</i> ) 12 June 2008 (12.06.2008)	
International Patent Classification (8th edition unless older edition indicated) See relevant information in Form PCT/ISA/237			
Applicant ABB TECHNOLOGY AG			

1. This international preliminary report on patentability (Chapter I) is issued by the International Bureau on behalf of the International Searching Authority under Rule 44 *bis*.1(a).

2. This REPORT consists of a total of 7 sheets, including this cover sheet.

In the attached sheets, any reference to the written opinion of the International Searching Authority should be read as a reference to the international preliminary report on patentability (Chapter I) instead.

3. This report contains indications relating to the following items:

<input checked="" type="checkbox"/>	Box No. I	Basis of the report
<input type="checkbox"/>	Box No. II	Priority
<input type="checkbox"/>	Box No. III	Non-establishment of opinion with regard to novelty, inventive step and industrial applicability
<input type="checkbox"/>	Box No. IV	Lack of unity of invention
<input checked="" type="checkbox"/>	Box No. V	Reasoned statement under Article 35(2) with regard to novelty, inventive step or industrial applicability; citations and explanations supporting such statement
<input type="checkbox"/>	Box No. VI	Certain documents cited
<input type="checkbox"/>	Box No. VII	Certain defects in the international application
<input type="checkbox"/>	Box No. VIII	Certain observations on the international application

4. The International Bureau will communicate this report to designated Offices in accordance with Rules 44*bis*.3(c) and 93*bis*.1 but not, except where the applicant makes an express request under Article 23(2), before the expiration of 30 months from the priority date (Rule 44*bis* .2).

	Date of issuance of this report 11 January 2011 (11.01.2011)
The International Bureau of WIPO 34, chemin des Colombettes 1211 Geneva 20, Switzerland	Authorized officer  <b>Yolaine Cussac</b>
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**PATENT COOPERATION TREATY**

**TRANSLATION**

From the  
INTERNATIONAL SEARCHING AUTHORITY

**PCT**

WRITTEN OPINION OF THE  
INTERNATIONAL SEARCHING AUTHORITY

(PCT Rule 43bis.1)

To:

Date of mailing (day/month/year) **See form PCT/ISA/210**

Applicant's or agent's file reference <b>08/572WO</b>		<b>FOR FURTHER ACTION</b> See paragraph 2 below
International application No. <b>PCT/EP2009/004000</b>	International filing date (day/month/year) <b>04.06.2009</b>	Priority date (day/month/year) <b>12.06.2008</b>
International Patent Classification (IPC) or both national classification and IPC <b>H03K3/537</b>		
Applicant <b>ABB TECHNOLOGY AG</b>		

1. This opinion contains indications relating to the following items:

- Box No. I Basis of the opinion
- Box No. II Priority
- Box No. III Non-establishment of opinion with regard to novelty, inventive step and industrial applicability
- Box No. IV Lack of unity of invention
- Box No. V Reasoned statement under Rule 43bis.1(a)(i) with regard to novelty, inventive step or industrial applicability; citations and explanations supporting such statement
- Box No. VI Certain documents cited
- Box No. VII Certain defects in the international application
- Box No. VIII Certain observations on the international application

2. **FURTHER ACTION**

If a demand for international preliminary examination is made, this opinion will be considered to be a written opinion of the International Preliminary Examining Authority ("IPEA") except that this does not apply where the applicant chooses an Authority other than this one to be the IPEA and the chosen IPEA has notified the International Bureau under Rule 66.1bis(b) that written opinions of this International Searching Authority will not be so considered.

If this opinion is, as provided above, considered to be a written opinion of the IPEA, the applicant is invited to submit to the IPEA a written reply together, where appropriate, with amendments, before the expiration of 3 months from the date of mailing of Form PCT/ISA/220 or before the expiration of 22 months from the priority date, whichever expires later.

For further options, see Form PCT/ISA/220.

3. For further details, see notes to Form PCT/ISA/220.

Name and mailing address of the ISA/EP	Date of completion of this opinion	Authorized officer
Facsimile No.		Telephone No.

WRITTEN OPINION OF THE  
INTERNATIONAL SEARCHING AUTHORITY

International application No.

PCT/EP2009/004000

Box No. I	Basis of this opinion
1.	<p>With regard to the <b>language</b>, this opinion has been established on the basis of:</p> <p><input checked="" type="checkbox"/> the international application in the language in which it was filed</p> <p><input type="checkbox"/> a translation of the international application into _____, which is the language of a translation furnished for the purposes of international search (Rules 12.3(a) and 23.1(b)).</p>
2.	<p><input type="checkbox"/> This opinion has been established taking into account the <b>rectification of an obvious mistake</b> authorized by or notified to this Authority under Rule 91 (Rule 43bis.1(a))</p>
3.	<p>With regard to any <b>nucleotide and/or amino acid sequence</b> disclosed in the international application and necessary to the claimed invention, this opinion has been established on the basis of:</p> <p>a. type of material</p> <p><input type="checkbox"/> a sequence listing</p> <p><input type="checkbox"/> table(s) related to the sequence listing</p> <p>b. format of material</p> <p><input type="checkbox"/> on paper</p> <p><input type="checkbox"/> in electronic form</p> <p>c. time of filing/furnishing</p> <p><input type="checkbox"/> contained in the international application as filed</p> <p><input type="checkbox"/> filed together with the international application in electronic form</p> <p><input type="checkbox"/> furnished subsequently to this Authority for the purposes of search</p>
4.	<p><input type="checkbox"/> In addition, in the case that more than one version or copy of a sequence listing and/or table(s) relating thereto has been filed or furnished, the required statements that the information in the subsequent or additional copies is identical to that in the application as filed or does not go beyond the application as filed, as appropriate, were furnished.</p>
5.	<p>Additional comments:</p>

WRITTEN OPINION OF THE  
INTERNATIONAL SEARCHING AUTHORITY

International application No. PCT/EP2009/004000
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<b>Box No. V</b>	<b>Reasoned statement under Rule 43bis.1(a)(i) with regard to novelty, inventive step or industrial applicability; citations and explanations supporting such statement</b>		
1. Statement			
Novelty (N)	Claims	4, 7-13	YES
	Claims	1-3, 5, 6	NO
Inventive step (IS)	Claims	none	YES
	Claims	1-13	NO
Industrial applicability (IA)	Claims	1-13	YES
	Claims	none	NO
2. Citations and explanations:			
<p>Reference is made to the following documents:</p> <p style="margin-left: 40px;">D1: GB 837 958 A (VICKERS ELECTRICAL CO LTD) 15 June 1960 (1960-06-15)</p> <p style="margin-left: 40px;">D2: GB 401 737 A (THOMAS EDWARD ALLIBONE; ASS ELECT IND) 20 November 1933 (1933-11-20)</p> <p style="margin-left: 40px;">D3: DE 750 913 C (UNBEKANNT) 31 January 1945 (1945-01-31)</p> <p style="margin-left: 40px;">D4: DE 738 751 C (ERNST SCHIEBOLD DR) 22 February 1944 (1944-02-22)</p> <p>1. The present application fails to comply with the requirements of PCT Article 33(1) because the subject matter of claims 1-3, 5 and 6 is not novel (PCT Article 33(2)). The reasons are as follows:</p> <p>1.1 Document D1 discloses (the references between parentheses relate to said document):</p> <p style="margin-left: 40px;">An impulse voltage generator module (figure 5) having at least two tube-like insulators (4), at least one of which has a respective inner cavity that extends at least</p>			

WRITTEN OPINION OF THE  
INTERNATIONAL SEARCHING AUTHORITY

International application No.

PCT/EP2009/004000

Box No. V

Reasoned statement under Rule 43bis.1(a)(i) with regard to novelty, inventive step or industrial applicability;  
citations and explanations supporting such statement

over part of the entire length thereof,  
wherein at least one electrical component  
(G1, G2, C1, Rs, RT1) is arranged between at  
least two of the insulators (4) and is  
mechanically connected thereto (4), wherein  
at least one electrical internal component  
(G1, G2, C1) is arranged in the cavity of the  
at least one of the at least two insulators  
(4).

Therefore, the subject matter of claim 1 is not  
novel.

1.2 Similarly, D1, figure 5 discloses the features of  
claims 2, 3, 5 and 6, which are therefore likewise  
not novel (PCT Article 33(2)); see in particular:

- spatially parallel insulators (4)
- internal components in the form of  
capacitors (C1) and spark gaps (G1, G2)
- at least one impulse voltage generator module  
(RT1, RS, C1, G1, G2)
- further internal components (G1, G2) of a  
further module.

2. The present application does not meet the  
requirements of PCT Article 33(1) because the  
subject matter of claims 4 and 7-13 does not  
involve an inventive step (PCT Article 33(3)). The  
reasons are as follows:

2.1 D1 is considered to be the prior art closest to

WRITTEN OPINION OF THE  
INTERNATIONAL SEARCHING AUTHORITY

International application No.

PCT/EP2009/004000

Box No. V Reasoned statement under Rule 43bis.1(a)(i) with regard to novelty, inventive step or industrial applicability; citations and explanations supporting such statement

the subject matter of claim 4.

The difference between D1, figure 5 and the features of claim 4, which is the use of a component having a rated voltage of at least 20 kV, corresponds to the problem of selecting a suitable component. If such voltages can arise, a person skilled in the art would select a component having such a rated voltage without exercising inventive skill.

2.2 The difference between D1, figure 5 and the features of claim 7 is that multiple internal components directly interact with each other between adjacent modules in an electrical manner.

If considering a stage of the Marx generator according to D1 a module, one might actually say that claim 7 is not novel, because the capacitors (C1) and spark gaps (G1, G2) are internal components of a tube and interact with each other. What is certain, however, is that they do not form a potential divider as claimed in claim 8.

Therefore, the difference between claim 8 and D1 is that a potential divider is used. This difference corresponds to the problem of how to measure the high output voltage. A person skilled in the art would consult the prior art and find D2. D2 discloses in figure 1 and on page 3, line 128 to page 4, line 2 a potential divider Pr

WRITTEN OPINION OF THE  
INTERNATIONAL SEARCHING AUTHORITY

International application No.

PCT/EP2009/004000

**Box No. V** Reasoned statement under Rule 43bis.1(a)(i) with regard to novelty, inventive step or industrial applicability; citations and explanations supporting such statement

in a similar impulse voltage generator. A person skilled in the art would therefore combine the teaching of D1 and D2, thereby obtaining a circuit according to claims 7-9.

2.3 The combination of D1 and D2 also discloses (see D2, figure 4 or 5) a surge arrester M, which is connected to the output H.

2.4 Claim 13 defines an additional, mechanically adjustable potential divider. A person skilled in the art seeking to reduce the measured voltage even further would use, without exercising inventive skill, an external potentiometer, which would implement a potential divider as claimed.

2.5 For the aforementioned reasons, dependent claims 4 and 7-13 do not involve an inventive step (PCT Article 33(3)).