

PATENT COOPERATION TREATY

PCT

INTERNATIONAL SEARCH REPORT

(PCT Article 18 and Rules 43 and 44)

Applicant's or agent's file reference 32342-3086	FOR FURTHER ACTION see Form PCT/ISA/220 as well as, where applicable, item 5 below		
International application No. PCT/CA2015/050923	<table style="width: 100%; border-collapse: collapse;"> <tr> <td style="width: 50%; border-right: 1px solid black; padding: 5px;"> International filing date (<i>day/month/year</i>) 21 September 2015 (21-09-2015) </td> <td style="padding: 5px;"> (Earliest)Priority date (<i>day/month/year</i>) 21 September 2014 (21-09-2014) </td> </tr> </table>	International filing date (<i>day/month/year</i>) 21 September 2015 (21-09-2015)	(Earliest)Priority date (<i>day/month/year</i>) 21 September 2014 (21-09-2014)
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Applicant HATCH LTD.			

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 3 sheets.

☒ 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:

- ☒ 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 43.6bis(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**,

- ☒ 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**,

- ☒ 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. 1

- ☒ 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. ☐ none of the figures is to be published with the abstract.

INTERNATIONAL SEARCH REPORT

International application No.

PCT/CA2015/050923A. CLASSIFICATION OF SUBJECT MATTER
IPC: **B01J 2/04** (2006.01)

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)

B01J 2/04 (2006.01), **B22F 9/00** (2006.01), **C04B 5/02** (2006.01)

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

Electronic database(s) consulted during the international search (name of database(s) and, where practicable, search terms used)
Questel, FamPat and Canadian Patent Database keywords: off_gas; atomi#ation; granula+; dispers+; molten (slag or metal)

C. DOCUMENTS CONSIDERED TO BE RELEVANT

Category*	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
A	US 4,385,878 (ASEA Aktiebolag) 31 May 1983 (31-05-1983) *abstract; Figures 1 & 2; col. 1, lines 10-52; col. 2, lines 44-59*	1-31
A	US 2008/0271568 A1 (Atomising Systems Ltd.) 06 November 2008 (06-11-2008) *abstract; Figure*	1-31
A	US 4,233,007 (Uddeholms Aktiebolag) 11 November 1980 (11-11-1980) *abstract; Figure 1; col. 1, lines 38-56*	1-31
A	US 3,951,577 (Hitachi Ltd.) 20 April 1976 (20-04-1976) *abstract; col. 3, lines 16-27; claim 7*	1-31
A	US 6,082,640 (Holderbank Financiere Glarus AG) 04 July 2000 (04-07-2000) *abstract; Figure 1; col. 5, lines 37-41*	1-31

☐ Further documents are listed in the continuation of Box C.
 ☒ See patent family annex.

* Special categories of cited documents:	"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
"A" document defining the general state of the art which is not considered to be of particular relevance	"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
"E" earlier application or patent but published on or after the international filing date	"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
"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)	"&" document member of the same patent family
"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	

Date of the actual completion of the international search
05 November 2015 (05-11-2015)Date of mailing of the international search report
19 November 2015 (19-11-2015)Name and mailing address of the ISA/CA
Canadian Intellectual Property Office
Place du Portage I, C114 - 1st Floor, Box PCT
50 Victoria Street
Gatineau, Quebec K1A 0C9
Facsimile No.: 001-819-953-2476

Authorized officer

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INTERNATIONAL SEARCH REPORT
Information on patent family members

International application No.
PCT/CA2015/050923

Patent Document Cited in Search Report	Publication Date	Patent Family Member(s)	Publication Date
US4385878A	31 May 1983 (31-05-1983)	US4385878A AU528552B2 AU4895079A BR7904670A CA1125964A DE2962800D1 EP0007536A1 EP0007536B1 ES482659A1 JPS5518593A SE7808028L SE412712B US4382903A	31 May 1983 (31-05-1983) 05 May 1983 (05-05-1983) 24 January 1980 (24-01-1980) 15 April 1980 (15-04-1980) 22 June 1982 (22-06-1982) 01 July 1982 (01-07-1982) 06 February 1980 (06-02-1980) 12 May 1982 (12-05-1982) 01 September 1980 (01-09-1980) 08 February 1980 (08-02-1980) 23 January 1980 (23-01-1980) 17 March 1980 (17-03-1980) 10 May 1983 (10-05-1983)
US2008271568A1	06 November 2008 (06-11-2008)	US2008271568A1 GB0708385D0 GB0805750D0 GB2448965A	06 November 2008 (06-11-2008) 06 June 2007 (06-06-2007) 30 April 2008 (30-04-2008) 05 November 2008 (05-11-2008)
US4233007A	11 November 1980 (11-11-1980)	US4233007A ATA959575A AT347991B BR7508333A DE2555715A1 DE2555715C2 FR2294787A1 FR2294787B1 GB1528964A IT1052810B JPS51108659A JPS5910961B2 SE7415957L SE394604B	11 November 1980 (11-11-1980) 15 June 1978 (15-06-1978) 25 January 1979 (25-01-1979) 08 September 1976 (08-09-1976) 01 July 1976 (01-07-1976) 05 June 1985 (05-06-1985) 16 July 1976 (16-07-1976) 30 April 1981 (30-04-1981) 18 October 1978 (18-10-1978) 20 July 1981 (20-07-1981) 27 September 1976 (27-09-1976) 13 March 1984 (13-03-1984) 21 June 1976 (21-06-1976) 04 July 1977 (04-07-1977)
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