

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

(19) World Intellectual Property
Organization
International Bureau

(43) International Publication Date
07 October 2021 (07.10.2021)



(10) International Publication Number
WO 2021/201778 A1

(51) International Patent Classification:

C01B 32/342 (2017.01) C01B 32/372 (2017.01)
C01B 32/33 (2017.01) B01J 20/20 (2006.01)

(21) International Application Number:

PCT/SG2021/050180

(22) International Filing Date:

31 March 2021 (31.03.2021)

(25) Filing Language:

English

(26) Publication Language:

English

(30) Priority Data:

10202003008X 31 March 2020 (31.03.2020) SG

(71) Applicants: **NATIONAL UNIVERSITY OF SINGAPORE** [SG/SG]; 21 Lower Kent Ridge Road, Singapore 119077 (SG). **SEMBCORP INDUSTRIES LTD** [SG/SG]; 30 Hill Street, #05-04, Singapore 179360 (SG).

(72) Inventors: **WANG, Chi-Hwa**; c/o National University of Singapore, Faculty of Engineering / Department of Chemical and Biomolecular Engineering, 21 Lower Kent Ridge Road, Singapore 119077 (SG). **CADIAM MOHAN, Babu**;

c/o National University of Singapore, Faculty of Engineering / Department of Chemical and Biomolecular Engineering, 21 Lower Kent Ridge Road, Singapore 119077 (SG). **YAO, Zhiyi**; c/o National University of Singapore, Faculty of Engineering / Department of Chemical and Biomolecular Engineering, 21 Lower Kent Ridge Road, Singapore 119077 (SG). **THAMIZHCHELVAN, Anbu Mozhi**; c/o National University of Singapore, Faculty of Engineering / Department of Chemical and Biomolecular Engineering, 21 Lower Kent Ridge Road, Singapore 119077 (SG).

(74) Agent: **DAVIES COLLISON CAVE ASIA PTE. LTD.**; 10 Collyer Quay #07-01, Ocean Financial Centre, Singapore 049315 (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, 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, IT, 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,

(54) Title: ACTIVATED CARBON AND METHOD OF FABRICATION THEREOF

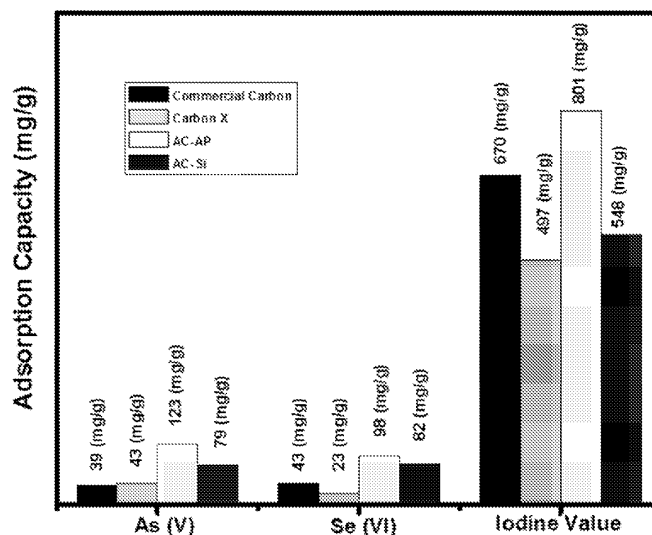


Figure 9

(57) Abstract: The present invention relates, in general terms, to methods of forming activated carbon. The method of forming activated carbon comprises mixing carbon black with an activation catalyst and heating the carbon black in order to form the activated carbon. The present invention also relates to applications of activated carbon as disclosed herein. In a preferred embodiment, the activation catalyst is selected from ammonium persulfate, sodium persulfate, potassium persulfate or a combination thereof.

[Continued on next page]

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).

Declarations under Rule 4.17:

— *of inventorship (Rule 4.17(iv))*

Published:

— *with international search report (Art. 21(3))*
— *in black and white; the international application as filed contained color or greyscale and is available for download from PATENTSCOPE*