

Title (en)
DEVICE FOR TRANSPORTING AND CONTROLLING LIGHT PULSES FOR LENSLESS ENDO- MICROSCOPIC IMAGING

Title (de)
VORRICHTUNG ZUM TRANSPORT UND ZUR STEUERUNG DER LICHTIMPULSE ZUR LINSENLOSEN ENDOMIKROSKOPISCHEN BILDGEBUNG

Title (fr)
DISPOSITIF DE TRANSPORT ET DE CONTRÔLE D'IMPULSIONS LUMINEUSES POUR L'IMAGERIE ENDO-MICROSCOPIQUE SANS LENTILLE

Publication
EP 3234666 A1 20171025 (FR)

Application
EP 15821042 A 20151217

Priority
• FR 1462809 A 20141218
• EP 2015080312 W 20151217

Abstract (en)
[origin: WO2016097191A1] According to one aspect, the invention relates to a device for transporting and controlling light pulses for lensless endo-microscopic imaging and comprises: a bundle of N monomode optical fibres (Fi) arranged in a given pattern, each monomode optical fibre being characterized by a relative group delay value (Ax) defined relative to the trip time of a pulse propagating in a reference monomode optical fibre (F 0) of the bundle of fibres (40); an optical device (50) for controlling group speed, comprising a given number M of half-wave plates (P j) that are characterized by a given delay (8t j); a first spatial light modulator (51) suitable for forming from an incident light beam a number N of elementary light beams (B i) each of which is intended to enter into one of said optical fibres, each elementary beam being intended to pass into a given half-wave plate such that the sum of the delay introduced by said half-wave plate and the relative group delay of the optical fibre intended to receive said elementary light beam is minimal in absolute value; a second spatial light modulator (52) suitable for deviating each of the N elementary light beams such that each elementary light beam penetrates into the corresponding optical fibre perpendicularly to the entrance face of the optical fibre.

IPC 8 full level
G02B 6/04 (2006.01); **G02B 23/26** (2006.01)

CPC (source: EP US)
G02B 6/06 (2013.01 - EP US); **G02B 21/0004** (2013.01 - EP US); **G02B 23/2469** (2013.01 - US); **G02B 23/26** (2013.01 - EP US); **H01S 3/0057** (2013.01 - US); **G02B 6/02042** (2013.01 - US); **G02B 6/065** (2013.01 - EP US)

Citation (search report)
See references of WO 2016097191A1

Designated contracting state (EPC)
AL AT BE BG CH CY CZ DE DK EE ES FI FR GB GR HR HU IE IS IT LI LT LU LV MC MK MT NL NO PL PT RO RS SE SI SK SM TR

Designated extension state (EPC)
BA ME

DOCDB simple family (publication)
WO 2016097191 A1 20160623; EP 3234666 A1 20171025; FR 3030956 A1 20160624; FR 3030956 B1 20180323; JP 2018502638 A 20180201; JP 6720183 B2 20200708; US 10571678 B2 20200225; US 2018011309 A1 20180111

DOCDB simple family (application)
EP 2015080312 W 20151217; EP 15821042 A 20151217; FR 1462809 A 20141218; JP 2017533334 A 20151217; US 201515536881 A 20151217