



(51) International Patent Classification:
Not classified

(21) International Application Number:
PCT/US2023/075410

(22) International Filing Date:
28 September 2023 (28.09.2023)

(25) Filing Language: English

(26) Publication Language: English

(30) Priority Data:
63/377,960 30 September 2022 (30.09.2022) US

(71) Applicant: **THE BOARD OF TRUSTEES OF THE LE-
LAND STANFORD JUNIOR UNIVERSITY** [US/US];
Office of the General Counsel, Building 170, 3rd Floor,
Main Quad, P.O. Box 20386, Stanford, California 94305
(US).

(72) Inventors: **LEE, Jin Hyung**, 1442 Harker Ave, Palo Al-
to, California 94301 (US). **LIU, Qin**; 415 Broadway Street,
2nd Floor, MC8854, Redwood City, California 94063 (US).

(74) Agent: **BUCHBINDER, Jenny L.**; 201 Redwood Shores
Pkwy, Suite 200, Redwood City, California 94065 (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, 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,

(54) Title: SOLVING BRAIN CIRCUIT FUNCTION AND DYSFUNCTION WITH COMPUTATIONAL MODELING AND OP-
TOGENETIC FUNCTIONAL MAGNETIC RESONANCE IMAGING

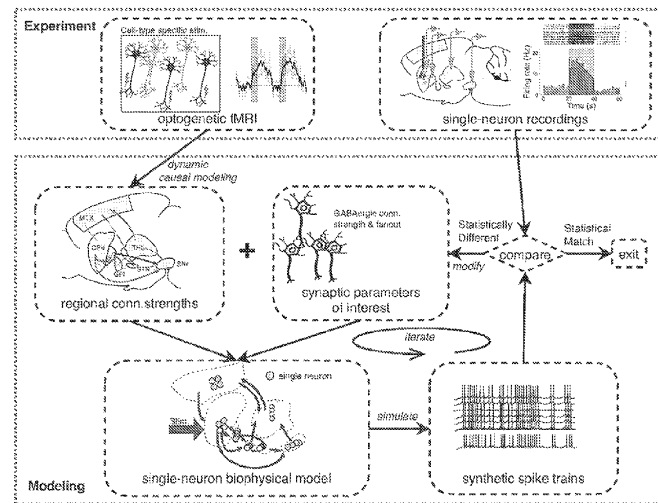


FIG. 3C

(57) Abstract: Methods, systems, and devices, including computer programs encoded on a computer storage medium are provided for optimizing neurostimulation therapy for treatment of neurological and neurodegenerative diseases. Joint dynamic causal modeling and biophysics modeling are used for optimization of the stimulation targets and parameters. In particular, methods of performing neuromodulation to suppress b-band oscillations in the brain of a subject are provided.

[Continued on next page]

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:

- *without international search report and to be republished upon receipt of that report (Rule 48.2(g))*