



(51) International Patent Classification:

C01B 13/14 (2006.01) *C01G 53/04* (2006.01)
B05D 5/00 (2006.01) *C01G 45/02* (2006.01)
C01G 49/02 (2006.01) *C01G 3/02* (2006.01)
C01G 49/06 (2006.01) *C01G 1/02* (2006.01)
C01G 49/08 (2006.01) *B82Y 30/00* (2011.01)
C01G 51/04 (2006.01) *B82Y 40/00* (2011.01)

(21) International Application Number:

PCT/SG2012/000226

(22) International Filing Date:

27 June 2012 (27.06.2012)

(25) Filing Language:

English

(26) Publication Language:

English

(30) Priority Data:

61/501,335 27 June 2011 (27.06.2011) US

(71) Applicant (for all designated States except US): **NATIONAL UNIVERSITY OF SINGAPORE** [SG/SG]; 21 Lower Kent Ridge Road, Singapore 119077 (SG).

(72) Inventors; and

(75) Inventors/Applicants (for US only): **BALAYA, Palani** [IN/SG]; c/o National University of Singapore, Faculty of Engineering, Department of Mechanical Engineering, 21 Lower Kent Ridge Road, Singapore 119077 (SG). **HARI-HARAN, Srirama** [IN/SG]; c/o National University of Singapore, Faculty of Engineering, Department of Mechanical Engineering, 21 Lower Kent Ridge Road, Singapore 119077 (SG).

(74) Agent: **AMICA LAW LLC**; 30 Raffles Place, #18-03/04 Chevron House, Singapore 048622 (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, QA, RO, RS, RU, RW, 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, RW, SD, SL, 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, 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))

(54) Title: SYNTHESIS OF MESOPOROUS TRANSITION METAL OXIDES AS ANODE MATERIALS

(57) Abstract: A method of preparing mesoporous nanostructured particles of a transition metal oxide. The method contains the steps of dissolving a soft-template compound in a solvent, dispersing a first or second row transition metal ion-containing compound, adjusting the pH value if necessary, and removing the solvent to obtain mesoporous nanostructured transition metal oxide powders, calcining the powders optionally to afford mesoporous nanostructured particles of the transition metal oxide. Also disclosed is particle prepared by the above-described method.

