

Title (en)
METHOD AND DEVICE FOR INTERFEROMETRY

Title (de)
VERFAHREN UND VORRICHTUNG ZUR INTERFEROMETRIE

Title (fr)
PROCÉDÉ ET DISPOSITIF D'INTERFÉROMÉTRIE

Publication
EP 2347215 A1 20110727 (DE)

Application
EP 09741220 A 20091012

Priority

- EP 2009007327 W 20091012
- DE 102008052003 A 20081010
- DE 102008052814 A 20081014
- DE 102008062879 A 20081215

Abstract (en)
[origin: WO2010040570A1] The invention relates to a method and to an arrangement for scalable confocal interferometry for distance measurement, for 3-D detection of an object, for OC tomography with an object imaging interferometer and at least one light source. The interferometer has an optical path difference not equal to zero at each optically detected object element. Thus, the maxima of a sinusoidal frequency wavelet, associated with each detected object element, each have a frequency difference Δf_{Objekt} . In order to record the object, at least one spectrally integrally detecting, rastered detector is arranged. Preferably, the light source is designed with a frequency comb, and the frequency comb differences Δf_{Quelle} are changed in a predefined manner over time in a scan during measuring. In the process, the frequency differences Δf_{Quelle} are made equal to the frequency difference Δf_{Objekt} or equal to an integer multiple of the frequency differences Δf_{Objekt} at least once for each object element. However, this can also occur through a scan in the object imaging interferometer. In the scan, a modulation in a signal profile is produced and sequentially detected by means of the rastered detector. The present magnitude of the frequency comb differences Δf_{Quelle} in said signal profile, for example, at the modulation maximum, is determined and is subsequently used to calculate the associated optical path difference of a detected object element. Distances of object elements or changes in the optical path lengths, for example, for a biological microobject, are determined therefrom in a process by imaging.

IPC 8 full level
G01B 9/02 (2006.01); **G02B 21/00** (2006.01)

CPC (source: EP US)
G01B 9/02004 (2013.01 - EP US); **G01B 9/02008** (2013.01 - EP US); **G01B 9/02036** (2013.01 - EP US); **G01B 9/02042** (2013.01 - EP US); **G01B 9/02057** (2013.01 - EP US); **G01B 9/02091** (2013.01 - EP US); **G02B 21/0056** (2013.01 - EP US); **G01B 2210/50** (2013.01 - EP US); **G01B 2290/25** (2013.01 - EP US); **G01B 2290/30** (2013.01 - EP US)

Citation (search report)
See references of WO 2010040570A1

Cited by
CN109073368A

Designated contracting state (EPC)
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 SE SI SK SM TR

Designated extension state (EPC)
AL BA RS

DOCDB simple family (publication)
WO 2010040570 A1 20100415; DE 102008062879 A1 20100512; DE 102008062879 B4 20101028; EP 2347215 A1 20110727; US 2011235045 A1 20110929; US 8605289 B2 20131210

DOCDB simple family (application)
EP 2009007327 W 20091012; DE 102008062879 A 20081215; EP 09741220 A 20091012; US 200913123546 A 20091012