



(51) **International Patent Classification:**
G10K 11/162 (2006.01) *E04B 1/84* (2006.01)
G10K 11/165 (2006.01)

(21) **International Application Number:**
PCT/SG2023/050481

(22) **International Filing Date:**
10 July 2023 (10.07.2023)

(25) **Filing Language:** English

(26) **Publication Language:** English

(30) **Priority Data:**
10202250499C 18 July 2022 (18.07.2022) SG

(71) **Applicant: AGENCY FOR SCIENCE, TECHNOLOGY AND RESEARCH** [SG/SG]; 1 Fusionopolis Way, #20-10, Connexis North, Singapore 138632 (SG).

(72) **Inventors: YAO, Kui;** c/o Institute of Materials Research and Engineering, 2 Fusionopolis Way, #08-03, Innovis, Singapore 138634 (SG). **MOHAMED YOUSRY, Yasmin;** c/o Institute of Materials Research and Engineering, 2 Fusionopolis Way, #08-03, Innovis, Singapore 138634 (SG). **CHEN, Shu Ting;** c/o Institute of Materials Research and Engineering, 2 Fusionopolis Way, #08-03, Innovis, Singapore 138634 (SG). **LIM, Poh Chong;** c/o Institute of

Materials Research and Engineering, 2 Fusionopolis Way, #08-03, Innovis, Singapore 138634 (SG).

(74) **Agent: ONG, Jean Li, Magdelene;** Marks & Clerk Singapore LLP, Tanjong Pagar Post Office, P.O. 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, 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:** SOUND ABSORPTION MATERIAL AND METHOD OF FABRICATING SAME

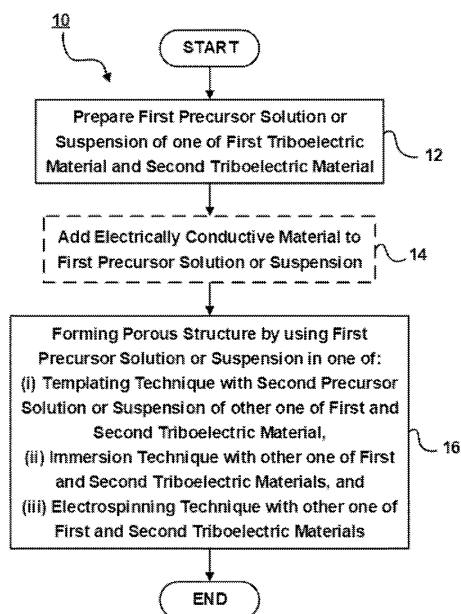


FIG. 1

(57) **Abstract:** A sound absorption material and a method (10) of fabricating a sound absorption material are provided. The method (10) includes preparing (12) a first precursor solution or suspension of one of a first triboelectric material and a second triboelectric material; and forming (16) a porous structure by using the first precursor solution or suspension in one of a templating technique with a second precursor solution or suspension of the other one of the first and second triboelectric material, an immersion technique with the other one of the first and second triboelectric materials, and an electrospinning technique with the other one of the first and second triboelectric materials. The porous structure includes a hybrid composite of the first triboelectric material having a first charge affinity and the second triboelectric material having a second charge affinity, wherein the first charge affinity is greater than the second charge affinity.

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))*
- *before the expiration of the time limit for amending the claims and to be republished in the event of receipt of amendments (Rule 48.2(h))*