



(51) International Patent Classification:

B01D 53/26 (2006.01) **B01D 53/14** (2006.01)
F25D 17/06 (2006.01) **F25D 23/00** (2006.01)

(21) International Application Number:

PCT/SG2011/000028

(22) International Filing Date:

21 January 2011 (21.01.2011)

(25) Filing Language:

English

(26) Publication Language:

English

(30) Priority Data:

61/297,347 22 January 2010 (22.01.2010) US

(72) Inventors; and

(71) **Applicants** : **NG, Kim Choon** [SG/SG]; National University of Singapore, Faculty of Engineering, Department of Mechanical Engineering, 21 Lower Kent Ridge Road, Singapore 119077 (SG). **MYAT, Aung** [MM/SG]; National University of Singapore, Faculty of Engineering, Department of Mechanical Engineering, 21 Lower Kent Ridge Road, Singapore 119077 (SG). **HIDEHARU, Yanagi** [JP/SG]; National University of Singapore, Faculty of Engineering, Department of Mechanical Engineering, 21 Lower Kent Ridge Road, Singapore 119077 (SG). **THU, Kyaw** [MM/SG]; National University of Singapore, Faculty of Engineering, Department of Mechanical Engineering, 21 Lower Kent Ridge Road, Singapore 119077 (SG). **SAHA, Bidyut, Baran** [BD/SG]; National University of Singapore, Faculty of Engineering, Department of Mechanical Engineering, 21 Lower Kent Ridge Road, Singapore 119077 (SG). **LEONG, Ivan** [SG/SG]; National University of Singapore, Faculty of Engineering,

Department of Mechanical Engineering, 21 Lower Kent Ridge Road, Singapore 119077 (SG).

(74) **Agent**: **ONG, Kheng Lu, Lucille Frances**; Marks & Clerk Singapore LLP, Tanjong Pagar, PO Box 636, Singapore 910816 (SG).

(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, RO, RS, RU, 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, 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).

Declarations under Rule 4.17:

— *of inventorship* (Rule 4.17(iv))

Published:

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

(54) **Title**: A DEHUMIDIFIER AND A METHOD OF DEHUMIDIFICATION

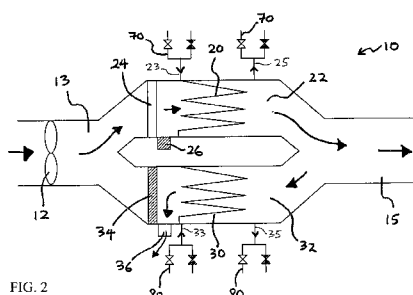


FIG. 2

(57) **Abstract**: A dehumidifier configured for alternately cycling between a first operating configuration and a second operating configuration. The dehumidifier comprises a first desiccant bed configured for performing adsorption in the first operating configuration and for performing desorption in the second operating configuration; and a second desiccant bed configured for performing desorption in the first operating configuration and for performing adsorption in the second operating configuration.



WO 2011/090438 A1