



(51) International Patent Classification:

C09D 5/14 (2006.01) *A01N 59/00* (2006.01)
A01N 59/02 (2006.01) *A01P 1/00* (2006.01)
C08K 3/22 (2006.01) *C08K 3/30* (2006.01)

(21) International Application Number:

PCT/SG2011/000269

(22) International Filing Date:

29 July 2011 (29.07.2011)

(25) Filing Language:

English

(26) Publication Language:

English

(30) Priority Data:

1012798.3 30 July 2010 (30.07.2010) GB

(71) Applicant (for all designated States except US):
NANYANG POLYTECHNIC [SG/SG]; 180 Ang Mo
Kio Avenue 8, Singapore 569830 (SG).

(72) Inventors; and

(75) Inventors/Applicants (for US only): **CHANG, Hengky**
[SG/SG]; 320B Anchorvale Drive, #03-110, Singapore
542320 (SG). **CHEAH, Chi Mun** [MY/SG]; Blk 862,
Woodlands St 83, #07-186, Singapore 730862 (SG).
LEO, Jacob [SG/SG]; 59 Jalan Sukachita, Singapore
358935 (SG). **LEUNG, Henry** [GB/SG]; 168 Ang Mo
Kio Ave 8, #07-01, Singapore 569824 (SG).

(74) Agent: **ELLA CHEONG SPRUSON & FERGUSON**
(SINGAPORE) PTE LTD; P.O. Box 1531, Robinson
Road Post Office, Singapore 903031 (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, BR, BW, BY, BZ,
CA, CH, CL, CN, CO, CR, CU, CZ, DE, DK, DM, DO,
DZ, EC, EE, EG, ES, FI, GB, GD, GE, GH, GM, GT,
HN, HR, HU, ID, IL, IN, IS, JP, KE, KG, KM, KN, KP,
KR, KZ, LA, LC, LK, LR, LS, LT, LU, LY, MA, MD,
ME, MG, MK, MN, MW, MX, MY, MZ, NA, NG, NI,
NO, NZ, OM, PE, PG, PH, PL, PT, RO, RS, RU, SC, SD,
SE, SG, SK, SL, SM, ST, SV, SY, TH, TJ, TM, TN, TR,
TT, TZ, UA, UG, US, UZ, VC, VN, ZA, ZM, ZW.

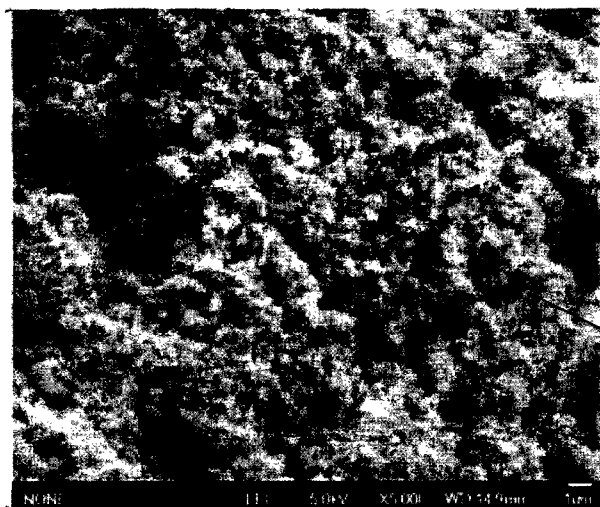
(84) Designated States (unless otherwise indicated, for every
kind of regional protection available): ARIPO (BW, GH,
GM, KE, LR, LS, MW, MZ, NA, SD, SL, SZ, TZ, UG,
ZM, ZW), Eurasian (AM, AZ, BY, KG, KZ, MD, RU, TJ,
TM), European (AL, AT, BE, BG, CH, CY, CZ, DE, DK,
EE, ES, FI, FR, GB, GR, HR, HU, IE, 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, ML, MR, NE, SN, TD, TG).

Published:

— with international search report (Art. 21(3))

(54) Title: ANTI-MICROBIAL COATINGS, COATING SOLUTIONS AND METHODS OF PRODUCING THE SAME

Fig. 1



10

(57) Abstract: A coating solution comprising nano-sized or micro-sized metal or metalloid chalcogenide particles in a polymer matrix precursor solution, wherein the weight ratio of metal or metalloid chalcogenide particles to said polymer matrix precursor solution enables at least a portion of said metal or metalloid chalcogenide particles to project from the surface of a polymer matrix that has been formed during cross-linking of said polymer matrix precursor solution, to thereby inactivate micro-organisms in contact with said metal or metalloid chalcogenide particles.