

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

(19) World Intellectual Property
Organization
International Bureau

(43) International Publication Date
02 May 2024 (02.05.2024)



(10) International Publication Number
WO 2024/091182 A1

(51) International Patent Classification:
G01R 29/08 (2006.01) *G06F 30/39* (2020.01)
G01R 31/12 (2020.01)

(21) International Application Number:
PCT/SG2023/050715

(22) International Filing Date:
26 October 2023 (26.10.2023)

(25) Filing Language: English

(26) Publication Language: English

(30) Priority Data:
10202251508W 26 October 2022 (26.10.2022) SG

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(54) Title: BROADBAND ELECTROMAGNETIC SENSOR AND METHOD OF PRODUCING THE SAME

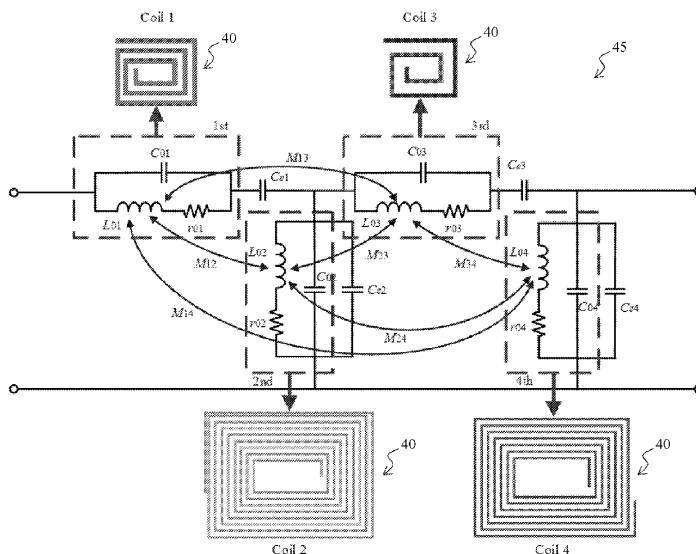


FIG. 5

(57) **Abstract:** A broadband electromagnetic sensor comprising: an amplifier circuit having at least 26 dB gain through its bandwidth; and a sensing portion in electrical connection with the amplifier circuit and comprising a coil array structure of a plurality of coils, wherein each coil has a different length from other coils in the plurality of coils and detects signals having frequencies within its own frequency bandwidth, such that the plurality of coils are together able to detect signals having frequencies within a frequency bandwidth of the sensor, and wherein the frequency bandwidth of the sensor ranges from around 1 MHz to 100 MHz, such that the sensor is able to detect partial discharge from high voltage equipment without being in physical contact with the high voltage equipment

[Continued on next page]

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(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, CV, CZ, DE, DJ, DK, DM, DO, DZ, EC, EE, EG, ES, FI, GB, GD, GE, GH, GM, GT, HN, HR, HU, ID, IL, IN, IQ, IR, IS, IT, JM, JO, JP, KE, KG, KH, KN, KP, KR, KW, KZ, LA, LC, LK, LR, LS, LU, LY, MA, MD, MG, MK, MN, MU, 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, ST, SV, SY, TH, TJ, TM, TN, TR, TT, TZ, UA, UG, US, UZ, VC, VN, WS, ZA, ZM, ZW.

(84) **Designated States** (*unless otherwise indicated, for every kind of regional protection available*): ARIPO (BW, CV, GH, GM, KE, LR, LS, MW, MZ, NA, RW, SC, 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, ME, 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).

Published:

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