PATENT COOPERATION TREATY

PCT

INTERNATIONAL SEARCH REPORT

(PCT Article 18 and Rules 43 and 44)

Applicant's or agent's file reference	**FOR FURTHER ACTION**	see Form PCT/ISA/220 as well as, where applicable, item 5 below.
02378-WO		
International application No.	International filing date *(day/month/year)*	(Earliest) Priority Date *(day/month/year)*
PCT/EP2018/073601	3 September 2018 (03-09-2018)	7 September 2017 (07-09-2017)
Applicant		
HALDOR TOPSOE A/S		

This international search report has been prepared by this International Searching Authority and is transmitted to the applicant according to Article 18. A copy is being transmitted to the International Bureau.

This international search report consists of a total of 5 sheets.

[X] It is also accompanied by a copy of each prior art document cited in this report.

1. **Basis of the report**
   a. With regard to the **language,** the international search was carried out on the basis of:
      [X] 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))
   b. [ ] This international search report has been established taking into account the **rectification of an obvious mistake** authorized by or notified to this Authority under Rule 91 (Rule 43.6*bis*(a)).
   c. [ ] With regard to any **nucleotide and/or amino acid sequence** disclosed in the international application, see Box No. I.

2. [ ] **Certain claims were found unsearchable** (See Box No. II)

3. [ ] **Unity of invention is lacking** (see Box No III)

4. With regard to the **title,**
   [X] the text is approved as submitted by the applicant
   [ ] the text has been established by this Authority to read as follows:

5. With regard to the **abstract,**
   [X] the text is approved as submitted by the applicant
   [ ] the text has been established, according to Rule 38.2, by this Authority as it appears in Box No. IV. The applicant may, within one month from the date of mailing of this international search report, submit comments to this Authority

6. With regard to the **drawings,**
   a. the figure of the **drawings** to be published with the abstract is Figure No. _____
      [ ] as suggested by the applicant
      [ ] as selected by this Authority, because the applicant failed to suggest a figure
      [ ] as selected by this Authority, because this figure better characterizes the invention
   b. [X] none of the figures is to be published with the abstract

INTERNATIONAL SEARCH REPORT

International application No
PCT/EP2018/073601

A. CLASSIFICATION OF SUBJECT MATTER
INV. C01B39/30 B01D53/94 B01J29/50 B01J29/56 C01B39/02 C07C1/20
ADD.
According to International Patent Classification (IPC) or to both national classification and IPC

B. FIELDS SEARCHED

Minimum documentation searched (classification system followed by classification symbols)
C01B B01D B01J C07C

Documentation searched other than minimum documentation to the extent that such documents are included in the fields searched

Electronic data base consulted during the international search (name of data base and, where practicable, search terms used)
EPO-Internal, WPI Data, COMPENDEX, INSPEC

C. DOCUMENTS CONSIDERED TO BE RELEVANT

Category*	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
X	JOO HYUCK LEE ET AL: "Synthesis and Characterization of ERI-Type UZM-12 Zeolites and their Methanol-to-Olefin Performance", JOURNAL OF THE AMERICAN CHEMICAL SOCIETY, AMERICAN CHEMICAL SOCIETY, US, vol. 132, no. 7, 22 September 2010 (2010-09-22), pages 12971-12982, XP002668581, ISSN: 0002-7863, DOI: 10.1021/JA105185R [retrieved on 2010-08-25]	1-4,21, 22
Y	Experimental section;	5,6
A	page 12972, right-hand column; figures 1,3; tables 1,3 page 12974 - page 12975 Catalysis; page 12973, right-hand column, paragraph third page 12977 - page 12978, left-hand column, -/--	7-20,23, 24

[X] Further documents are listed in the continuation of Box C.

[X] See patent family annex.

* Special categories of cited documents :

"A" document defining the general state of the art which is not considered to be of particular relevance

"E" earlier application or patent but published on or after the international filing date

"L" document which may throw doubts on priority claim(s) or which is cited to establish the publication date of another citation or other special reason (as specified)

"O" document referring to an oral disclosure, use, exhibition or other means

"P" document published prior to the international filing date but later than the priority date claimed

"T" later document published after the international filing date or priority date and not in conflict with the application but cited to understand the principle or theory underlying the invention

"X" document of particular relevance; the claimed invention cannot be considered novel or cannot be considered to involve an inventive step when the document is taken alone

"Y" document of particular relevance; the claimed invention cannot be considered to involve an inventive step when the document is combined with one or more other such documents, such combination being obvious to a person skilled in the art

"&" document member of the same patent family

Date of the actual completion of the international search	Date of mailing of the international search report
11 October 2018	18/10/2018

Name and mailing address of the ISA/	Authorized officer
European Patent Office, P.B. 5818 Patentlaan 2 NL - 2280 HV Rijswijk Tel. (+31-70) 340-2040, Fax: (+31-70) 340-3016	Follens, Lana

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Form PCT/ISA/210 (second sheet) (April 2005)

C(Continuation). DOCUMENTS CONSIDERED TO BE RELEVANT

Category*	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
	paragraph first; table 5 page 12979, right-hand column, last paragraph - page 12980, left-hand column, paragraph first; figures 7-10 the whole document & JOO HYUCK LEE ET AL: "Supporting info for Synthesis and Characterization of ERI-Type UZM-12 Zeolites and their Methanol-to-Olefin Performance", Asia-Pacific Journal of Chemical Engineering, 22 September 2010 (2010-09-22), pages 596-605, XP055513517, Chichester, UK DOI: 10.1002/apj.453 Retrieved from the Internet: URL:https://pubs.acs.org/doi/suppl/10.1021 /ja105185r/suppl_file/ja105185r_si_001.pdf [retrieved on 2018-10-09] figures S1,S3, S5 the whole document -----	
X	JIE ZHU ET AL: "Ultrafast synthesis of high-silica erionite zeolites with improved hydrothermal stability", CHEMICAL COMMUNICATIONS, vol. 53, no. 50, 24 May 2017 (2017-05-24), pages 6796-6799, XP055513320, ISSN: 1359-7345, DOI: 10.1039/C7CC03166A	1-4,7-24
A	page 6797, left-hand column, paragraph third; figures 1-2,5 page 6798, right-hand column, last paragraph page 6796, right-hand column, paragraph second page 6798, right-hand column, paragraph third - page 6799, left-hand column, paragraph first page 6799, right-hand column, paragraph first the whole document -/--	5,6

C(Continuation). DOCUMENTS CONSIDERED TO BE RELEVANT

Category*	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
	& Jie Zhu ET AL: "Supporting information for Ultrafast synthesis of high-silica erionite zeolites with improved hydrothermal stability", Chemical communications (Cambridge, England), 24 May 2017 (2017-05-24), pages 6796-6799, XP055513700, England DOI: 10.1039/C7CC03166A Retrieved from the Internet: URL:http://www.rsc.org/suppdata/c7/cc/c7cc03166a/c7cc03166a1.pdf [retrieved on 2018-10-09] figures S3,S6; table S2	

X	MARTÍN NURIA ET AL: "Cage-based small-pore catalysts for NH3-SCR prepared by combining bulky organic structure directing agents with modified zeolites as reagents", APPLIED CATALYSIS B: ENVIRONMENTAL, ELSEVIER, AMSTERDAM, NL, vol. 217, 29 May 2017 (2017-05-29), pages 125-136, XP085112832, ISSN: 0926-3373, DOI: 10.1016/J.APCATB.2017.05.082	1-4,6-24
Y	Point 2. Experimental;	6
A	page 127 - page 128; figures 2,4; tables 1,3,4 page 125, right-hand column, paragraph first 2.5 Catalytic testing; page 129, left-hand column 3.2 Catalytic performance in NH3-SCR of NO; page 131, left-hand column - page 135, left-hand column the whole document	5

X	US 2006/073094 A1 (MILLER MARK A [US] ET AL) 6 April 2006 (2006-04-06)	1-24
Y	paragraphs [0006], [0015] - [0018], [0020] - [0022], [0042] - [0049]; examples 1-14 the whole document	5

A	US 2016/001273 A1 (XIE DAN [US] ET AL) 7 January 2016 (2016-01-07) cited in the application paragraphs [0053] - [0087]; examples 22,23 the whole document	1-24

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INTERNATIONAL SEARCH REPORT

Information on patent family members

International application No
PCT/EP2018/073601

Patent document cited in search report	Publication date	Patent family member(s)	Publication date
US 2006073094 A1	06-04-2006	CN 101072728 A	14-11-2007
		EP 1797005 A2	20-06-2007
		JP 5498658 B2	21-05-2014
		JP 2008515760 A	15-05-2008
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		US 2006073094 A1	06-04-2006
		WO 2006137900 A2	28-12-2006
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		CA 2949762 A1	07-01-2016
		CN 106470945 A	01-03-2017
		EP 3164362 A1	10-05-2017
		JP 2017530006 A	12-10-2017
		US 2016001273 A1	07-01-2016
		WO 2016003504 A1	07-01-2016