

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

(19) World Intellectual Property
Organization
International Bureau

(43) International Publication Date
27 February 2020 (27.02.2020)



(10) International Publication Number
WO 2020/040962 A1

- (51) **International Patent Classification:**
A61B 5/145 (2006.01) *A61B 5/1473* (2006.01)
- (21) **International Application Number:**
PCT/US2019/044860
- (22) **International Filing Date:**
02 August 2019 (02.08.2019)
- (25) **Filing Language:** English
- (26) **Publication Language:** English
- (30) **Priority Data:**
62/721,701 23 August 2018 (23.08.2018) US
- (71) **Applicant:** ABBOTT DIABETES CARE INC. [US/US];
1360 South Loop Rd., Alameda, California 94502 (US).
- (72) **Inventors:** FELDMAN, Benjamin J.; 2164 Blake St.,
Berkeley, California 94704 (US). QIAN, Suyue; 130 Via
Aragon, Fremont, California 94539 (US).
- (74) **Agent:** KAISER, Iona et al.; 909 Fannin St., Suite 3700,
Houston, Texas 77010 (US).
- (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, DJ, DK, DM, DO,
DZ, EC, EE, EG, ES, FI, GB, GD, GE, GH, GM, GT, HN,
HR, HU, ID, IL, IN, IR, IS, JO, JP, KE, KG, KH, KN, KP,

KR, KW, KZ, LA, LC, LK, LR, LS, 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, SA,
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, ST, 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,
KM, ML, MR, NE, SN, TD, TG).

Declarations under Rule 4.17:

- as to applicant's entitlement to apply for and be granted a patent (Rule 4.17(ii))
- as to the applicant's entitlement to claim the priority of the earlier application (Rule 4.17(iii))

Published:

- with international search report (Art. 21(3))

(54) **Title:** SENSORS AND METHODS FOR MEASURING PH

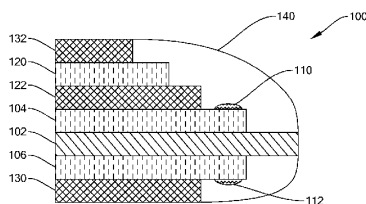


FIG. 1A

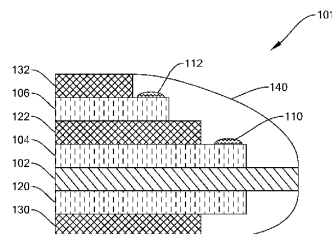


FIG. 1B

(57) **Abstract:** It can be particularly difficult to measure pH *in vivo* using current electrochemical sensors due to sensor drift and fouling of the sensor surface. Sensors suitable for measuring pH, particularly *in vivo*, may comprise: a sensor tail comprising a first working electrode, a second working electrode, and at least one other electrode; a first active portion located upon the first working electrode, the first active portion comprising a substance having pH-dependent oxidation-reduction chemistry; and a second active portion located upon the second working electrode, the second active portion comprising a substance having oxidation-reduction chemistry that is substantially invariant with pH. A difference between a first signal from the first active portion and a second signal from the second active portion may be correlated to a pH value for a fluid.



WO 2020/040962 A1