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(71) Applicant: **BASF SE** [DE/DE]; 67056 Ludwigshafen (DE).

(71) Applicant (*for MN only*): **BASF (CHINA) COMPANY LIMITED** [CN/CN]; 300 Jiangxinsha Road, Pudong, Shanghai 200137 (CN).

(71) Applicant: **TOKYO INSTITUTE OF TECHNOLOGY** [JP/JP]; 2-12-1 Ookayama, Meguro-ku, Tokyo 152-8550 (JP).

(72) Inventors: **FEYEN, Mathias**; Talstrasse 1 A, 69493 Hirschberg (DE). **SPANNHOFF, Kirsten**; Rohrlachstr. 25, 67063 Ludwigshafen (DE). **MÜLLER, Ulrich**; Am Stecken 14a, 67435 Neustadt (DE). **BAO, Xinhe**; 457 Zhong Shan Road, Dalian, 116011 (CN). **ZHANG, Weiping**; No. 27-3-301 Xin Xin Yuan, Dalian City North Gate Duit, 116023 (CN). **DE VOS, Dirk**; Bergestraat 17, B-3220 Holsbeek (BE). **GIES, Hermann**; Alte Bergstr. 66, 45549 Sprockhövel (DE). **TATSUMI, Takashi**; 4-30-2 Kamiasao, Asao-ku, Kawasaki, 215-0021 (JP). **XIAO, Feng-Shou**; 1-10# Mingde Road 22, Changchun, 130023 (CN). **TOSHIYUKI, Yokoi**; 2-12-1, Ookayama, Me-

guro-ku, Tokyo, 1528550 (JP). **BILGE, Yilmaz**; 87 Christopher Street Apt. 7, New York, New York 10014 (US).

(74) Agent: **ALTMANN, Andreas**; Herzog Fiesser & Partner, Patent Attorneys PartG mbB, Isartorplatz 1, 80331 Munich (DE).

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(54) Title: METAL DOPED SILICATE CATALYSTS FOR THE SELECTIVE CONVERSION OF ETHANOL TO BUTADIENE

(57) Abstract: A process for the preparation of butadiene comprising (i) providing a gas stream G-1 comprising ethanol; (ii) contacting the gas stream G-1 provided in (i) with a catalyst, thereby obtaining a gas stream G-2 comprising butadiene; wherein the catalyst comprises a crystalline material supporting one or more catalytically active metals M, as well as to the use of the crystalline material supporting one or more catalytically active metals M.



INTERNATIONAL SEARCH REPORT

International application No.

PCT/IB2014/062202

A. CLASSIFICATION OF SUBJECT MATTER

C07C 1/20(2006.01)i

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)

C07C 1/-

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)

WPI,EPODOC,CNPAT,CNKI,CA,ISI Web of Knowledge, Elsevier Science Direct, Google Scholar, BASF, butadiene, ethanol, crystal+, support+, catalyst+, framework, zeolit+, acetaldehyde, bridg+, pillar+

C. DOCUMENTS CONSIDERED TO BE RELEVANT

Category*	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
X	MAKSHINA E.V.et al. "Catalytic study of the conversion of ethanol into 1, 3-butadiene, " <i>Catalysis Today</i> , , No. Vol.198, , 21 June 2012 (2012-06-21), abstract, Fig. 2, tables 1-3, and page 340, left column, 2.1catalysts preparation	1-40
X	CN 102918009 A (SUMITOMO RUBBER IND. LTD.) 06 February 2013 (2013-02-06) description page 4 paragraphs 0066-0067, 0073 and 0077-0078	1-40
A	US 2421361 A (CARBIDE & CARBON CHEM. CORP.) 27 May 1947 (1947-05-27) example1	1-40
A	GB 331482 A (SERGE VASSILIEWITSCH LEBEDEV) 30 June 1930 (1930-06-30) claims 1-4	1-40
A	CN 1962573 A (CHINA NAT. CHEM. ENG. GROUP CORP. ET AL.) 16 May 2007 (2007-05-16) description pages 4-5	1-40
A	US 2013123554 A1 (ORDOMSKIY VITALY VALERIEVICH ET AL.) 16 May 2013 (2013-05-16) abstract, claims 1-20	1-40

☐ Further documents are listed in the continuation of Box C.☒ 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	"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
"E"	earlier application or patent but published on or after the international filing date	"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
"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)	"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
"O"	document referring to an oral disclosure, use, exhibition or other means	"&"	document member of the same patent family
"P"	document published prior to the international filing date but later than the priority date claimed		

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STATE INTELLECTUAL PROPERTY OFFICE OF THE
P.R.CHINA(ISA/CN)
6,Xitucheng Rd., Jimen Bridge, Haidian District, Beijing
100088, China

Authorized officer

WEN,Mei

Facsimile No. (86-10)62019451

Telephone No. (86-10)62414142

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Information on patent family members

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