(12) INTERNATIONAL APPLICATION PUBLISHED UNDER THE PATENT COOPERATION TREATY (PCT)

(19) World Intellectual Property Organization
International Bureau

(43) International Publication Date
24 February 2005 (24.02.2005)

PCT

(10) International Publication Number
WO 2005/017969 A2

(51) International Patent Classification[7]: H01L

(21) International Application Number:
PCT/US2004/026467

(22) International Filing Date: 16 August 2004 (16.08.2004)

(25) Filing Language: English

(26) Publication Language: English

(30) Priority Data:
60/495.374 14 August 2003 (14.08.2003) US
10/915,016 9 August 2004 (09.08.2004) US

(71) Applicant *(for all designated States except US)*: **CYTONOME, INC.** [US/US]; 84 Rosedale Road, Watertown, MA 02472 (US).

(72) Inventors; and

(75) Inventors/Applicants *(for US only)*: **GILBERT, John, R.** [US/CA]; 69 Naples Road, Brookline, MA 02446 (US). **SINOFSKY, Ed.** [US/—]. **DESHPANDE, Manish** [US/US]; 34 Apple Blossom Way, Canton, MA 02021 (US).

(74) Agents: **LAURENTANO, Anthony, A.** et al.; Lahive & Cockfield, LLP, 28 State Street, Boston, MA 02109 (US).

(81) Designated States *(unless otherwise indicated, for every kind of national protection available)*: AE, AG, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BW, BY, BZ, CA, CH, CN, CO, CR, CU, CZ, DE, DK, DM, DZ, EC, EE, EG, ES, FI, GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MA, MD, MG, MK, MN, MW, MX, MZ, NA, NI, NO, NZ, OM, PG, PH, PL, PT, RO, RU, SC, SD, SE, SG, SK, SL, SY, TJ, TM, TN, TR, TT, TZ, UA, UG, US, UZ, VC, VN, YU, ZA, ZM, ZW.

(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, HU, IE, IT, LU, MC, NL, PL, PT, RO, SE, SI, SK, TR), OAPI (BF, BJ, CF, CG, CI, CM, GA, GN, GQ, GW, ML, MR, NE, SN, TD, TG).

Published:
— *without international search report and to be republished upon receipt of that report*

For two-letter codes and other abbreviations, refer to the "Guidance Notes on Codes and Abbreviations" appearing at the beginning of each regular issue of the PCT Gazette.

(54) Title: OPTICAL DETECTOR FOR A PARTICLE SORTING SYSTEM

(57) Abstract: An optical system for acquiring fast spectra from spatially channel arrays includes a light source for producing a light beam that passes through the microfluidic chip or the channel to be monitored, one or more lenses or optical fibers for capturing the light from the light source after interaction with the particles or chemicals in the microfluidic channels, and one or more detectors. The detectors, which may include light amplifying elements, detect each light signal and transducer the light signal into an electronic signal. The electronic signals, each representing the intensity of an optical signal, pass from each detector to an electronic data acquisition system for analysis. The light amplifying element or elements may comprise an array of phototubes, a multianode phototube, or a multichannel plate based image intensifier coupled to an array of photodiode detectors.

WO 2005/017969 A2