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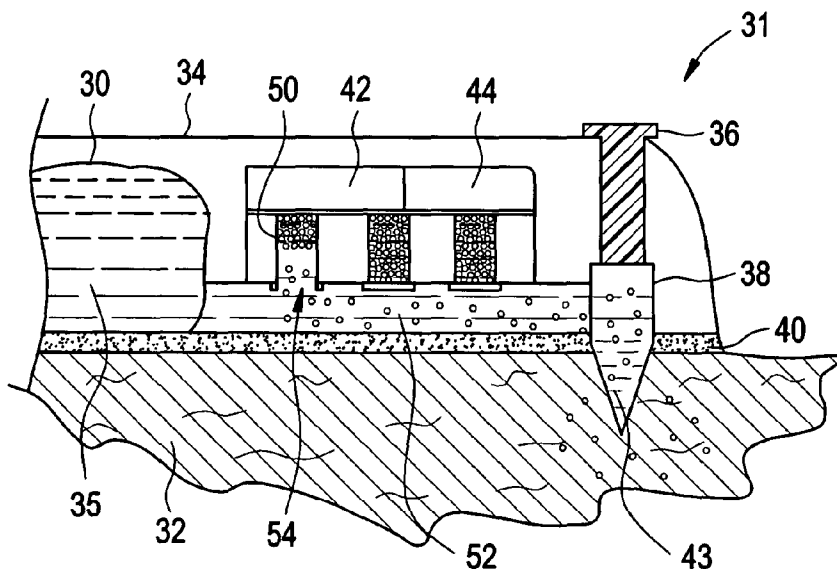
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[Continued on next page]

(54) Title: MULTI-RESERVOIR PUMP DEVICE FOR DIALYSIS, BIOSENSING, OR DELIVERY OF SUBSTANCES



(57) Abstract: A pump patch device is provided for drug delivery. The device may include a substrate having a plurality of discrete reservoirs, each reservoir having a reservoir opening; a drug disposed in the reservoirs; a pump for delivering a carrier fluid through or adjacent to the reservoir openings; a flow channel for receiving and combining the carrier fluid from the pump with the drug from the reservoirs to form a fluidized drug; and a needle for delivering the fluidized drug into the skin or another biological tissue of a patient. A device is provided for use in dialysis that includes a non-disposable module including a pump or pressure generator; and a disposable cassette operably connected to the pump or pressure generator and including a plurality of discrete reservoirs containing drug and sensors. A fluidics connection device is provided that includes a compression cold weld seal for a microfluidic via.

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— *before the expiration of the time limit for amending the claims and to be republished in the event of receipt of amendments*

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**INTERNATIONAL SEARCH REPORT**

International application No  
PCT/US2007/073271

**A. CLASSIFICATION OF SUBJECT MATTER**  
INV. A61M37/00 A61M5/14

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)  
A61K A61M

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

**C. DOCUMENTS CONSIDERED TO BE RELEVANT**

Category*	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
X	WO 2006/015299 A (MICROCHIPS INC [US]; SANTINI JR JOHN T [US]; STAPLES MARK ANDREW [US];) 9 February 2006 (2006-02-09) figures 1-6 page 4, line 10 - page 24, line 34	1-5, 12, 13, 18-21
X	WO 01/35928 A (MICROCHIPS INC [US]) 25 May 2001 (2001-05-25) cited in the application figures 1-12 page 5, line 13 - page 31, line 25	1-4, 8, 12, 18-21
X	US 5 527 288 A (GROSS JOSEPH [IE] ET AL) 18 June 1996 (1996-06-18) figures 1-14 column 6, line 52 - column 10, line 48	1, 6, 12, 13
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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	*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 document 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	*Z* document member of the same patent family
*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  29 October 2007	Date of mailing of the international search report  20/02/2008
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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  Reinbold, Sylvie
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INTERNATIONAL SEARCH REPORT

International application No  
PCT/US2007/073271

C(Continuation). DOCUMENTS CONSIDERED TO BE RELEVANT

Category*	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
A	US 6 611 707 B1 (PRAUSNITZ MARK R [US] ET AL) 26 August 2003 (2003-08-26) figures 1-5 column 4, line 20 - column 10, line 36 -----	1-12, 18-21

INTERNATIONAL SEARCH REPORT

International application No.  
PCT/US2007/073271

Box No. 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.: 14-17  
because they relate to subject matter not required to be searched by this Authority, namely:  
see FURTHER INFORMATION sheet PCT/ISA/210
- 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 No. 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 allsearchable claims.
- 2.  As all searchable claims could be searched without effort justifying an additional fees, this Authority did not invite payment of additional fees.
- 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.:  
see additional sheet(s)

Remark on Protest

- The additional search fees were accompanied by the applicant's protest and, where applicable, the payment of a protest fee.
- The additional search fees were accompanied by the applicant's protest but the applicable protest fee was not paid within the time limit specified in the invitation.
- No protest accompanied the payment of additional search fees.

**FURTHER INFORMATION CONTINUED FROM PCT/ISA/ 210**

Continuation of Box II.1

Claims Nos.: 14-17

The method of claims 14-17 is for delivering a drug into a patient. This is a method for treatment of human body which is during a medical therapy.

This method is forming part of a therapeutical porcedure and therefore not be regarded as an invention which is susceptible of industrial application.

The application does not meet the requirement of Rule 39.1 (iv), because these claims are method of treatment of the human body.

FURTHER INFORMATION CONTINUED FROM PCT/ISA/ 210

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

1. claims: 1-13,18-21

These claims essentially define a device comprising:  
- a plurality of reservoirs, each reservoir having at least one reservoir opening  
- a drug disposed in the reservoirs  
- a pump  
(technical effect: provide a device capable of storing drug in a solid form and then delivering drug continually)  
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2. claims: 22-25

These claims essentially define a fluidics connection device comprising:  
- a first substrate portion  
- a nipple connector  
- a compression cold weld seal  
(technical effect: to provide a hermetic connection between fluidic structures)  
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# INTERNATIONAL SEARCH REPORT

Information on patent family members

International application No  
PCT/US2007/073271

Patent document cited in search report	Publication date	Patent family member(s)	Publication date
WO 2006015299	A	09-02-2006	NONE
WO 0135928	A	25-05-2001	AU 770395 B2 19-02-2004 AU 1616201 A 30-05-2001 CA 2392006 A1 25-05-2001 EP 1229901 A1 14-08-2002 JP 2003513755 T 15-04-2003 JP 2006328083 A 07-12-2006
US 5527288	A	18-06-1996	NONE
US 6611707	B1	26-08-2003	US 2003208167 A1 06-11-2003