



(51) International Patent Classification:

H01L 21/306 (2006.01) *H01L 21/288* (2006.01)
C25D 7/12 (2006.01) *H01L 31/18* (2006.01)
C25D 9/00 (2006.01)

(21) International Application Number:

PCT/CA2011/001013

(22) International Filing Date:

8 September 2011 (08.09.2011)

(25) Filing Language:

English

(26) Publication Language:

English

(71) Applicant (for all designated States except US): **DAY4 ENERGY INC.** [CA/CA]; #401-4621 Canada Way, Burnaby, British Columbia V5G 4X8 (CA).

(72) Inventors; and

(75) Inventors/Applicants (for US only): **RUBIN, Leonid Borisovich** [RU/CA]; 1603-6188 Patterson Avenue, Burnaby, British Columbia V5H 2N1 (CA). **OSIPOV, Alexander, Sergeyevich** [RU/CA]; 931 London Place, New Westminster, British Columbia V3M 4Z5 (CA). **NEBURCHILOVA, Elena Borisovna** [RU/CA]; #203-3333

West 4th Avenue, Vancouver, British Columbia V6R 4R9 (CA).

(74) Agents: **KNOX, John, W.** et al.; Fetherstonhaugh & Co., 2200-650 West Georgia Street, Vancouver, British Columbia V6B 4N8 (CA).

(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, 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,

[Continued on next page]

(54) Title: FORMING AN OXIDE LAYER ON A FLAT CONDUCTIVE SURFACE

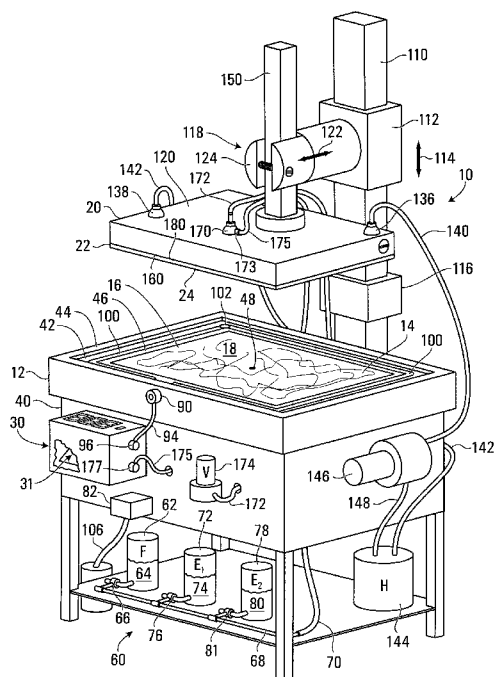


FIG. 1

(57) Abstract: A method and apparatus for electrochemically forming an oxide layer on a flat conductive surface which involves positioning a working electrode bearing the flat conductive surface in opposed parallel spaced apart relation to a flat conductive surface of a counter electrode such that the flat conductive surface of the working electrode and the flat conductive surface of the counter electrode are generally opposed, horizontally oriented, and define a space therebetween. A volume of organic electrolyte solution containing chemicals for forming the oxide layer on the flat conductive surface of the working electrode is arranged to flood the flat conductive surface of the counter electrode surface and to occupy the space defined between the flat conductive surface of the working electrode and the flat conductive surface of the counter electrode such that at least the flat conductive surface of the counter electrode is in contact with the organic electrolyte solution and substantially only the flat conductive surface of the working electrode is in contact with the organic electrolyte solution. An electric current flows between substantially only the flat conductive surface of the counter electrode and substantially only the flat conductive surface of the working electrode, in the organic electrolyte solution, for a period of time and at a magnitude sufficient to cause the chemicals to form the oxide layer on the flat conductive surface of the working electrode.



TR), OAPI (BF, BJ, CF, CG, CI, CM, GA, GN, GQ, GW,
ML, MR, NE, SN, TD, TG).

— *of inventorship (Rule 4.17(iv))*

Declarations under Rule 4.17:

Published:

- *as to the identity of the inventor (Rule 4.17(i))*
- *as to applicant's entitlement to apply for and be granted
a patent (Rule 4.17(ii))*

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