

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

(19) World Intellectual Property
Organization
International Bureau

(43) International Publication Date
03 September 2020 (03.09.2020)



(10) International Publication Number
WO 2020/176030 A1

(51) International Patent Classification:

B01D 71/74 (2006.01) **B01D 69/10** (2006.01)
B01D 67/00 (2006.01) **B01D 69/12** (2006.01)
B01D 69/14 (2006.01) **B01D 71/02** (2006.01)

(21) International Application Number:

PCT/SE2020/050213

(22) International Filing Date:

26 February 2020 (26.02.2020)

(25) Filing Language: English

(26) Publication Language: English

(30) Priority Data:

1950252-5 27 February 2019 (27.02.2019) SE

(71) Applicant: **AQUAMMODATE AB** [SE/SE]; c/o Simon Isaksson, Getskärsvägen 9, 444 60 Stora Höga (SE).

(72) Inventors: **ISAKSSON, Simon**; Getskärsvägen 9, 444 60 Stora Höga (SE). **ANDERSSON, Martin**; Matildebergsgatan 23, 431 38 Mölndal (SE).

(74) Agent: **BARKER BRETTELL SWEDEN AB**; Östermalmsgatan 87B, SE-114 59 Stockholm (SE).

(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, 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))

(54) Title: STABILIZED FILTRATION DEVICE

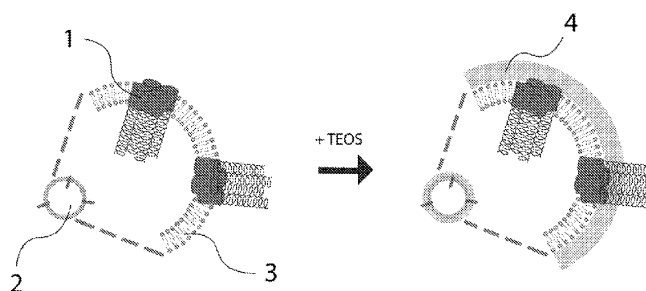


Fig. 1

(57) Abstract: A macromolecule membrane structure (2) comprises a membrane (3) with water-channeling integral membrane proteins (IMPs) (1) and is coated, on a first surface, with a silica layer (4). The silica layer (4) stabilizes the macromolecule membrane structure (2) and the water-channeling IMPs (1) while maintaining the water-channeling function of the water-channeling IMPs (1). As a consequence of this stabilization, the macromolecule membrane structure (2) may be used in a filtration device (5) for various filtration operations, including water purification.

WO 2020/176030 A1