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(54) Title: GELCASTING OF A CERAMIC CATALYST CARRIER

(57) Abstract: A method of fabricating a catalyst carrier, comprises forming a slurry of ceramic particles in a liquid carrier, the liquid carrier comprising a binder species, applying the dispersion to a non-sacrificial mould surface having formations provided therein or thereon, causing the binder species to set to provide a green form, removing the green form from the mould surface, drying and firing the green form, wherein the setting of the binder species to provide a green form which is removeable from the mould surface, preferably, takes less than 120 minutes. Catalyst carriers and tape casting apparatus for making the same are also disclosed.

INTERNATIONAL SEARCH REPORT

International application No
PCT/GB2005/003472

A. CLASSIFICATION OF SUBJECT MATTER
INV. C04B35/624 C04B35/634

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)
C04B F01N

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 practical, search terms used)
EPO-Internal, WPI Data, INSPEC, COMPENDEX, PAJ

C. DOCUMENTS CONSIDERED TO BE RELEVANT

Category*	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
X	GU Y ET AL: "Porous YSZ ceramics by water-based gelcasting" CERAMICS INTERNATIONAL, ELSEVIER, AMSTERDAM, NL, vol. 25, no. 8, December 1999 (1999-12), pages 705-709, XP004362783 ISSN: 0272-8842 page 706; figure 3 page 709, left-hand column, last paragraph	1-13, 15-17, 20-30, 32-34
X	ABANOZ D ET AL: "Gelcasting of Pb(Zr,Ti)O ₃ based piezoelectric ceramics" KEY ENGINEERING MATERIALS TRANS TECH PUBLICATIONS SWITZERLAND, vol. 264-268, 2004, pages 1293-1296, XP008058788 ISSN: 1013-9826 page 1294 - page 1296	1-17, 20-30, 32-34
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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

"E" earlier document 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

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"&" document member of the same patent family

Date of the actual completion of the international search 24 January 2006	Date of mailing of the international search report 03 -07- 2006
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Name and mailing address of the ISA European Patent Office, P.B. 5818 Patentlaan 2 NL - 2280 HV Rijswijk Tel. (+31-70) 340-2040, Tx. 31 651 epo nl, Fax: (+31-70) 340-3016	Authorized officer Raming, T
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INTERNATIONAL SEARCH REPORT

International application No

PCT/GB2005/003472

C(Continuation). DOCUMENTS CONSIDERED TO BE RELEVANT

Category*	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
X	US 6 228 299 B1 (JANNEY MARK A ET AL) 8 May 2001 (2001-05-08) examples 1-10; table 1 -----	1-17, 20-32,34
X	DE 202 17 780 U1 (BAYER, MICHAEL) 10 April 2003 (2003-04-10) examples 1,2 -----	1-13, 15-17, 20-30, 32,34
X	DATABASE WPI Section Ch, Week 200380 Derwent Publications Ltd., London, GB; Class A97, AN 2003-861735 XP002364101 & KR 2003 057 134 A (KOREA INST MACHINERY & MATERIALS) 4 July 2003 (2003-07-04) abstract -----	1-13, 15-17, 20-30, 32,34
X	US 2004/057894 A1 (KLETT JAMES W ET AL) 25 March 2004 (2004-03-25) paragraph [0057]; example 1 -----	1-6, 8-13, 15-17, 20-30, 32,34
X	US 2001/033039 A1 (LAUF ROBERT J ET AL) 25 October 2001 (2001-10-25) examples 4,5 -----	1-13, 15-17, 20-30, 32-34
X	US 2003/190275 A1 (MIYAZAWA SUGIO ET AL) 9 October 2003 (2003-10-09) paragraph [0226]; example 15; tables 2(A7),7 -----	1-6, 9-13, 15-17, 20-30, 32,34
X	EP 1 306 148 A (CERAMETAL S.A.R.L.) 2 May 2003 (2003-05-02) example 2 -----	1-6, 9-13, 15-17, 20-30, 32,34
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INTERNATIONAL SEARCH REPORT

International application No.
PCT/GB2005/003472

Box II Observations where certain claims were found unsearchable (Continuation of item 2 of first sheet)

This International Search Report has not been established in respect of certain claims under Article 17(2)(a) for the following reasons:

1. Claims Nos.:
because they relate to subject matter not required to be searched by this Authority, namely:

2. Claims Nos.:
because they relate to parts of the International Application that do not comply with the prescribed requirements to such an extent that no meaningful International Search can be carried out, specifically:

3. Claims Nos.:
because they are dependent claims and are not drafted in accordance with the second and third sentences of Rule 6.4(a).

Box III Observations where unity of invention is lacking (Continuation of item 3 of first sheet)

This International Searching Authority found multiple inventions in this international application, as follows:

see additional sheet

1. As all required additional search fees were timely paid by the applicant, this International Search Report covers all searchable claims.

2. As all searchable claims could be searched without effort justifying an additional fee, this Authority did not invite payment of any additional fee.

3. As only some of the required additional search fees were timely paid by the applicant, this International Search Report covers only those claims for which fees were paid, specifically claims Nos.:

4. No required additional search fees were timely paid by the applicant. Consequently, this International Search Report is restricted to the invention first mentioned in the claims; it is covered by claims Nos.:

1-35-----

Remark on Protest

- The additional search fees were accompanied by the applicant's protest.
- No protest accompanied the payment of additional search fees.

FURTHER INFORMATION CONTINUED FROM PCT/ISA/ 210

This International Searching Authority found multiple (groups of) inventions in this international application, as follows:

1. claims: 1-35

A method for fabricating a ceramic catalyst carrier, using gel casting, and the ceramic catalyst carriers resulting from this method.

2. claims: 36-38

A tape casting apparatus and a method of tape casting.

INTERNATIONAL SEARCH REPORT

International application No

PCT/GB2005/003472

C(Continuation). DOCUMENTS CONSIDERED TO BE RELEVANT		
Category*	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
X	<p>SANTACRUZ I ET AL: "Improved green properties of gelcast alumina through multiple synergistic interaction of polysaccharides" JOURNAL OF THE EUROPEAN CERAMIC SOCIETY, ELSEVIER SCIENCE PUBLISHERS, BARKING, ESSEX, GB, vol. 23, no. 11, October 2003 (2003-10), pages 1785-1793, XP004424272 ISSN: 0955-2219 page 1787, right-hand column, last paragraph - page 1788, right-hand column, paragraph 6</p> <p style="text-align: center;">-----</p>	1-4, 9-13, 15-17, 20-28, 30,32,34
X	<p>SANTACRUZ I ET AL: "Aqueous injection moulding of porcelains" JOURNAL OF THE EUROPEAN CERAMIC SOCIETY, ELSEVIER SCIENCE PUBLISHERS, BARKING, ESSEX, GB, vol. 23, no. 12, November 2003 (2003-11), pages 2053-2060, XP004428442 ISSN: 0955-2219 page 2054, right-hand column, paragraph 3 - page 2056, left-hand column, paragraph 1; figure 10</p> <p style="text-align: center;">-----</p>	1-4, 9-13, 15-17, 20-28, 30,32,34
X	<p>JIA Y ET AL: "Fabrication of alumina green body through gelcasting process using alginate" MATERIALS LETTERS, NORTH HOLLAND PUBLISHING COMPANY, AMSTERDAM, NL, vol. 57, no. 16-17, May 2003 (2003-05), pages 2530-2534, XP004418466 ISSN: 0167-577X page 2531, paragraph 1; figures 1,2 page 2533; tables 1,2</p> <p style="text-align: center;">-----</p>	1-6, 8-13, 15-17, 20-30, 32,34
X	<p>US 2002/045541 A1 (KOIKE KAZUHIKO ET AL) 18 April 2002 (2002-04-18) figure 3; example 4; table 1</p> <p style="text-align: center;">-----</p>	32,34,35
X	<p>EP 0 283 220 A (NGK INSULATORS, LTD) 21 September 1988 (1988-09-21) page 4, lines 4,5; figure 3a</p> <p style="text-align: center;">-----</p>	32,34,35

INTERNATIONAL SEARCH REPORT

Information on patent family members

International application No

PCT/GB2005/003472

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