



INTERNATIONAL APPLICATION PUBLISHED UNDER THE PATENT COOPERATION TREATY (PCT)

(51) International Patent Classification ⁶ : G01N 27/60	A1	(11) International Publication Number: WO 98/49552 (43) International Publication Date: 5 November 1998 (05.11.98)
(21) International Application Number: PCT/US98/08052 (22) International Filing Date: 16 April 1998 (16.04.98) (30) Priority Data: 08/846,207 28 April 1997 (28.04.97) US (71)(72) Applicant and Inventor: AFILANI, Thomas [US/US]; R.D. 5, Box 171, Jersey Shore, PA 17740 (US). (74) Agent: KAGEN, Alan, M.; Nixon & Vanderhye P.C., 8th floor, 1100 North Glebe Road, Arlington, VA 22201-4714 (US).		(81) Designated States: AL, AM, AT, AU, AZ, BA, BB, BG, BR, BY, CA, CH, CN, CU, CZ, DE, DK, EE, ES, FI, GB, GE, GH, GM, GW, HU, ID, IL, IS, JP, KE, KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MD, MG, MK, MN, MW, MX, NO, NZ, PL, PT, RO, RU, SD, SE, SG, SI, SK, SL, TJ, TM, TR, TT, UA, UG, UZ, VN, YU, ZW, ARIPO patent (GH, GM, KE, LS, MW, SD, SZ, UG, ZW), Eurasian patent (AM, AZ, BY, KG, KZ, MD, RU, TJ, TM), European patent (AT, BE, CH, CY, DE, DK, ES, FI, FR, GB, GR, IE, IT, LU, MC, NL, PT, SE), OAPI patent (BF, BJ, CF, CG, CI, CM, GA, GN, ML, MR, NE, SN, TD, TG). Published <i>With international search report.</i>
(54) Title: STATIC ELECTRIFICATION ASSISTED DIELECTROKINESIS DETECTION OF PLASTICS AND OTHER MATERIALS		
(57) Abstract A dielectrokinetics detector includes a chamber housing an exact dielectric replicate reference material that is subjected to external static electrification. The reference material is mechanically constrained, enabling the detection of the polarization energy dynamics of constrained dielectrophoretic force indicating the presence of any target with dielectric properties identical to the properties of the reference material. An antenna assembly increases the proximity distance (range) of detection. The static electrification source for the reference material increases the longevity of the detection ability to provide continuous detection capability, and an external electronic circuit source of electrical energy via an electrical current surge gives a quantifiable manifestation of the detection. In accordance with the principals of dielectrophoresis, the detector can detect the presence of a specific material irrespective of the presence or absence of any type of intervening, visual obstructing material structures, barriers or electromagnetic interference (EMI) signals.		