



(51) International Patent Classification:

C23C 8/00 (2006.01) C23F 13/02 (2006.01)
C23C 22/00 (2006.01) C23F 15/00 (2006.01)

(21) International Application Number:

PCT/SG2012/000380

(22) International Filing Date:

11 October 2012 (11.10.2012)

(25) Filing Language:

English

(26) Publication Language:

English

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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, 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, PA, 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: SYSTEM AND METHOD FOR PROVIDING CORROSION PROTECTION OF METALLIC STRUCTURE USING TIME VARYING ELECTROMAGNETIC WAVE

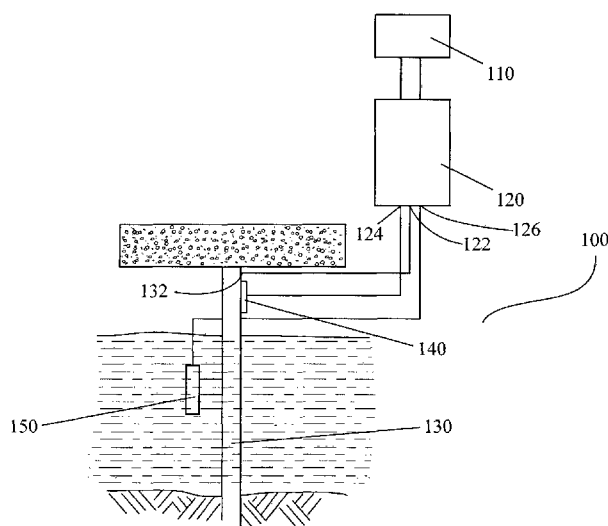


Fig. 1

(57) Abstract: The present invention provides a system for providing corrosion protection of a metallic structure using time varying electromagnetic wave, comprising: a generator for generating electromagnetic wave having a time varying frequency, said generator having at least two output terminals in electrical connection respectively with first and second excitation sites which are positioned in a spaced manner on the metallic structure, allowing for subjecting the metallic structure to the electromagnetic wave; and an electric power source connected to the generator for applying a driving voltage to the generator to drive the generation of the electromagnetic wave; wherein the driving voltage and/or the frequency of the electromagnetic wave are selected such that the metallic structure is energized to form in-situ a passive oxidized species of the metal on a surface of the metallic structure, which species is insusceptible to corrosion. The invention also provides a method for providing corrosion protection of a metallic structure using time varying electromagnetic wave.