



- (51) **International Patent Classification:**
B01D 67/00 (2006.01) *G01B 7/00* (2006.01)
- (21) **International Application Number:**
PCT/IB2013/000884
- (22) **International Filing Date:**
7 May 2013 (07.05.2013)
- (25) **Filing Language:** English
- (26) **Publication Language:** English
- (30) **Priority Data:**
61/643,651 7 May 2012 (07.05.2012) US
61/781,081 14 March 2013 (14.03.2013) US
- (71) **Applicant:** **THE UNIVERSITY OF OTTAWA**
[CA/CA]; 3042-800 King Edward, Ottawa, Ontario K1N 6N5 (CA).
- (72) **Inventors:** **GODIN, Michael**; The University of Ottawa, 3042-800 King Edward, Ottawa, Ontario K1N 6N5 (CA). **BEAMISH, Eric**; The University of Ottawa, 3042-800 King Edward, Ottawa, Ontario K1N 6N5 (CA). **TABARD-COSSA, Vincent**; The University of Ottawa, 3042-800 King Edward, Ottawa, Ontario K1N 6N5 (CA). **KWOK, Wing Hei**; The University of Ottawa, 3042-800 King Edward, Ottawa, Ontario K1N 6N5 (CA).
- (81) **Designated States** (unless otherwise indicated, for every kind of national protection available): AE, AG, AL, AM,

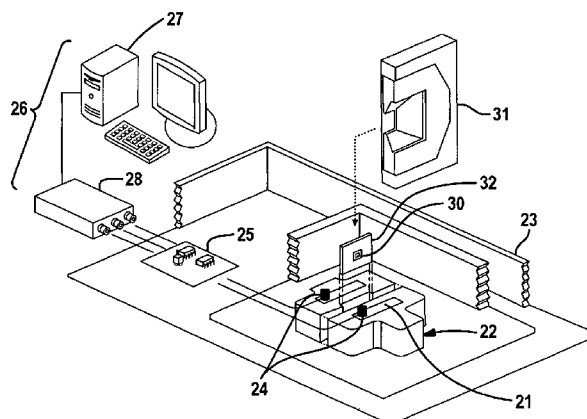
AO, AT, AU, AZ, BA, BB, BG, BH, BN, BR, BW, BY, BZ, CA, CH, CL, CN, CO, CR, CU, CZ, DE, DK, DM, DO, DZ, EC, EE, EG, ES, FI, GB, GD, GE, GH, GM, GT, HN, HR, HU, ID, IL, IN, IS, JP, KE, KG, KM, KN, KP, KR, KZ, LA, LC, LK, LR, LS, LT, LU, LY, MA, MD, ME, MG, MK, MN, MW, MX, MY, MZ, NA, NG, NI, NO, NZ, OM, 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).

Published:

- with international search report (Art. 21(3))
- before the expiration of the time limit for amending the claims and to be republished in the event of receipt of amendments (Rule 48.2(h))

(54) **Title:** METHOD FOR CONTROLLING THE SIZE OF SOLID-STATE NANOPORES

**FIG. 2**

(57) **Abstract:** A method is provided for precisely enlarging a nanopore formed in a membrane. The method includes: applying an electric potential across the nanopore, where the electric potential has a pulsed waveform oscillating between a high value and a low value; measuring current flowing through the nanopore while the electric potential is being applied to the nanopore at a low value; determining size of the nanopore based in part on the measured current; and removing the electric potential applied to the membrane when the size of the nanopore corresponds to a desired size.