

PATENT COOPERATION TREATY

From the
INTERNATIONAL SEARCHING AUTHORITY

PCT

**WRITTEN OPINION OF THE
INTERNATIONAL SEARCHING AUTHORITY**
(PCT Rule 43*bis*.1)

To:

see form PCT/ISA/220

Date of mailing
(day/month/year) see form PCT/ISA/210 (second sheet)

Applicant's or agent's file reference
see form PCT/ISA/220

FOR FURTHER ACTION
See paragraph 2 below

International application No.
PCT/MY2018/000025

International filing date (day/month/year)
12.07.2018

Priority date (day/month/year)
04.08.2017

International Patent Classification (IPC) or both national classification and IPC
INV. C11B1/00 C11B3/00

Applicant
SIME DARBY PLANTATION INTELLECTUAL PROPERTY SDN...

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 43*bis*.1(a)(i) with regard to novelty, inventive step and 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 usually 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 66.1*bis*(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.

Name and mailing address of the ISA:



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Date of completion of this opinion

see form
PCT/ISA/210

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Box No. I Basis of the opinion

1. With regard to the **language**, this opinion has been established on the basis of:
 - the international application in the language in which it was filed.
 - 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)).
2. This opinion has been established taking into account the **rectification of an obvious mistake** authorized by or notified to this Authority under Rule 91 (Rule 43bis.1(a))
3. With regard to any **nucleotide and/or amino acid sequence** disclosed in the international application, this opinion has been established on the basis of a sequence listing:
 - a. forming part of the international application as filed:
 - in the form of an Annex C/ST.25 text file.
 - on paper or in the form of an image file.
 - b. furnished together with the international application under PCT Rule 13ter.1(a) for the purposes of international search only in the form of an Annex C/ST.25 text file.
 - c. furnished subsequent to the international filing date for the purposes of international search only:
 - in the form of an Annex C/ST.25 text file (Rule 13ter.1(a)).
 - on paper or in the form of an image file (Rule 13ter.1(b) and Administrative Instructions, Section 713).
4. In addition, in the case that more than one version or copy of a sequence listing has been filed or furnished, the required statements that the information in the subsequent or additional copies is identical to that forming part of the application as filed or does not go beyond the application as filed, as appropriate, were furnished.
5. Additional comments:

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

1. Statement

Novelty (N)	Yes: Claims	<u>1-17</u>
	No: Claims	
Inventive step (IS)	Yes: Claims	
	No: Claims	<u>1-17</u>
Industrial applicability (IA)	Yes: Claims	<u>1-17</u>
	No: Claims	

2. Citations and explanations

see separate sheet

Re Item V

Reasoned statement with regard to novelty, inventive step or industrial applicability; citations and explanations supporting such statement

Reference is made to the following documents:

- | | |
|----|-------------------|
| D1 | EP 2 502 502 A1 |
| D2 | WO 2014/081279 A1 |
| D3 | EP 2 716 746 A1 |
| D4 | EP 2 502 500 A1 |
| D5 | EP 2 351 822 A1 |
| D6 | EP 2 594 625 A1 |
| D7 | WO 2012/107230 A1 |

1 Novelty and inventive step Art 33(1)-(3) PCT

The process according to claim 1 is considered novel since the sequence of steps 1) to e) is not disclosed in the prior art, in particular, the washing step of oil palm fresh fruit at 0 to 100 °C, prior to sterilizing and refining, as well as the steps of sterilization, threshing, digestion and pressing, are not unambiguously disclosed in the prior art.

The problem to be solved is to reduce the formation of MCPD contaminants from oil. The problem is solved by removing the MCPD precursor prior to refining, thus avoiding these contaminant to be formed during refining. This is achieved by rinsing the fresh palm oil fruit bunches before oil extraction and processing.

The closest prior art is D1, it relates to contaminant removal from oil, by means of refining. D1 teaches that washing crude oil or the plant material prior to refining avoids contaminants formation by removing chlorine donors before a crude oil is produced. D1 differs from claim 1 of the present application in that the washing temperature is not unambiguously disclosed and the steps of sterilization, threshing, digestion and pressing are not disclosed. The latter steps are standard in oil production. In addition, the

temperature range of claim 1 is rather broad and very likely the washing step described in D1 is carried out at ambient temperature which is covered by the range of claim 1.

Claim 1 is considered as an obvious alternative method for refining oil, in particular removing chlorinated contaminants.

Dependent claims 2-17 are not considered to contribute to the art since they refer to standard preferred embodiments. The features such as the washing temperature, refining steps, amount of free fatty acids and final amount of contaminant are known from D1. The use of a solution according to claim 3 is not suggested by D1. However, the effect appears to be achieved by a washing step with an aqueous solution, rather than the actual pH value of the solution, unless proven otherwise by the applicant

Therefore, claims 1-17 do not meet of requirements of the PCT with respect to inventive step.