

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

(19) World Intellectual Property
Organization
International Bureau

(43) International Publication Date
26 December 2019 (26.12.2019)



(10) International Publication Number
WO 2019/246051 A1

(51) International Patent Classification:

H01M 4/133 (2010.01) *H01M 4/02* (2006.01)
H01M 4/13 (2010.01) *H01M 4/00* (2006.01)

(21) International Application Number:

PCT/US2019/037669

(22) International Filing Date:

18 June 2019 (18.06.2019)

(25) Filing Language:

English

(26) Publication Language:

English

(30) Priority Data:

62/686,420 18 June 2018 (18.06.2018) US

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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, 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, 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, SA,
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,

(54) Title: ELECTRODES COMPRISING THREE-DIMENSIONAL HETEROATOM-DOPED CARBON NANOTUBE MACRO
MATERIALS

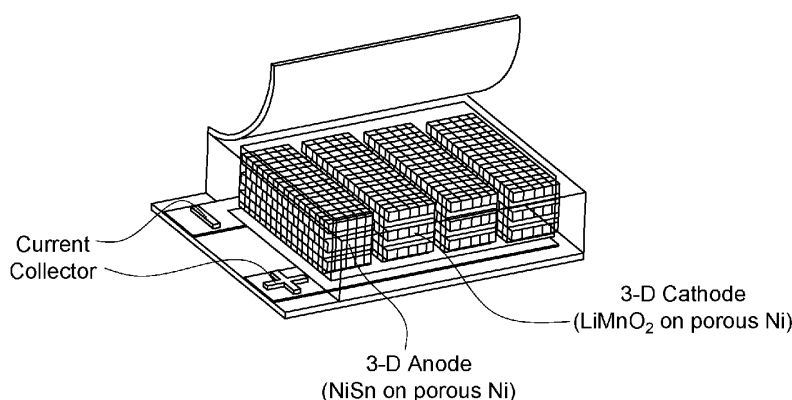


Figure 20

(57) Abstract: Electrodes, including anodes and/or cathodes, comprising a three-dimensional boron- doped carbon nanotube macro-
material are disclosed. The anode and/or cathode can be prepared using chemical vapor deposition, using a metal foil, such as a copper
foil, as a substrate, and in other embodiments, or can be adhered to a metal foil following preparation. The anode and/or cathode are
porous, and a portion of the pores can be filled with appropriate anode or cathode active materials. Preferred active materials for the
anode comprise lithium metal or lithium-containing alloys. Preferred active materials for the cathode comprise lithium salts, such as
lithium oxide or lithium sulfide. Batteries, capacitors and supercapacitors comprising these anodes and/or cathodes are also disclosed.

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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).

Published:

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