(12) INTERNATIONAL APPLICATION PUBLISHED UNDER THE PATENT COOPERATION TREATY (PCT)

(19) World Intellectual Property Organization
International Bureau

(43) International Publication Date
21 August 2025 (21.08.2025)

WIPO | PCT

(10) International Publication Number
WO 2025/174321 A1

(51) International Patent Classification:
*F24F 3/153* (2006.01) *F24F 12/00* (2006.01)
*F24F 3/14* (2006.01)

(21) International Application Number:
PCT/SG2024/050083

(22) International Filing Date:
15 February 2024 (15.02.2024)

(25) Filing Language: English

(26) Publication Language: English

(71) Applicant: **ENERCOV ( SINGAPORE) PTE LTD** [SG/SG]; No. 80 Genting Lane, #06-02 Genting Block, Ruby Industrial Complex Singapore 349565, Singapore (SG).

(72) Inventor: **YAP, Yoong Fook**; No. 80 Genting Lane, #06-02 Genting Block, Ruby Industrial Complex Singapore 349565, Singapore (SG).

(74) Agent: **NG, Kim Tean**; P.O. Box 1861, Robinson Road Post Office, 903711 Singapore, Singapore (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, BN, BR, BW, BY, BZ, CA, CH, CL, CN, CO, CR, CU, CV, CZ, DE, DJ, DK, DM, DO, DZ, EC, EE, EG, ES, FI, GB, GD, GE, GH, GM, GT, HN, HR, HU, ID, IL, IN, IQ, IR, IS, IT, JM, JO, JP, KE, KG, KH, KN, KP, KR, KW, KZ, LA, LC, LK, LR, LS, LU, LY, MA, MD, MG, MK, MN, MU, MW, MX, MY, MZ, NA, NG, NI, NO, NZ, OM, PA, PE, PG, PH, PL, PT, QA, RO, RS, RU, RW, SA, SC, SD, SE, SG, SK, SL, ST, SV, SY, TH, TJ, TM, TN, TR, TT, TZ, UA, UG, US, UZ, VC, VN, WS, ZA, ZM, ZW.

(84) Designated States *(unless otherwise indicated, for every kind of regional protection available)*: ARIPO (BW, CV, GH, GM, KE, LR, LS, MW, MZ, NA, RW, SC, SD, SL, ST, SZ, TZ, UG, ZM, ZW), Eurasian (AM, AZ, BY, KG, KZ, 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, ME, MK, MT, NL, NO, PL, PT, RO, RS, SE,

(54) Title: AIR CONDITIONING AND MECHANICAL VENTILATION SYSTEM WITH SPLIT DEHUMIDIFICATION UNIT

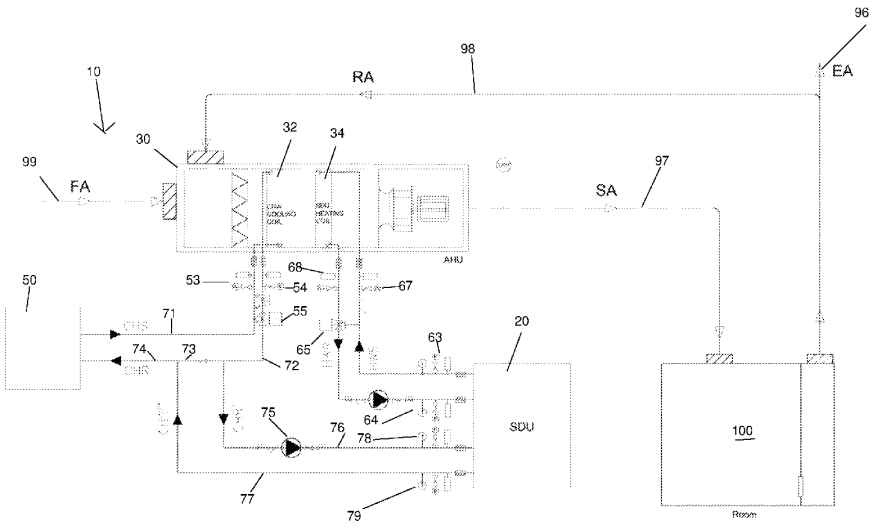



FIG. 1

(57) Abstract: An air conditioning and mechanical ventilation system for providing conditioned air to a building, comprises an air handling unit adapted to receive fresh air and deliver the conditioned air to the building, and provided with a chilled fluid cooling coil and a heating coil, a split dehumidification unit which generates heat, and a chiller adapted provide chilled fluid to the chilled fluid cooling coil of the air handling unit. A hot fluid pipe is operatively connected between the split dehumidification unit and the heating coil, and adapted to transfer heat from the split dehumidification unit to the heating coil.

*[Continued on next page]*

WO 2025/174321 A1

SI, SK, SM, TR), OAPI (BF, BJ, CF, CG, CI, CM, GA, GN, GQ, GW, KM, 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))*