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

(19) World Intellectual Property Organization
International Bureau

(43) International Publication Date
11 October 2012 (11.10.2012)

WIPO | PCT

(10) International Publication Number
WO 2012/137037 A1

(51) International Patent Classification:
H01L 31/042 (2006.01) *H01L 31/0224* (2006.01)

(21) International Application Number:
PCT/IB2011/051450

(22) International Filing Date:
5 April 2011 (05.04.2011)

(25) Filing Language: English

(26) Publication Language: English

(71) Applicants *(for all designated States except US)*: **ROBERT BOSCH (SEA) PTE. LTD.** [SG/SG]; 11 Bishan Street 21, Singapore 573943 (SG). **NANYANG TECHNOLOGICAL UNIVERSITY** [SG/SG]; 50 Nanyang Avenue, Singapore 639798 (SG).

(72) Inventors; and

(75) Inventors/Applicants *(for US only)*: **THAN, Zaw Oo** [MM/SG]; Blk 402 Clementi Ave 1, #09-252, Singapore 120402 (SG). **MATHEWS, Nripan** [IN/SG]; Block 191B, #14-906, Rivervale Drive, Singapore 542191 (SG). **MHAISALKAR, Subodh** [SG/SG]; 9 Sin Ming Walk, #18-01, Singapore 575578 (SG). **ZEN, Achmad** [ID/SG]; 443 Choa Chu Kang Avenue 4, #09-349, Singapore 680443 (SG). **TREUTLER, Christoph** [DE/SG]; 5 Rodyk Street, #04-26, Watermark Apartment, Singapore 238214 (SG). **WONG, Lydia Helena** [SG/SG]; Block 686C, #06-148, Jurong West, Central 1, Singapore 643686 (SG).

(74) Agents: **SCHWEIGER, Martin** et al.; Schweiger & Partners (Singapore) LLP, 105 Cecil Street, #03-02, The Octagon, Singapore 069534 (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,

[Continued on next page]

(54) Title: ULTRATHIN METAL NANOWIRES FOR PLASMON ENHANCED SOLAR CELLS

(57) Abstract: The application discloses a photovoltaic device which comprises a first electrode layer, a second electrode layer and at least one photoactive layer which is arranged between the first electrode layer and the second electrode layer. A nanowire network is provided in proximity to the at least one photoactive layer.

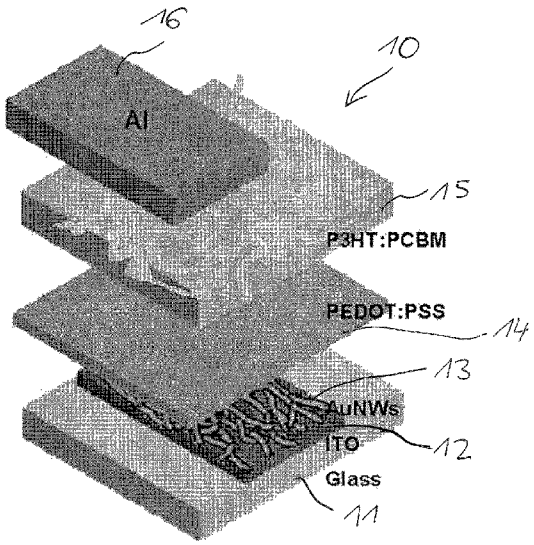


Fig. 7

WO 2012/137037 A1

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))*