

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

(19) World Intellectual Property
Organization
International Bureau

(43) International Publication Date
18 November 2021 (18.11.2021)



(10) International Publication Number
WO 2021/230817 A1

(51) International Patent Classification:

B64C 27/00 (2006.01) B64C 27/72 (2006.01)
B64C 39/02 (2006.01)

(21) International Application Number:

PCT/SG2021/050259

(22) International Filing Date:

11 May 2021 (11.05.2021)

(25) Filing Language:

English

(26) Publication Language:

English

(30) Priority Data:

10202004386S 12 May 2020 (12.05.2020) SG

(71) Applicant: **SINGAPORE UNIVERSITY OF TECHNOLOGY AND DESIGN** [SG/SG]; 8 Somapah Road, Singapore 487372 (SG).

(72) Inventors: **WIN, Shane Kyi Hla**; c/o Singapore University of Technology and Design, 8 Somapah Road, Singapore 487372 (SG). **Luke Soe Thura Win**; c/o Singapore University of Technology and Design, 8 Somapah Road, Singapore 487372 (SG). **FOONG, Shaohui**; c/o Singapore University of Technology and Design, 8 Somapah Road, Singapore 487372 (SG). **SOH, Gim Song**; c/o Singapore University of Technology and Design, 8 Somapah Road, Singapore 487372 (SG).

(74) Agent: **VIERING, JENTSCHURA & PARTNER LLP**; P.O. Box 1088, Rochor Post Office, Rochor Road, Singapore 911833 (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, CZ, DE, DJ, DK, DM, DO, DZ, EC, EE, EG, ES, FI, GB, GD, GE, GH, GM, GT, HN, HR, HU, ID, IL, IN, IR, IS, IT, JO, JP, KE, KG, KH, KN, KP, KR, KW, KZ, LA, LC, LK, LR, LS, LU, LY, MA, MD, ME, MG, MK, MN, 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, GH, GM, KE, LR, LS, MW, MZ, NA, RW, 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, MK, MT, NL, NO, PL, PT, RO, RS, SE, SI, SK, SM, TR), OAPI (BF, BJ, CF, CG, CI, CM, GA, GN, GQ, GW, KM, ML, MR, NE, SN, TD, TG).

Published:

- with international search report (Art. 21(3))
- in black and white; the international application as filed contained color or greyscale and is available for download from PATENTSCOPE

(54) Title: AUTOROTATING AERIAL DEVICE, METHOD OF FORMING THE AUTOROTATING AERIAL DEVICE AND AN AUTOROTATING AERIAL SYSTEM

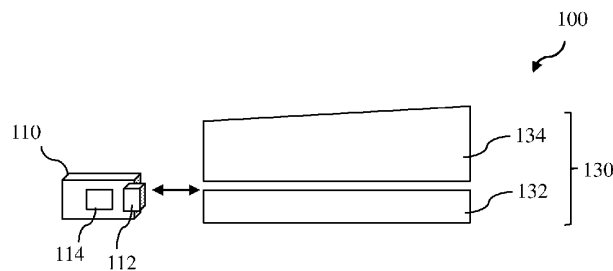


FIG. 1

(57) Abstract: There is provided an autorotating aerial device which includes a housing member having disposed thereon an actuator and a controller configured to control the actuator; and a wing member coupled to the actuator, the wing member including a main wing portion and a flap portion adjustable with respect to the main wing portion. The controller is configured to control the actuator to switch the autorotating aerial device between a diving mode of operation and an autorotating mode of operation based on adjusting an angle of attack of the flap portion, the angle of attack being with respect to a lateral axis along the main wing portion. There is also provided a method of forming the autorotating aerial device and an autorotating aerial system including two or more autorotating aerial devices.

WO 2021/230817 A1