

Title (en)  
SECURITY ELEMENT WITH TWO-DIMENSIONAL NANOSTRUCTURE, AND PRODUCTION METHOD FOR SAID SECURITY ELEMENT

Title (de)  
SICHERHEITSELEMENT MIT ZWEIDIMENSIONALER NANOSTRUKTUR UND HERSTELLVERFAHREN FÜR DIESES SICHERHEITSELEMENT

Title (fr)  
ÉLÉMENT DE SÉCURITÉ COMPRENANT UNE NANOSTRUCTURE À DEUX DIMENSIONS ET PROCÉDÉ DE FABRICATION POUR CET ÉLÉMENT DE SÉCURITÉ

Publication  
**EP 3727870 A1 20201028 (DE)**

Application  
**EP 18829361 A 20181219**

Priority  
• DE 102017130589 A 20171219  
• EP 2018085914 W 20181219

Abstract (en)  
[origin: WO2019121964A1] The invention relates to a security element for a value document, wherein the security element (S) has: a dielectric substrate (2), in which a two-dimensionally periodic nanostructure (1) is formed, which has a multiplicity of base surface elements (9), which define a base plane (5), and surface elements (3) which are raised or lowered by contrast, wherein a distance measured perpendicularly to the base plane (5) exists between the base surface elements (9) and the surface elements (3), and connection flanks are formed between the base surface elements (9) and the surface elements (3), wherein the base surface elements (9) and the surface elements (3) are each covered by a metallic or highly refractive layer, which is thinner than the distance, and the base surface elements (9) and the surface elements (3) are arranged alternately in the nanostructure (1) in a regular pattern and in two directions running parallel to the base plane (5), with the associated period (d) of the arrangement of the surface elements (3) being between 100 nm and 450 nm, wherein the connection flanks are also covered by the layer, such that this covers the nanostructure (1) continuously.

IPC 8 full level  
**B42D 25/324** (2014.01); **B42D 25/373** (2014.01)

CPC (source: EP)  
**B42D 25/324** (2014.10); **B42D 25/328** (2014.10); **B42D 25/373** (2014.10)

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 102017130589 A1 20190619**; CN 111511571 A 20200807; CN 111511571 B 20211123; EP 3727870 A1 20201028; EP 3727870 B1 20240207; WO 2019121964 A1 20190627

DOCDB simple family (application)  
**DE 102017130589 A 20171219**; CN 201880081940 A 20181219; EP 18829361 A 20181219; EP 2018085914 W 20181219