

Title (en)
Combination of a luminescent material with a hologram

Title (de)
Kombination eines Lumineszenzstoffes mit einem Hologramm

Title (fr)
Combinaison d'une substance luminescente et d'un hologramme

Publication
EP 2409849 A1 20120125 (DE)

Application
EP 10170447 A 20100722

Priority
EP 10170447 A 20100722

Abstract (en)
Composition comprises: a luminescent substance containing (a) a component excitable by infrared radiation, comprising at least one oxide, oxide sulfide or oxide fluoride of lanthanide ions, and (b) optionally a component excitable by UV-radiation; and a holographic carrier for recording or reconstruction of a volume hologram. Independent claims are included for: (1) products that are marked with the composition; (2) readout system for detection of a luminescent and for recording and reconstruction or a volume hologram in or on a product, containing at least one radiation source to excite the luminescent substance, preferably a first radiation source in the infra red region and a second source of radiation in the UV region, a radiation source for recording and reconstruction of the volume hologram, optionally a contact sensor for activating the radiation sources in contact of the readout system with the product, and at least one optical detection element for the detection of luminescence substance and the volume hologram; and (3) method for combined detection of authenticity of a luminescent substance and a volume hologram in or on a product comprising providing the product, which comprises the composition to be tested, irradiating the product with at least one radiation source to excite the luminescent substance, e.g. a first radiation source in the infra region and a second radiation source in the UV region to produce radiation emission of infra red and UV-excitabile components of a luminescence marker, and at least one radiation source for the reconstruction of the volume hologram, separately determining the generated emission radiation, and determining a measured signal from the verified emission rays or derived signal obtained by cryptographic measures and optionally comparing the signal with a predetermined pattern.

Abstract (de)
Die Erfindung betrifft eine Zusammensetzung zur Markierung von Erzeugnissen, umfassend einen Lumineszenzstoff, basierend auf Oxiden, Oxidsulfiden und/oder Oxidfluoriden von Lanthanoidionen und einem holografischen Träger zur Aufnahme oder Rekonstruktion eines Volumenhologramms. Der Lumineszenzstoff weist ein charakteristisches Emissionsspektrum auf und kann in Kombination mit dem Volumenhologramm zur Markierung und/oder Identifizierung von Erzeugnissen wie etwa Stoffen oder Stoffgemischen eingesetzt werden.

IPC 8 full level
B41M 3/14 (2006.01); **B42D 15/10** (2006.01); **D21H 21/48** (2006.01); **G07D 7/12** (2006.01)

CPC (source: EP)
B41M 3/144 (2013.01); **D21H 21/48** (2013.01); **G07D 7/0032** (2017.04); **G07D 7/1205** (2017.04)

Citation (applicant)
• WO 0060527 A1 20001012 - SICPA HOLDING SA [CH], et al
• WO 2008000461 A2 20080103 - SWISS AUTHENTICATION GMBH [DE], et al
• US 6802992 B1 20041012 - WIECZORECK JUERGEN [DE], et al
• US 6686074 B2 20040203 - MUTH OLIVER [DE], et al
• US 5453340 A 19950926 - KAWABATA MASAMI [JP], et al
• US 2009286165 A1 20091119 - SUGIURA YOSHIHIRO [JP]

Citation (search report)
• [XYI] WO 2004102490 A1 20041125 - BUNDESDRUCKEREI GMBH [DE], et al
• [XYI] EP 1854642 A2 20071114 - JDS UNIPHASE CORP [US]
• [XYI] WO 2010046708 A1 20100429 - DRINKWATER KENNETH JOHN [GB]
• [XYI] US 2004099740 A1 20040527 - CHRESAND THOMAS J [US], et al
• [XYI] DE 102007058888 A1 20090610 - INFORMIUM AG [DE]
• [XYI] WO 9946133 A1 19990916 - RUE DE INT LTD [GB], et al
• [YA] US 5453340 A 19950926 - KAWABATA MASAMI [JP], et al

Cited by
CN105667111A; DE102017103780A1

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 SE SI SK SM TR

Designated extension state (EPC)
BA ME RS

DOCDB simple family (publication)
EP 2409849 A1 20120125; WO 2012010665 A2 20120126; WO 2012010665 A3 20120607

DOCDB simple family (application)
EP 10170447 A 20100722; EP 2011062552 W 20110721