

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

(19) World Intellectual Property
Organization
International Bureau

(43) International Publication Date
08 May 2025 (08.05.2025)



(10) International Publication Number
WO 2025/096014 A1

(51) International Patent Classification:
H04Q 11/00 (2006.01)

(21) International Application Number:
PCT/US2024/030031

(22) International Filing Date:
17 May 2024 (17.05.2024)

(25) Filing Language: English

(26) Publication Language: English

(30) Priority Data:
63/594,337 30 October 2023 (30.10.2023) US

(71) Applicant: **OAM PHOTONICS LLC** [US/US]; 6100
Cortaderia Street NE - Apt 3424, Albuquerque, New Mex-
ico 87111 (US).

(72) Inventors: **CHAN, Kam Wai Clifford**; 6100 Cortaderia
Street NE - Apt 3424, Albuquerque, New Mexico 87111

(US). **WONG, Chung Ki**; 6100 Cortaderia Street NE - Apt
3424, Albuquerque, New Mexico 87111 (US).

(74) Agent: **YEH, Charles**; PATTERSON + SHERIDAN LLP,
24 Greenway Plaza, Suite 1600, Houston, Texas 77046
(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: DEVICE AND METHOD FOR ROUTING OPTICAL SIGNALS

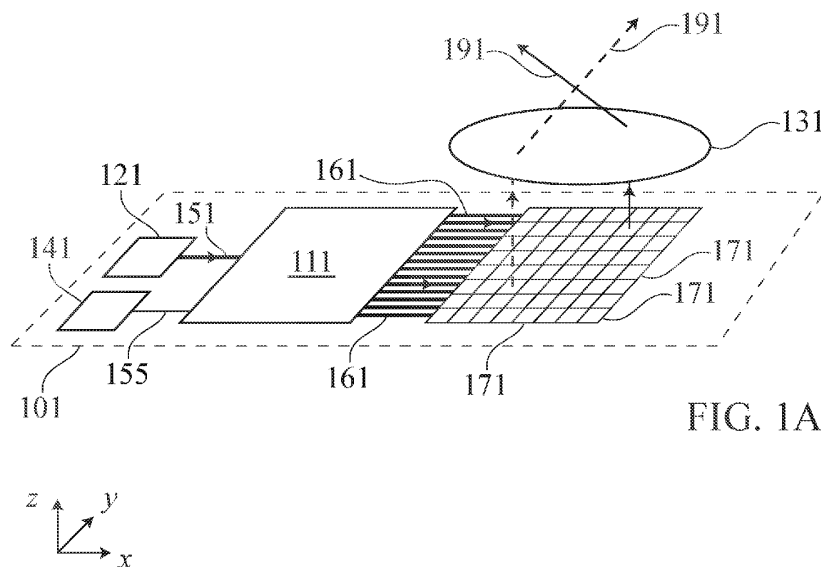


FIG. 1A

(57) Abstract: The present disclosure describes an optical routing circuit (ORC) which may be used to route an input optical signal to one or more optical output channels of the ORC. The ORC comprises a network of nodes for carrying out the task of optical signal routing. The nodes may be controlled by a node control system through electrical node control channels. The ORC may simplify the electrical interface between the nodes and the node control system by sharing an electrical node control channel among a subset of nodes of the ORC. Nodes of the ORC may transmit electrical signals between the nodes. The present disclosure also describes a node which may be used to construct the ORC and a method of routing an optical signal. The present disclosure may enable a large ORC with many nodes to be practically implemented.

[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).

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))*