



(51) International Patent Classification:

F24F 13/28 (2006.01) *B01D 46/12* (2006.01)
B01D 53/14 (2006.01)

(21) International Application Number:

PCT/US2012/024333

(22) International Filing Date:

8 February 2012 (08.02.2012)

(25) Filing Language:

English

(26) Publication Language:

English

(30) Priority Data:

13/024,214 9 February 2011 (09.02.2011) US

(71) Applicant (for all designated States except US): **EN-
VERID SYSTEMS, INC.** [US/US]; 141 Hartman Road,
Newton, MA 02459 (US).

(72) Inventors; and

(75) Inventors/Applicants (for US only): **MEIRAV, Udi**
[US/US]; 141 Hartman Road, Newton, MA 02459 (US).
BIRAN, Israel [IL/IL]; Harotem St. 7, 42910 Avihayil
(IL).

(74) Agents: **HOPKINS, Brian P.** et al.; Mintz Levin Cohn
Ferris Glovsky And Popeo, P.C., Chrysler Center, 666
Third Avenue, New York, NY 10017 (US).

(81) Designated States (unless otherwise indicated, for every
kind of national protection available): AE, AG, AL, AM,

AO, AT, AU, AZ, BA, BB, BG, BH, BR, BW, BY, BZ,
CA, CH, CL, CN, CO, CR, CU, CZ, DE, DK, DM, DO,
DZ, EC, EE, EG, ES, FI, GB, GD, GE, GH, GM, GT, HN,
HR, HU, ID, IL, IN, IS, JP, KE, KG, KM, KN, KP, KR,
KZ, LA, LC, LK, LR, LS, LT, LU, LY, MA, MD, ME,
MG, MK, MN, MW, MX, MY, MZ, NA, NG, NI, NO, NZ,
OM, PE, PG, PH, PL, PT, QA, RO, RS, RU, RW, SC, SD,
SE, SG, SK, SL, SM, ST, SV, SY, TH, TJ, TM, TN, TR,
TT, TZ, UA, UG, US, UZ, VC, VN, ZA, ZM, ZW.

(84) Designated States (unless otherwise indicated, for every
kind of regional protection available): ARIPO (BW, GH,
GM, KE, LR, LS, MW, MZ, NA, RW, SD, SL, SZ, TZ,
UG, ZM, ZW), Eurasian (AM, AZ, BY, KG, KZ, MD, RU,
TJ, TM), European (AL, AT, BE, BG, CH, CY, CZ, DE,
DK, EE, ES, FI, FR, GB, GR, HR, HU, IE, IS, IT, LT, LU,
LV, MC, MK, MT, NL, NO, PL, PT, RO, RS, SE, SI, SK,
SM, TR), OAPI (BF, BJ, CF, CG, CI, CM, GA, GN, GQ,
GW, ML, MR, NE, SN, TD, TG).

Published:

— with international search report (Art. 21(3))

(88) Date of publication of the international search report:

6 December 2012

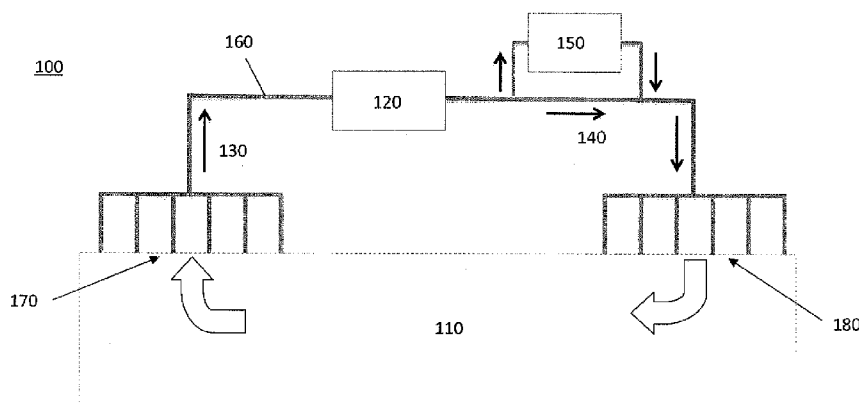
(15) Information about Correction:

Previous Correction:

see Notice of 11 October 2012

(54) Title: MODULAR, HIGH-THROUGHPUT AIR TREATMENT SYSTEM

FIG. 1



(57) Abstract: Air treatment modules, systems and methods for removing contaminants from indoor air are provided. Device embodiments may include one or more air inlets, one or more air outlets and a plurality of inserts which each include at least one adsorbent material. The inserts may be arranged separate from each other to form a plurality of substantially parallel air flow paths between the one or more air inlets and one or more air outlets. The adsorbent material may be arranged for regeneration within the air treatment module using thermal swing desorption and/or pressure swing desorption. Related systems, methods and articles of manufacture are also described.



A. CLASSIFICATION OF SUBJECT MATTER***F24F 13/28(2006.01)i, B01D 53/14(2006.01)i, B01D 46/12(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)

F24F 13/28; B01D 53/02; B01D 46/42; B01D 53/04

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

Korean utility models and applications for utility models

Japanese utility models and applications for utility models

Electronic data base consulted during the international search (name of data base and, where practicable, search terms used)

eKOMPASS(KIPO internal) & Keywords: air treatment module, air treatment system, insert

C. DOCUMENTS CONSIDERED TO BE RELEVANT

Category*	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
Y	US 5964927 A (GRAHAM, KRISTINE M. et al.) 12 October 1999 See column 3, line 60 - column 6, line 21; column 8 lines 8-64 and figures 1-6.	1-20
Y	JP 2001-232127 A (MATSUSHITA SEIKO CO., LTD.) 28 August 2001 See abstract and figure 1.	1-20
A	US 2004-0118287 A1 (STEPHEN MOSHEIM JAFFE et al.) 24 June 2004 See paragraph [0048], claims 1,18 and figure 4.	1-20



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 application or patent 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 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

"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

"&" document member of the same patent family

Date of the actual completion of the international search

04 SEPTEMBER 2012 (04.09.2012)

Date of mailing of the international search report

05 SEPTEMBER 2012 (05.09.2012)

Name and mailing address of the ISA/KR

Korean Intellectual Property Office
189 Cheongsu-ro, Seo-gu, Daejeon Metropolitan
City, 302-701, Republic of Korea

Facsimile No. 82-42-472-7140

Authorized officer

KIM, JAE CHUL

Telephone No. 82-42-481-5619



INTERNATIONAL SEARCH REPORT

Information on patent family members

International application No.

PCT/US2012/024333

Patent document cited in search report	Publication date	Patent family member(s)	Publication date
US 5964927 A	12.10.1999	US 06113674A A WO 99-02242 A1	05.09.2000 21.01.1999
JP 2001-232127 A	28.08.2001	None	
US 2004-0118287 A1	24.06.2004	AT 380576 T CA 2437054 A1 DE 60317994 D1 DE 60317994 T2 EP 1413348 A1 EP 1413348 B1 ES 2294228 T3 US 7077891 B2	15.12.2007 13.02.2004 24.01.2008 03.04.2008 28.04.2004 12.12.2007 01.04.2008 18.07.2006