

Title (en)

MULTI-STAGE OPTICAL PARAMETRIC MODULE AND PICOSECOND PULSED LASER SOURCE INCORPORATING THE MODULE

Title (de)

MEHRSTUFIGES OPTISCHES PARAMETRISCHES MODUL UND PICOSEKUNDENGEPULSTE LASERQUELLE MIT DEM MODUL

Title (fr)

MODULE PARAMÉTRIQUE À PLUSIEURS ÉTAGES ET SOURCE LASER PULSÉE PICOSECONDE INCORPORANT LE MODULE

Publication

**EP 3903387 A4 20221012 (EN)**

Application

**EP 20749420 A 20200129**

Priority

- US 201962799504 P 20190131
- US 201962799512 P 20190131
- US 2020015631 W 20200129

Abstract (en)

[origin: WO2020160116A1] A multi-stage optical parametric (OP) module is configured with upstream, multiple intermediate and output optical parametric amplification (OP A) stages arranged along a single light path and interacting with pump, signal and IR light beams at respective  $\lambda_p$ ,  $\lambda_3$  and  $\lambda_f$  wavelengths. The OPA stages each are provided with a time delay compensation (TDC) assembly alternating with the OPA stages along the single light path. The TDCs assemblies each are configured to compensate for the group velocity mismatch between pump and signal beams and guide the IR, pump and signal beams along the light path between the OPA stages while preventing propagation of an idler beam after each subsequent parametric interaction.

IPC 8 full level

**H01S 3/00** (2006.01); **G02F 1/35** (2006.01); **G02F 1/39** (2006.01)

CPC (source: EP KR)

**G02F 1/3532** (2013.01 - EP); **G02F 1/392** (2021.01 - EP); **H01S 3/0057** (2013.01 - EP KR); **H01S 3/0071** (2013.01 - KR); **H01S 3/0092** (2013.01 - EP KR); **H01S 3/005** (2013.01 - EP); **H01S 3/0071** (2013.01 - EP)

Citation (search report)

- [Y] US 2018233878 A1 20180816 - LEONARDO MANUEL [US], et al
- [XPYI] TZANKOV PANCHO ET AL: "Yb-Fiber Laser Pumped Optical Parametric Sources Using LBO Crystals", 2019 CONFERENCE ON LASERS AND ELECTRO-OPTICS (CLEO), OSA, 5 May 2019 (2019-05-05), pages 1 - 2, XP033570456, DOI: 10.23919/CLEO.2019.8750344
- [XYI] MICHEL E MARHIC ET AL: "High-Nonlinearity Fiber Optical Parametric Amplifier with Periodic Dispersion Compensation", JOURNAL OF LIGHTWAVE TECHNOLOGY, IEEE, USA, vol. 17, no. 2, 1 February 1999 (1999-02-01), XP011029346, ISSN: 0733-8724
- See references of WO 2020160116A1

Designated contracting state (EPC)

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DOCDB simple family (publication)

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DOCDB simple family (application)

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