

Title (en)
SECURITY ELEMENT AND VERIFICATION METHOD HAVING AN EXCITATION-DEPENDENT OPTICAL EFFECT IN THE NON-VISIBLE WAVELENGTH REGION

Title (de)
SICHERHEITSELEMENT UND VERIFIKATIONSVERFAHREN MIT EINEM ANREGUNGSABHÄNGIGEN OPTISCHEN EFFEKT IM NICHT SICHTBAREN WELLENLÄNGENBEREICH

Title (fr)
ÉLÉMENT DE SÉCURITÉ ET PROCÉDÉ DE VÉRIFICATION À EFFET OPTIQUE FONCTION DE L'EXCITATION DANS LA GAMME DES LONGUEURS D'ONDE NON VISIBLES

Publication
EP 3079918 A2 20161019 (DE)

Application
EP 14809440 A 20141210

Priority
• DE 102013225514 A 20131210
• EP 2014077286 W 20141210

Abstract (en)
[origin: WO2015086709A2] The invention relates to a security element (110), comprising a substrate layer and a security structure (115) formed on the substrate layer, which is constructed having a structural color (210) comprising microcapsules (10) containing colloidal particles (13), which by means of a structural excitation comprising the creation of an electrical and/or magnetic field can be arranged and/or re-arranged in a crystal-like structure to each other. The crystal-like structure (15) has reflection and/or transmission properties for light that can be influenced and/or adjusted by way of the structural excitation. In a non-excited state, the microcapsules (10) have an increased transmission capability and reduced reflection ability for at least one wavelength in the non-visible wavelength region. In the structural excited state, in which an electrical and/or magnetic field generated by way of structural excitation exists in the region of the microcapsules (10), the microcapsules (10) have a reduced transmission capability and an increased reflection ability compared to the non-structural excited state. The invention further relates to a verification method.

IPC 8 full level
B42D 25/369 (2014.01); **B42D 25/378** (2014.01); **B42D 25/382** (2014.01); **B42D 25/387** (2014.01); **G07D 7/12** (2016.01)

CPC (source: EP)
B42D 25/369 (2014.10); **B42D 25/378** (2014.10); **B42D 25/382** (2014.10); **B42D 25/387** (2014.10); **G07D 7/04** (2013.01); **G07D 7/1205** (2017.04)

Citation (search report)
See references of WO 2015086709A2

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)
DE 102013225514 A1 20150611; EP 3079918 A2 20161019; EP 3079918 B1 20190925; WO 2015086709 A2 20150618; WO 2015086709 A3 20150806

DOCDB simple family (application)
DE 102013225514 A 20131210; EP 14809440 A 20141210; EP 2014077286 W 20141210