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(71) Applicants and

(72) Inventors: **PARK, Chul, B.** [CA/CA]; 44 Wilgar Road, Etobicoke, Ontario M8X 1J5 (CA). **XU, Xiang** [CA/CA]; 4328 Jenkins Cres., Mississauga, Ontario L5R 1V3 (CA).

(74) Agent: **CARTON, Kevin, J.**; Moffat & Co., 427 Laurier Avenue West, 12th Floor, P.O. Box 2088, Station D, Ottawa, Ontario K1P 5W3 (CA).

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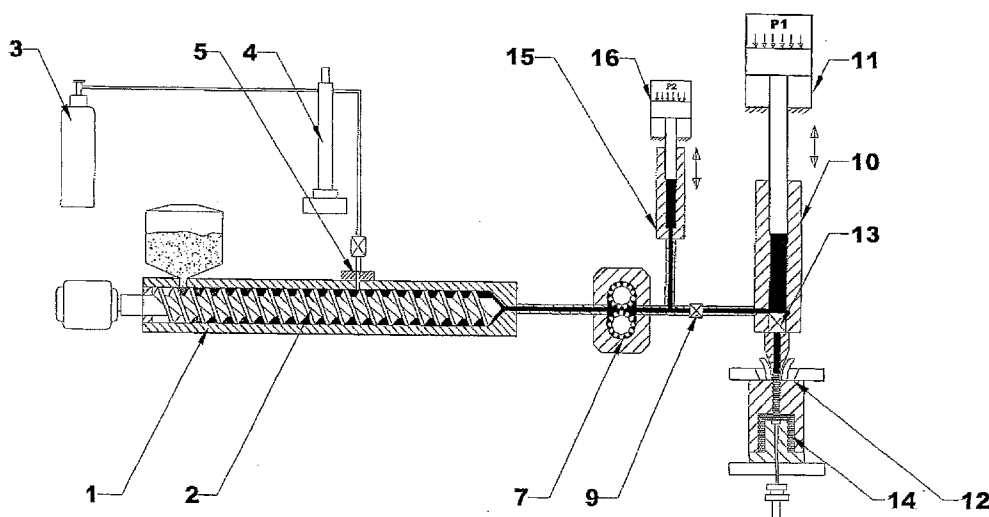
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For two-letter codes and other abbreviations, refer to the "Guidance Notes on Codes and Abbreviations" appearing at the beginning of each regular issue of the PCT Gazette.

(54) Title: APPARATUS AND METHOD FOR ADVANCED STRUCTURAL FOAM MOLDING



Schematic of System Configuration Option 1

(57) Abstract: An advanced structural foam molding technology for improving the dispersion of the blowing agent in the polymer matrix has been invented. This technological innovation is an Improvement on the well-known existing low-pressure structural foam molding technology based on the preplasticating-type (so called piggy-bag) injection-molding machines. By introducing means for continuing the polymer matrix melt flow stream, preferably an additional accumulator and a gear pump, the processing conditions become more consistent to disperse the injected gas more uniformly in the polymer matrix. By using this technology, the structural foams have a smaller cell size, a more uniform cell structure, a larger void fraction (i.e., more material saving), less surface swirl, and less weld line contrast.

WO 2007/026257 A3

INTERNATIONAL SEARCH REPORT

International application No.
PCT/IB2006/003364

A. CLASSIFICATION OF SUBJECT MATTER
IPC: **B29C 45/47** (2006.01) , **B29C 44/02** (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)
IPC: **B29C 45/*** (2006.01) , **B29C 44/*** (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)
Delphion, Derwent, Questel-Orbit (Pluspat), US PTO, CPD with key words, such as: injection, extrusion, foam, foamed, foaming, blowing agent, gas, nucleating, accumulator, accumulating, accumulation, pot, injector and plunger.

C. DOCUMENTS CONSIDERED TO BE RELEVANT

Category*	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
X	CA 2284517 A1 (TREECE, L. C. et al.) 24 September 1998 (24-09-1998) *figs.1-2; page 14, line 14 - page 20, line 15	1-12, 15-16, 18-20, 22-28, 33 and 35-41
A	US 4124308 (SOKOLOW, N. N.) 7 November 1978 (07-11-1978) *whole document*	1-41
A	US 6322347 B1 (XU, J.) 27 November 2001 (27-11-2001) *cited by applicant* *whole document*	1-41

☐ 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
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"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

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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

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Pengfei Zhang 819- 953-0654

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Information on patent family members

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