

Title (en)

PROCESSES FOR PRODUCING OPTICAL EFFECTS LAYERS

Title (de)

VERFAHREN ZUR HERSTELLUNG VON SCHICHTEN MIT OPTISCHEN EFFEKTEN

Title (fr)

PROCÉDÉS DE PRODUCTION DE COUCHES À EFFETS OPTIQUES

Publication

EP 4338854 A2 20240320 (EN)

Application

EP 23218609 A 20231220

Priority

EP 23218609 A 20231220

Abstract (en)

The invention relates to the field of the protection of security documents such as for example banknotes and identity documents against counterfeit and illegal reproduction. In particular, the present invention provides processes for producing optical effect layers (OELs) comprising at least a first motif and a second motif, each of said motifs independently comprising platelet-shaped magnetic or magnetizable pigment particles.

IPC 8 full level

B05D 3/00 (2006.01); **B05D 5/06** (2006.01)

CPC (source: EP)

B05D 3/207 (2013.01); **B05D 5/065** (2013.01); **B05D 7/52** (2013.01); **B05D 7/56** (2013.01); **B05D 2252/10** (2013.01)

Citation (applicant)

- US 2570856 A 19511009 - CARLTON PRATT BURT, et al
- US 3676273 A 19720711 - GRAVES IRVING STUART
- US 3791864 A 19740212 - STEINGROEVER E
- US 5630877 A 19970520 - KASHIWAGI TAKESHI [JP], et al
- US 5364689 A 19941115 - KASHIWAGI TAKESHI [JP], et al
- WO 02090002 A2 20021114 - FLEX PRODUCTS INC [US]
- WO 2005002866 A1 20050113 - SICPA HOLDING SA [CH], et al
- WO 2012104098 A1 20120809 - SICPA HOLDING SA [CH], et al
- US 4838648 A 19890613 - PHILLIPS ROGER W [US], et al
- WO 02073250 A2 20020919 - SICPA HOLDING SA [CH], et al
- EP 0686675 B1 19980204 - BASF AG [DE]
- WO 03000801 A2 20030103 - FLEX PRODUCTS INC [US]
- US 6838166 B2 20050104 - PHILLIPS ROGER W [US], et al
- WO 2007131833 A1 20071122 - SICPA HOLDING SA [CH], et al
- EP 2402401 B1 20131113 - JDS UNIPHASE CORP [US]
- WO 2019103937 A1 20190531 - VIAVI SOLUTIONS INC [US]
- EP 3587500 A1 20200101 - VIAVI SOLUTION INC [US]
- EP 3587501 A1 20200101 - VIAVI SOLUTIONS INC [US]
- EP 3587502 A1 20200101 - VIAVI SOLUTIONS INC [US]
- EP 3587503 A1 20200101 - VIAVI SOLUTIONS INC [US]
- WO 2020006286 A1 20200102 - VIAVI SOLUTIONS INC [US]
- WO 2020131700 A1 20200625 - VIAVI SOLUTIONS INC [US]
- US 2021101402 A1 20210408 - KOHLMANN PAUL THOMAS [US], et al
- US 2021038812 A1 20210211 - LOUTSEIKO MIKHAIL [US], et al
- US 2022282094 A1 20220908 - RAKSHA VLADIMIR P [US], et al
- WO 2019014142 A1 20190117 - EXTREME ROCK DESTRUCTION LLC [US]
- WO 2019141453 A1 20190725 - SICPA HOLDING SA [CH]
- WO 2015086257 A1 20150618 - SICPA HOLDING SA [CH]
- US 8025952 B2 20110927 - RAKSHA VLADIMIR P [US], et al
- EP 1819525 B1 20100317 - SICPA HOLDING SA [CH]
- WO 2022049024 A1 20220310 - SICPA HOLDING SA [CH]
- US 7047883 B2 20060523 - RAKSHA VLADIMIR P [US], et al
- WO 2022490241 A1
- US 2005106367 A1 20050519 - RAKSHA VLADIMIR P [US], et al
- WO 2020160993 A1 20200813 - SICPA HOLDING SA [CH]
- WO 2014198905 A2 20141218 - SICPA HOLDING SA [CH]
- WO 2013167425 A1 20131114 - SICPA HOLDING SA [CH]
- WO 2021083809 A1 20210506 - SICPA HOLDING SA [CH]
- WO 2021083808 A1 20210506 - SICPA HOLDING SA [CH]
- WO 2014108404 A2 20140717 - SICPA HOLDING SA [CH]
- WO 2014108303 A1 20140717 - SICPA HOLDING SA [CH]
- WO 2017064052 A1 20170420 - SICPA HOLDING SA [CH]
- WO 2017080698 A1 20170518 - SICPA HOLDING SA [CH]
- WO 2017148789 A1 20170908 - SICPA HOLDING SA [CH]
- WO 2018054819 A1 20180329 - SICPA HOLDING SA [CH]
- WO 2019215148 A1 20191114 - SICPA HOLDING SA [CH]
- WO 2020193009 A1 20201001 - SICPA HOLDING SA [CH]
- WO 2019038371 A1 20190228 - SICPA HOLDING SA [CH]
- WO 2019038370 A1 20190228 - SICPA HOLDING SA [CH]
- WO 2019038369 A1 20190228 - SICPA HOLDING SA [CH]
- WO 2021239607 A1 20211202 - SICPA HOLDING SA [CH]
- EP 2157141 A1 20100224 - JDS UNIPHASE CORP [US]
- EP 2157141 A1 20100224 - JDS UNIPHASE CORP [US]

- WO 2018019594 A1 20180201 - SICPA HOLDING SA [CH]
- EP 3224055 B1 20180822 - SICPA HOLDING SA [CH]
- US 2007172261 A1 20070726 - RAKSHA VLADIMIR P [US], et al
- CN 102529326 B 20140806 - HUIZHOU HUAYANG OPTICAL TECHNOLOGY CO LTD
- WO 2015082344 A1 20150611 - SICPA HOLDING SA [CH]
- WO 2016026896 A1 20160225 - SICPA HOLDING SA [CH]
- WO 2018141547 A1 20180809 - SICPA HOLDING SA [CH]
- WO 2021259527 A1 20211230 - SICPA HOLDING SA [CH]
- WO 2010058026 A2 20100527 - SICPA HOLDING SA [CH], et al
- WO 2012025206 A2 20120301 - GIESECKE & DEVRIENT GMBH [DE], et al
- WO 2019233624 A1 20191212 - GIESECKE DEVRIENT CURRENCY TECH GMBH [DE]
- WO 2020244805 A1 20201210 - GIESECKE DEVRIENT CURRENCY TECH GMBH [DE]
- EP 3254863 A1 20171213 - GIESECKE+DEVRIENT CURRENCY TECH GMBH [DE]
- US 2008160226 A1 20080703 - KAULE WITTICH [DE], et al
- US 2005180020 A1 20050818 - STEENBLIK RICHARD A [US], et al
- EP 2284017 A2 20110216 - VISUAL PHYSICS LLC [US]
- WO 2018151547 A1 20180823 - BEFS CO LTD [KR]
- R.H. LEACHR.J. PIERCE: "The Printing ink manual", 2011, CAMBRIDGE UNIVERSITY PRESS, article "Fundamentals and Applications", pages: 359 - 360
- "Handbook of Condensed Matter and Materials Data", article "Soft Magnetic Materials", pages: 758 - 793
- "Magnetic Oxides", 2005, SPRINGER, pages: 811 - 813
- "Ferromagnetic Materials", vol. 2, 1999, ELSEVIER, article "Soft Magnetic Metallic Materials", pages: 55 - 188
- "Ferrites for non-microwave Applications", 1999, ELSEVIER, pages: 189 - 241
- C. MOOSBRUGGER: "Electric and Magnetic Properties of Metals", 2000, ASM INTERNATIONAL, article "Magnetically Soft Materials", pages: 196 - 209
- "Handbook of modern Ferromagnetic Materials", 2002, KLUWER ACADEMIC PUBLISHERS, article "High-permeability High-frequency Metal Strip", pages: 155 - 182
- "Smithells Metals Reference Book", 1992, BUTTERWORTH-HEINEMANN LTD, article "Magnetically Soft Materials", pages: 20 - 9
- Z.Q. ZHUD. HOWE: "Halbach permanent magnet machines and applications: a review", IEE. PROC. ELECTRIC POWER APPL., vol. 148, 2001, pages 299 - 308, XP006016918, DOI: 10.1049/ip-epa:20010479

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 ME MK MT NL NO PL PT RO RS SE SI SK SM TR

Designated extension state (EPC)

BA

Designated validation state (EPC)

KH MA MD TN

DOCDB simple family (publication)

EP 4338854 A2 20240320

DOCDB simple family (application)

EP 23218609 A 20231220