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[Continued on next page]

(54) Title: DUAL-FREQUENCY OPTICAL SOURCE

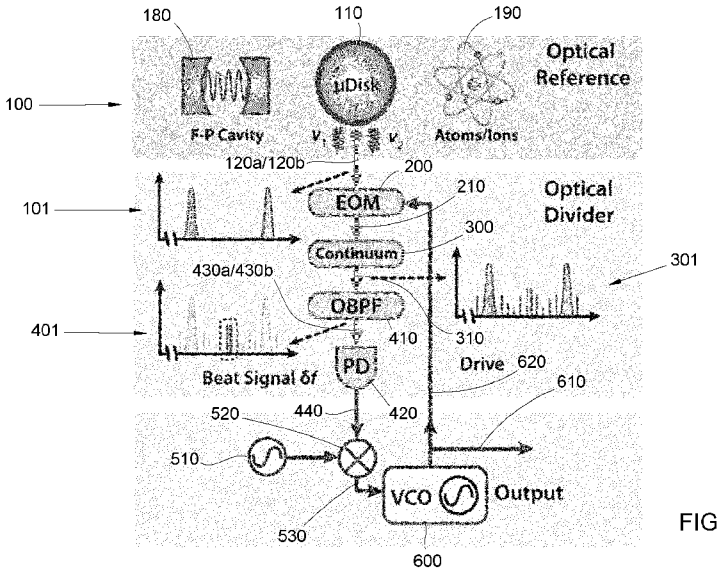

FIG. 1

(57) Abstract: A dual-frequency optical source comprises: (a) first and second pump laser sources arranged to generate optical pump power at respective first and second pump laser frequencies v_{pump1} and v_{pump2}; and (b) an optical resonator characterized by a Brillouin shift frequency v_B and a free spectral range that is substantially equal to an integer submultiple of the Brillouin shift frequency. Each one of the first and second pump laser sources is frequency-locked to a corresponding resonant optical mode of the optical resonator. First and second optical output signals of the dual-frequency optical reference source at respective first and second output frequencies $v_1=v_{pump1}-v_B$ and $v_2=v_{pump2}-v_B$ comprise stimulated Brillouin laser output generated by simultaneous optical pumping of the optical resonator by the first and second pump laser sources, respectively. An output difference frequency v_2-v_1 is greater than about 300 GHz.

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DK, EE, ES, FI, FR, GB, GR, HR, HU, IE, IS, IT, LT, LU, LV, MC, 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).

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B. FIELDS SEARCHED

Minimum documentation searched (classification system followed by classification symbols)
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Documentation searched other than minimum documentation to the extent that such documents are included in the fields searched
Korean utility models and applications for utility models
Japanese utility models and applications for utility models

Electronic data base consulted during the international search (name of data base and, where practicable, search terms used)
eKOMPASS(KIPO internal) & Keywords: optical source, resonator, Brillouin shift frequency, free spectral range (FSR)

C. DOCUMENTS CONSIDERED TO BE RELEVANT

Category*	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
A	US 2008-0075464 A1 (LUTFOLLAH MALEKI et al.) 27 March 2008 See paragraphs [0022]-[0028] and figure 1.	1-29
A	US 2013-0163620 A1 (VINCENT LECOEUCHE) 27 June 2013 See paragraphs [0026]-[0038], [0066]-[0068] and figures 1-2, 7.	1-29
A	US 2001-0030796 A1 (X. STEVE YAO) 18 October 2001 See paragraphs [0075]-[0079] and figures 1A-2.	1-29
A	US 2011-0090936 A1 (VLADIMIR KUPERSHMIDT) 21 April 2011 See paragraphs [0028]-[0029] and figures 2-3.	1-29
A	US 2001-0014106 A1 (SPARTAK GEVORGIAN et al.) 16 August 2001 See paragraphs [0012]-[0016] and figures 1-2.	1-29

☐ Further documents are listed in the continuation of Box C.

☒ See patent family annex.

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"&" document member of the same patent family

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Information on patent family members

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