



(51) International Patent Classification:

C08B 37/08 (2006.01) C08K 3/08 (2006.01)
C08L 5/08 (2006.01) C08J 5/18 (2006.01)
C08J 3/075 (2006.01)

(21) International Application Number:

PCT/SG2025/050029

(22) International Filing Date:

13 January 2025 (13.01.2025)

(25) Filing Language:

English

(26) Publication Language:

English

(30) Priority Data:

10202400110Q 12 January 2024 (12.01.2024) SG

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(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,

(54) Title: A MATERIAL AND METHODS FOR ITS FORMATION

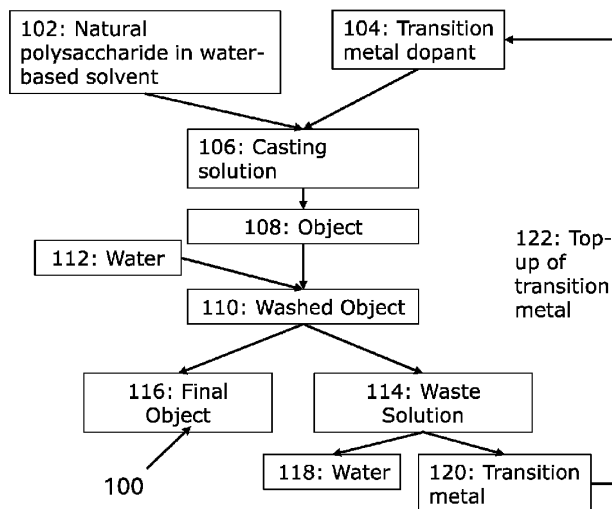


Figure 1

(57) Abstract: Disclosed herein is a composite comprising a biopolymer such as chitosan, and a polyvalent atom or molecule such as nickel ion, wherein the polyvalent atom or molecule is immobilised in the biopolymer in the presence of water. Also disclosed herein is a method of manufacturing the composite of, comprising: vitrifying, via a first vitrification cycle, the natural biopolymer and during or after vitrification, doping the natural biopolymer with a metal, the metal comprising the multivalent transition metal ions, wherein vitrifying the natural biopolymer generates a waste solution consisting of a fraction of the metal comprising the multivalent transition metal ions, and wherein the waste solution is used in a second or subsequent vitrification cycle.

[Continued on next page]

TJ, TM, TN, TR, TT, TZ, UA, UG, US, UY, 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, 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))*