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

(19) World Intellectual Property Organization
International Bureau

(43) International Publication Date
31 October 2013 (31.10.2013)

WIPO | PCT

(10) International Publication Number
WO 2013/159939 A1

(51) International Patent Classification:
G01N 33/50 (2006.01)

(21) International Application Number:
PCT/EP2013/001267

(22) International Filing Date:
26 April 2013 (26.04.2013)

(25) Filing Language: English

(26) Publication Language: English

(30) Priority Data:

12165826.4	26 April 2012 (26.04.2012)	EP
61/638,780	26 April 2012 (26.04.2012)	US

(71) Applicant: **TECHNISCHE UNIVERSITÄT BERLIN** [—/DE]; Strasse des 17.Juni 135, 10623 Berlin (DE).

(72) Inventors: **MARX, Uwe**; Markgrafenstrasse 18, 15528 Spreenhagen (DE). **KLOKE, Lutz**; Simon-Dach Str. 36, 10245 Berlin (DE). **HORLAND, Reyk**; Krumme Str. 55, 10627 Berlin (DE). **HOFFMANN, Silke**; Kreuzstr. 17d, 13187 Berlin (DE). **LORENZ, Alexandra**; Altenhofer Str. 30, 13055 Berlin (DE). **BRINCKER, Sven**; Antwerpener Str. 4, 13353 Berlin (DE). **SCHIMEK, Katharina**; Wikingerufer 4, 10555 Berlin (DE).

(74) Agents: **ZWICKER, Jörk** et al.; ZSP Patentanwälte, Partnerschaftsgesellschaft, Radlkoferstrasse 2, 81373 München (DE).

(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))*

WO 2013/159939 A1

(54) Title: METHODS FOR DETERMINING AND/OR MONITORING CONDITIONS OF A THREE DIMENSIONAL CELL CULTURE SYSTEM AND OPTICAL SENSOR DEVICE FOR CONDUCTING SAID METHODS

(57) Abstract: The present invention relates to a method for determining and/or monitoring at least one condition of a three dimensional cell culture system comprising at least one growth section, wherein the at least one condition is selected from the group consisting of physiological condition, vitality, and metabolism status. The present invention further relates to an optical sensor device configured to carry out said method.