

Title (en)
RAPID DIRECT-TO-DIGITAL HOLOGRAPHIC ACQUISITION OF OBJECT OFF-AXIS ILLUMINATED BY SEVERAL ILLUMINATION SOURCES

Title (de)
SCHNELLE DIREKT-DIGITALE HOLOGRAPHISCHE ERFASSUNG EINES MIT MEHREREN LICHTQUELLEN AUSSERAXIAL BELEUCHTETEN OBJEKTS

Title (fr)
ACQUISITION RAPIDE D'HOLOGRAPHIE DIRECTE-NUMERIQUE INDIRECTE A ECLAIRAGE EN FUSION

Publication
EP 1537458 A2 20050608 (EN)

Application
EP 03770283 A 20030903

Priority

- US 0327575 W 20030903
- US 23404202 A 20020903
- US 23404302 A 20020903
- US 23404402 A 20020903

Abstract (en)
[origin: WO2004023217A2] Systems and methods are described for off-axis object illuminated direct-to-digital holography. A method of recording an off-axis illuminated spatially heterodyne hologram including spatially heterodyne fringes for Fourier analysis, includes: reflecting a reference beam (135) from a reference mirror (140) at a non-normal angle; reflecting an object beam (215) from an object (130) at an off-axis angle with respect to an optical axis defined by a focusing lens (145); focusing the reference beam and the object beam at a focal plane of a digital recorder to form the off-axis illuminated spatially heterodyne hologram including spatially heterodyne fringes for Fourier analysis; digitally recording the off-axis illuminated spatially heterodyne hologram including spatially heterodyne fringes for Fourier analysis; Fourier analyzing the recorded off-axis illuminated spatially heterodyne hologram including spatially heterodyne fringes by transforming axes of the recorded off-axis illuminated spatially heterodyne hologram including spatially heterodyne fringes in Fourier space to sit on top of a heterodyne carrier frequency defined as an angle between the reference beam and the object beam; applying a digital filter to cut off signals around an original origin; and then performing an inverse Fourier transform.

IPC 1-7
G03H 1/00

IPC 8 full level
G03B 15/00 (2006.01); **G01B 9/021** (2006.01); **G02F 1/13** (2006.01); **G03H 1/04** (2006.01); **G03H 1/08** (2006.01); **G03H 1/16** (2006.01); **G03H 1/24** (2006.01); **G06T 1/00** (2006.01)

CPC (source: EP KR)
G01B 9/021 (2013.01 - EP); **G03H 1/00** (2013.01 - KR); **G03H 1/08** (2013.01 - KR); **G03H 1/0866** (2013.01 - EP); **G03H 1/0891** (2013.01 - EP); **G03H 1/16** (2013.01 - KR); **G03H 1/24** (2013.01 - EP); **G03H 2001/0456** (2013.01 - EP); **G03H 2260/54** (2013.01 - EP)

Citation (search report)
See references of WO 2004023219A2

Designated contracting state (EPC)
AT BE BG CH CY CZ DE DK EE ES FI FR GB GR HU IE IT LI LU MC NL PT RO SE SI SK TR

DOCDB simple family (publication)
WO 2004023217 A2 20040318; WO 2004023217 A3 20040422; AU 2003268404 A1 20040329; AU 2003268404 A8 20040329; AU 2003278759 A1 20040329; AU 2003278759 A8 20040329; AU 2003278760 A1 20040329; AU 2003278760 A8 20040329; EP 1537456 A2 20050608; EP 1537457 A2 20050608; EP 1537458 A2 20050608; JP 2005537516 A 20051208; JP 2005537517 A 20051208; JP 2005537518 A 20051208; KR 100712708 B1 20070502; KR 100715033 B1 20070509; KR 100717414 B1 20070511; KR 20050057154 A 20050616; KR 20050057155 A 20050616; KR 20060055425 A 20060523; WO 2004023218 A2 20040318; WO 2004023218 A3 20040422; WO 2004023219 A2 20040318; WO 2004023219 A3 20040422

DOCDB simple family (application)
US 0327569 W 20030903; AU 2003268404 A 20030903; AU 2003278759 A 20030903; AU 2003278760 A 20030903; EP 03749369 A 20030903; EP 03770282 A 20030903; EP 03770283 A 20030903; JP 2004534494 A 20030903; JP 2004534499 A 20030903; JP 2004534500 A 20030903; KR 20057003726 A 20050303; KR 20057003727 A 20050303; KR 20057003728 A 20050303; US 0327574 W 20030903; US 0327575 W 20030903