

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

(19) World Intellectual Property
Organization
International Bureau

(43) International Publication Date
15 August 2024 (15.08.2024)



(10) International Publication Number
WO 2024/166092 A1

(51) International Patent Classification:

H01S 3/00 (2006.01) H01S 3/08022 (2023.01)
H01S 3/08 (2023.01) H01S 3/11 (2023.01)

(21) International Application Number:

PCT/IL2024/050014

(22) International Filing Date:

04 January 2024 (04.01.2024)

(25) Filing Language:

English

(26) Publication Language:

English

(30) Priority Data:

63/484,226 10 February 2023 (10.02.2023) US

(71) Applicant: **NEWPHOTONICS LTD.** [IL/IL]; 65 Ha-Pardes St., 7685400 Kfar-Mordechai (IL).

(72) Inventors: **BEN-EZRA, Yosef**; Itzhak Ben-Zvi 27/86, 4902610 Petah Tikva (IL). **BEN-HAIM, Yaniv**; HaPardes 65, 7685400 Kfar-Mordechai (IL).

(74) Agent: **GLAZBERG, Ziv**; Glazberg Applebaum & Co., Advocates & Patent Attorneys, 3 HaYetzira St., Shap House 21st floor, 5252141 Ramat Gan (IL).

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))

(81) Designated States (unless otherwise indicated, for every kind of national protection available): AE, AG, AL, AM,

(54) Title: GENERATING A PLURALITY OF PULSE TRAINS FROM A MICRO COMB LASER

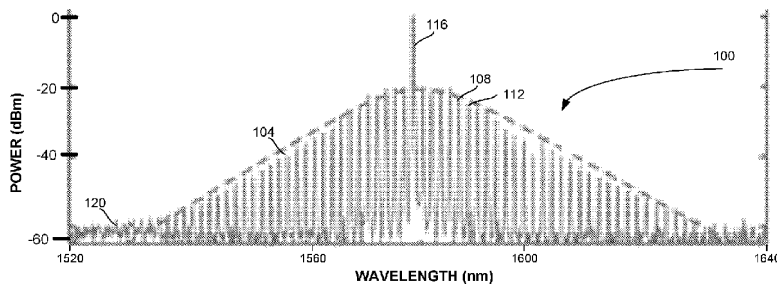


FIG. 1

(57) Abstract: A method and system, the method comprising: obtaining a plurality of coherent subcarriers, each of the plurality of coherent subcarriers having a subcarrier frequency out of a collection of subcarrier frequencies, wherein the collection of subcarrier frequencies are equally spaced; filtering a first group of subcarriers having consecutive frequencies of the collection of subcarrier frequencies, thereby obtaining a first sequence of equidistant pulses in time domain; and filtering a second group of subcarriers having consecutive frequencies of the collection of carrier frequencies, thereby obtaining a second sequence of equidistant pulses in the time domain, wherein the second group is different from the first group, thereby obtaining at least two sequences of equidistant time domain pulses, the at least two sequences of equidistant time domain pulses having different wavelengths.

WO 2024/166092 A1