



(51) International Patent Classification:
G01N 9/00 (2006.01)

(21) International Application Number:
PCT/NL2010/000071

(22) International Filing Date:
22 April 2010 (22.04.2010)

(25) Filing Language: English

(26) Publication Language: English

(30) Priority Data:
09159014.1 29 April 2009 (29.04.2009) EP

(71) Applicant (for all designated States except US): **NEST INTERNATIONAL N.V.** [NL/—]; P.O. Box 837, Willemstad, Curaçao (AN).

(72) Inventors; and

(75) Inventors/Applicants (for US only): **DROBKOV, Vladimir** [RU/RU]; Osennya Street, 4/1, Flat 12, Moscow, 121609 (RU). **MELNIKOV, Vladimir** [RU/RU]; Kuibysheva Street, 17, Flat 25, N. Novgorod, 603074 (RU). **SHUSTOV, Andrey** [RU/NL]; De Gildekamp 2215, NL-6545 KH Nijmegen (NL).

(74) Agent: **DE WEERDT, R.E.M.L.**; Exter Polak & Char-
louis B.V., P.O. Box 3241, NL-2280 GE Rijswijk (NL).

(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, 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, PE, PG, PH, PL, PT, RO, RS, RU, 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, 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, MK, MT, NL, NO, PL, PT, RO, 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))

(54) Title: FLUID DENSITY MEASUREMENT DEVICE

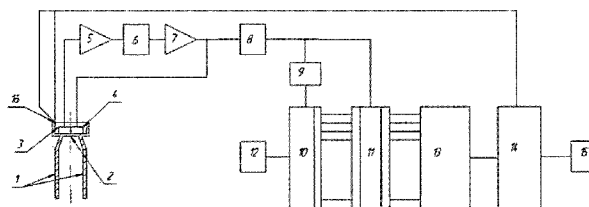


Figure 2

(57) Abstract: A device for determining a density of a fluid is described. The device comprises a mechanical resonator, a driver/receiver unit arranged to provide an actuation to the mechanical resonator, sense a response of the mechanical resonator to the actuation, and provide an output signal representing the response; and an evaluation unit. The evaluation unit of the device is arranged to i. determine an oscillation distribution from the output signal, ii. determine a resonance frequency estimate from the oscillation distribution, and iii. determine the density of the fluid based upon the resonance frequency estimate. The device according to the invention enables a more accurate determination of the fluid density for fluids comprising immiscible components (thus forming a heterogeneous mixture), like a water-oil emulsion, or a fluid with occluded gas.