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(71) Applicant: **XSCAPE PHOTONICS** [US/US]; 256 W
116th Street, Floor 3, New York, New York 10026 (US).

(72) Inventors: **OKAWACHI, Yoshimoto**; 212 Woodland
Ave., River Edge, New Jersey 07661 (US). **NOVICK, Ash-
er**; 1112 44th Drive, Unit 2C, Long Island City, New York
11101 (US). **KARIMELAHI, Samira**; 116 Via De Tesoros,
Los Gatos, California 95032 (US). **GAETA, Alexander**;
452 Riverside Dr., Apt. 62, New York, New York 10027
(US). **RAGHUNATHAN, Vivek**; 801 W El Camino Real,
Apt 1210, Mountain View, California 94040 (US).

(74) Agent: **PAOLETTA, Therese** et al.; Fish & Richardson
P.C., P. O. Box 1022, Minnesota, Minnesota 55440-1022
(US).

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(54) Title: WAVELENGTH GENERATOR BASED ON RING RESONATOR PHOTONIC DEVICES

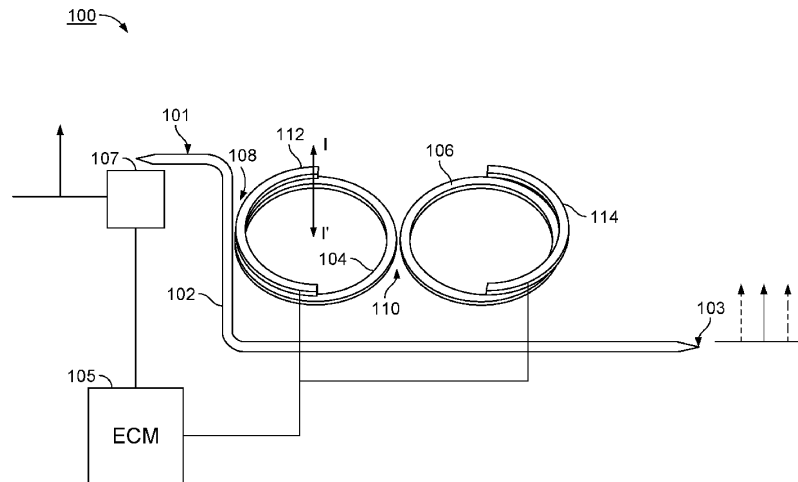


FIG. 1

(57) Abstract: A device includes: a wavelength generator configured to output optical signals at a pump frequency and at first and second frequencies both different from the pump frequency, the wavelength generator including: a planar bus waveguide; a main ring resonator; a first heating element thermally coupled to the main ring resonator; an auxiliary ring resonator optically coupled to the main ring resonator; and a second heating element thermally coupled to the auxiliary ring resonator; and an electronic control module in communication with the first heating element and the second heating element, the electronic control module being programmed to control a detuning of a main ring resonance frequency from the pump signal frequency via the first heating element, and to control a spectral position of an auxiliary ring resonance frequency to produce optical signals at the first and second frequencies from the optical signal at the pump frequency.

[Continued on next page]

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