

(19) World Intellectual Property Organization
International Bureau



(43) International Publication Date
22 January 2009 (22.01.2009)

PCT

(10) International Publication Number
WO 2009/012112 A1

(51) International Patent Classification:
B01D 57/02 (2006.01) **B01J 19/00** (2006.01)

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(21) International Application Number:
PCT/US2008/069638

(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, 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, PG, PH, PL, PT, RO, RS, RU, SC, SD, SE, SG, SK, SL, SM, ST, SV, SY, TJ, TM, TN, TR, TT, TZ, UA, UG, US, UZ, VC, VN, ZA, ZM, ZW.

(22) International Filing Date: 10 July 2008 (10.07.2008)

(25) Filing Language: English

(26) Publication Language: English

(30) Priority Data:
60/959,398 13 July 2007 (13.07.2007) US

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(84) Designated States (unless otherwise indicated, for every kind of regional protection available): ARIPO (BW, GH, GM, KE, LS, MW, MZ, NA, SD, SL, SZ, TZ, UG, ZM, ZW), Eurasian (AM, AZ, BY, KG, KZ, MD, RU, TJ, TM), European (AT, BE, BG, CH, CY, CZ, DE, DK, EE, ES, FI, FR, GB, GR, HR, HU, IE, IS, IT, LT, LU, LV, MC, MT, NL, NO, PL, PT, RO, SE, SI, SK, TR), OAPI (BF, BJ, CF, CG, CI, CM, GA, GN, GQ, GW, ML, MR, NE, SN, TD, TG).

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Published:
— with international search report

(54) Title: METHOD AND APPARATUS USING ELECTRIC FIELD FOR IMPROVED BIOLOGICAL ASSAYS

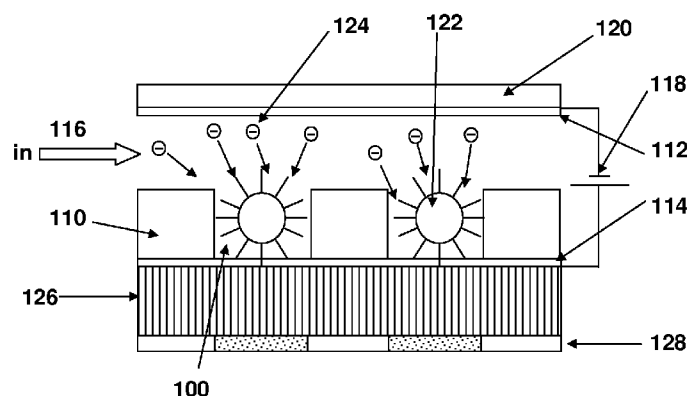


Fig. 1

(57) Abstract: Disclosed are a method and apparatus that use an electric field for improved biological assays. The electric field is applied across a device having wells, which receive reactants, which carry a charge. The device thus uses a controllable voltage source between the first and second electrodes, which is controllable to provide a positive charge and a negative charge to a given electrode. By controlled use of the electric field charged species in a fluid in a fluid channel are directed into or out of the well by an electric field between the electrodes. The present method involves the transport of fluids, as in a microfluidic device, and the electric field-induced movement of reactive species according to various assay procedures, such as DNA sequencing, synthesis or the like.