

**Internal distribution code:**

- (A) [ - ] Publication in OJ
- (B) [ - ] To Chairmen and Members
- (C) [ - ] To Chairmen
- (D) [ X ] No distribution

**Datasheet for the decision  
of 4 February 2020**

**Case Number:** T 1615/15 - 3.2.05

**Application Number:** 07789183.6

**Publication Number:** 2054241

**IPC:** B42D15/10, B42D15/00

**Language of the proceedings:** EN

**Title of invention:**  
Photonic crystal security device

**Patent Proprietor:**  
De La Rue International Limited

**Opponents:**  
Bundesdruckerei GmbH  
CCL Secure Pty Ltd  
PPG Industries Ohio, Inc.

**Relevant legal provisions:**  
EPC 1973 Art. 56

**Keyword:**  
Inventive step (no)



**Beschwerdekammern**

**Boards of Appeal**

**Chambres de recours**

Boards of Appeal of the  
European Patent Office  
Richard-Reitzner-Allee 8  
85540 Haar  
GERMANY  
Tel. +49 (0)89 2399-0  
Fax +49 (0)89 2399-4465

**Case Number: T 1615/15 - 3.2.05**

**D E C I S I O N**  
**of Technical Board of Appeal 3.2.05**  
**of 4 February 2020**

**Appellant:**  
(Patent Proprietor)  
De La Rue International Limited  
De La Rue House,  
Jays Close,  
Viables  
Basingstoke, Hampshire RG22 4BS (GB)

**Representative:**  
Gill Jennings & Every LLP  
The Broadgate Tower  
20 Primrose Street  
London EC2A 2ES (GB)

**Respondent I:**  
(Opponent 1)  
Bundesdruckerei GmbH  
Oranienstr. 91  
10969 Berlin (DE)

**Representative:**  
Patentanwälte Bressel und Partner mbB  
Potsdamer Platz 10  
10785 Berlin (DE)

**Respondent II:**  
(Opponent 2)  
CCL Secure Pty Ltd  
Potter Street  
Craigieburn VIC 3064 (AU)

**Representative:**  
Stephen Walker  
Lincoln IP  
9 Victoria Street  
Aberdeen AB10 1XB (GB)

**Respondent III:**  
(Opponent 3)  
PPG Industries Ohio, Inc.  
3800 West 143rd Street  
Cleveland, OH 44111 (US)

**Representative:**  
f & e patent  
Fleischer, Engels & Partner mbB, Patentanwälte  
Braunsberger Feld 29  
51429 Bergisch Gladbach (DE)

**Decision under appeal:**      **Decision of the Opposition Division of the  
European Patent Office posted on 12 June 2015  
revoking European patent No. 2054241 pursuant to  
Article 101(3) (b) EPC.**

**Composition of the Board:**

**Chair**                      M. Poock  
**Members:**                O. Randl  
                                  T. Karamanli

## **Summary of Facts and Submissions**

- I. The proprietor of European patent No. 2 054 241 ("the patent") filed an appeal against the decision of the opposition division revoking the patent.

The opposition division was of the opinion that the subject-matter of claim 1 of each of the requests then on file (patent as granted (main request) and auxiliary requests 1 to 6) lacked novelty over the state of the art.

Among the documents cited by the division, U.S. patent application 2005/0228072, which will be referred to as document "D4" in the following, was particularly relevant for the appeal proceedings.

- II. The oral proceedings before the board took place on 4 February 2020 in the absence of the duly summoned appellant (patent proprietor) and respondents II and III (opponents 2 and 3).
- III. The appellant requested in writing that the decision under appeal be set aside and that the patent be maintained as amended on the basis of the claims of its main (and sole) request filed by letter dated 23 December 2019.

Respondent I (opponent 1) requested that the appeal be dismissed.

Respondents II and III (opponents 2 and 3) did not file any requests.

IV. Claim 1 of the sole request on file reads:

"An optically variable security device for a security document, the optically variable security device comprising a photonic crystal which, upon receipt of incident light, generates a first optical effect, and which, when the device is subjected to an external stimulus in the form of the device being pressed, generates a second optical effect that is different from the first optical effect so as to provide authentication of the security device, wherein at least one of the first and second optical effects is an optically variable effect observable over a set of directions and caused by the light being selectively reflected or transmitted by the crystal, wherein the application of the stimulus causes a modification in the periodic spacing of one or more refractive entities within the crystal structure, or wherein the application of the stimulus causes a modification in the refractive index of one or more refractive entities within the crystal structure, wherein, following the removal of the stimulus, the effect of the stimulus upon the crystal remains for a delay period, and wherein the said first and second optical effects comprise first and second optically variable effects respectively, wherein the second optically variable effect is observable over the said set of directions wherein, when the device is illuminated with a white light source, the first and second optically variable effects are colour effects, and wherein the first optically variable effect is a first angularly dependent colour effect and the second optically variable effect is a second angularly dependent colour effect, that is different from the first."

V. The parties' submissions in respect of the novelty and inventive step of the subject-matter of claim 1 in view of the disclosure of document D4 were as follows:

(a) Novelty

(i) Appellant (patent proprietor)

Claim 1 of the main request requires an "optically variable security device". A "security feature" is different from a "security device". The direct and unambiguous teaching of document D4 is that the "security feature" is a property, not a physical entity (see paragraph [0162]). At best, document D4 teaches that specific types of security documents (e.g. banknotes) might be provided with the property ("feature") in question. This is no direct and unambiguous disclosure of a "security device".

Document D4 mentions the word "security" in only two instances. Virtually none of the examples even mentions any optical effect.

The decision refers to paragraph [0093] as providing the disclosure sufficient to destroy the novelty of granted claim 1. However, there is no reference in this paragraph to security devices or disclosure that the "stimulated" effect may be used as a security feature. Rather, paragraph [0093] itself teaches that this effect is not to be applied universally. It refers to some special uses such as the production of coatings or coloured films.

Document D4 does not disclose that the external stimulus is provided by the device being pressed. Pressing is not the same as compressing. The reference

to paragraph [0093] is clearly not correct. Document D4 does not disclose a security device for a security document that can be pressed such as to cause a first optically variable colour effect and such that it causes a different second optically variable colour effect. At best, document D4 suggests that two different optical effects may be produced through elongation and compression. There is no direct and unambiguous teaching of the first and second angularly dependent effects, nor is there any teaching that each effect is a colour effect, or that the effects may be used to provide authentication. For the purposes of novelty, the features have to be disclosed in combination.

Document D4 is also silent on any delay. The decision under appeal suggests that a relaxation time is always present. However, claim 1 cannot be interpreted so broadly. The person of ordinary skill in the art would have understood that the purpose behind the claimed delay period was to allow the effect of the stimulus to be observed following the removal of the stimulus. This interpretation of claim 1 is the only interpretation consistent with the patent specification.

Thus, the subject-matter of claim 1 of the main request is clearly new over the disclosure of document D4.

(ii) Respondent I (opponent 1)

The subject-matter of claim 1 lacks novelty over document D4.

This document deals with the production of photonic crystals. The abstract itself reveals that "the

materials according to the invention exhibit a viewing angle-dependent colour effect with freely adjustable mechanical properties".

Paragraph [0024] discloses that there are additional effects when the material is elongated. In paragraph [0093], there is an explicit reference to "compression", but this is not even required because fundamentally, if something can be stretched, it can also be compressed. The physical effect of the elongation can also be expected under compression, as both lead to a change in the periodicity of the material. After compression, the angle-dependent colour effect is still angle-dependent. Only the crystal periodicity is changed by the compression.

In principle, it is possible to obtain photonic crystals that have a complete band gap for certain wavelengths, so that light of these wavelengths cannot propagate in the crystal. However, there are no crystals available which act as perfect mirrors over the entire wavelength range. In all known crystals, there is an angle-dependent colour effect at the edge of the band gap. Put another way, the colour effect described in paragraph [0093] cannot be a mere colour effect unless the photonic crystal used is a perfect mirror - which it is not. When the crystal is not perfect, there is necessarily an angle-dependent effect.

It should be noted that what is claimed is not the use of a photonic crystal as a security feature, or a method according to which a first angle-dependent colour effect is observed, a second one is then observed after compression, and finally the outcome is used to determine whether the object under



consideration is authentic or counterfeit. What is claimed is an object that shows certain features when treated in a particular way. But this is also what is disclosed in document D4. As soon as a device according to document D4 is provided on a banknote and the banknote is compressed, the colour effect changes compared with the situation where the banknote is not compressed. This is simply an intrinsic effect of the device disclosed in document D4.

Document D4 discloses a "composite material". Both paragraph [0162] and paragraph [0093] refer to this "composite material". The skilled person therefore would have read all text passages in document D4 with reference to this "composite material".

Paragraph [0162] states in particular: "The composite materials can be incorporated into surfaces, such as smart cards, banknotes, OEM products, etc, as security features", so it is unmistakably clear and follows from the context that the use of the "composite material" as a "security feature" is equivalent to the creation of a "security device" according to the opposed patent. Thus, the effects and features described are also disclosed for the use as a security device.

Paragraphs [0093] and [0162] can be read in conjunction as a single disclosure. Paragraph [0162] indicates in general terms what the materials described in document D4 can be used for. The only indications of use mentioned in this paragraph relate to products in which the material is a security feature dependent on the direction of observation. The skilled person will therefore read this use in conjunction with all the materials mentioned above and will regard the material and the use as a safety device to be a described combination. No further mental steps are necessary for

this. In paragraph [0093] it is stated that for certain applications, such as the production of coatings or coloured films, it is favourable for the polymer material of the matrix phase-forming shell of the core/shell particles according to the invention to be an elastically deformable polymer, for example a polymer having a low glass transition temperature. When read in combination, paragraphs [0093] and [0162] disclose that the material of document D4 is used as a coating or coloured film on a smart card or banknote.

Pressure is mentioned on page 180, right-hand column, line 45. Fig. 2(b) and 2(c) are also relevant: Fig. 2(c) shows the reflectivity of the photonic crystal as a function of wavelength. With increasing pressure on the photonic crystal, the reflectivity curve shifts to other wavelengths. The displacement of the maximum is shown in Fig. 2(b) with cyclically applied pressure. It can be seen that optical effects before and after the application of pressure differ from each other. For the expert, such a shift of the maximum as a function of pressure applied to the photonic crystal undoubtedly represents an optically variable effect as understood in the opposed patent.

The opposition division correctly found that flexible materials always have a delay time. In practice an elastic material cannot immediately return to its basic state when a mechanical deformation force is released or decreased. This would correspond to an instantaneous change in momentum, which would require an infinitely high elastic restoring force. This is physically impossible because it would also be accompanied by infinitely high stored energy. Thus, the abrupt termination of the compression results in a delayed

deformation and thus an after-effect of the changed optical effect.

Furthermore, the opposed patent does not indicate anywhere what the timescale of the delay is, so the term must be interpreted broadly and comprehensively. The interpretation that the "delay period" must necessarily be interpreted as referring to human perception is not acceptable. The patent also refers to light including infrared and ultraviolet components (see paragraph [0016]), both of which are imperceptible for humans. It also explicitly states in paragraph [0038] that the security device can advantageously be machine-readable. This should also concern the effect caused by external stimulation. A short "delay/after-effect" of the effect would be sufficient.

Paragraph [0093] of document D4 discloses that the colour of a moulding can be changed by expansion and compression. Depending on the direction of expansion or compression of the photonic crystal, the resulting two colour effects result are necessarily angle-dependent.

Paragraph [0093] cannot be understood to mean that the colour of the moulded film or coating is changed due to pressures applied during moulding. This can be seen, for instance, from the fact that the passage refers to a variation of the "colour of the moulding" and may "result in mouldings which exhibit dichroism".

Thus, the subject-matter of claim 1 lacks novelty or at the very least inventiveness over the disclosure of document D4.

(b) Inventive step

(i) Appellant (patent proprietor)

Document D4 is unsuitable as the closest prior art because it is directed to the field of photonic materials and not to the field of security devices. The document mentions security devices only briefly as a specific application in which the optical effect of the photonic materials - which are the main focus of document D4 - can be used as a security feature.

Document D4 also lacks any teaching of sufficient technical relevance to challenge the inventive step of claim 1. By way of this novel combination of features, a security device for a security document is provided in which a user, say an authenticating user, can press the device to act as a stimulus. The device therefore provides an interactive effect that contributes to the enhanced level of security provided by the invention.

When in use, and prior to being pressed, the security device has an angle-dependent optical effect when viewed in white light, for instance exhibited as a red-to-green colour shift when the device is tilted through a range of viewing angles. In this way a first level of security is provided. A security device possessing a security characteristic similar to this first level of security is disclosed in D4, paragraph [0162], upon which the finding of the opposition division relied.

The objective technical problem to be solved may be formulated as "how to improve the security provided by a practical security device containing a photonic crystal".

In considering how the person of ordinary skill in the art would seek to provide such an improvement, it is important to keep in mind that the skilled person is incapable of making inventive leaps. Following the teaching of document D4, the skilled person would most likely attempt to solve the above-stated problem by combining the effect from the photonic crystal in the disclosed embodiment with other, known security features. This is an avenue of development that the person skilled in the field of security devices, such as that mentioned in paragraph [0162] of document D4, would pursue, and might, for example, involve additionally incorporating known security features such as holograms, specialised inks or printing techniques into the surfaces and products disclosed in that paragraph. When doing so, the skilled person might for example look to another part of document D4, and would most likely be led to the use of some form of specialised pigments, such as those taught in paragraph [0033].

The test for the assessment of inventive step centres on the question of what the skilled person would do, not what they could do. Accordingly, the skilled person would adapt the disclosed security device as suggested above, and would certainly not consider any development that could lead to the distinguishing features. Indeed, any suggestion that document D4 would provide the skilled person with teaching towards the presently claimed novel combination of features must rely on that skilled person somehow being motivated to give selective attention to limited parts of the disclosure of prior-art documents. This form of "cherry picking" is not permitted in an analysis of inventive step.

When such lines of reasoning are excluded, it is evident that there is no teaching that would cause the skilled person to contemplate using authentication by way of two different angular colour-shift effects via a pressing interaction with a delay period.

The indication given by the board in its preliminary opinion on pages 17 and 18 is also relevant to this. The board notes that paragraph [0093] of document D4, which mentions mouldings having a colour that varies on elongation and compression, is in no way related to the disclosure in paragraph [0162] of document D4, which mentions the use of viewing angle-dependent colour in security features. It is evident from reading that document that the skilled person would consider the specific applications mentioned in paragraph [0162] to be specific to an entirely different field of application, namely security features for smart cards, banknotes, etc., which would not be suitable for elongation or compression at all, and in many cases would more likely be implemented with thermoplastic applications for example, such as those described in paragraph [0025] of document D4, rather than with any elastically deformable material.

Indeed, nowhere in the prior art would the skilled person be able to find any teaching to provide (i) an interactive function, (ii) an interactive function of pressing and (iii) use of the same photonic crystal to produce a second optically variable effect which is angularly dependent.

It is also critical to note that document D4 contains no teaching of the use of features of photonic crystals involving any kind of deformation, let alone pressing and a delay period, in a security context, for a

security document. Without any teaching about the security context of an effect, such as that described in connection with the deformable polymer described in paragraph [0093] of document D4 and relied upon by the opposition division, the skilled person could not even begin to consider implementing such effects in this context. Moreover, since the notional skilled person is not permitted to come to any inventive realisations, the skilled person could not consider such a combination of features, and so would be unable to arrive at the subject-matter of claim 1.

Nowhere in the prior art is it taught that an external pressing stimulus can be used to provide a security function at all, let alone in a photonic crystal security device; this function is achieved by applying the pressing and observing a second angle-dependent optically variable effect that is different from the first angle-dependent optically variable effect, to which the appearance of the device only returns after a delay period. Therefore it must be concluded that the skilled person in possession of the available prior-art documents and starting from document D4 would not be prompted, or even able, to modify that closest prior art to arrive at the presently claimed combination of features.

In contrast to any development or modification that would be available to the un inventive skilled person, the novel functionality provided by the security device defined by claim 1 solves the above-stated problem by way of a solution that is quite different from any disclosed in the available prior art.

This inventive functionality makes it possible to achieve an enhanced level of security, over and above

the first level of security provided by the security document mentioned in paragraph [0162] of document D4, as follows.

An authenticating user applies a stimulus by pressing the security device. The device has a delay, so the user can cease the application of pressure by removing their finger and yet still observe the second optical effect resulting from pressing the device. The authenticating user can then see in the device a second angle-dependent optically variable effect, for example a green-to-blue viewing angle-dependent colour shift, different from the colour shift visible prior to the user pressing the device, which was red-to-green in that example. This new colour-shift effect then persists for a delay period. Thus, by exhibiting two different optically variable effects that may be interactively displayed in this particular manner, an enhanced level of security is provided.

The subject-matter of claim 1 according to our newly filed main request therefore solves the above-stated problem in a manner that would not be available to the skilled person starting from document D4. Accordingly, the subject-matter of claim 1 is inventive.

(ii) Respondent I (opponent 1)

If the board should reach the conclusion that the features of claim 1 are not disclosed in combination, combining them is at least suggested in document D4.



## **Reasons for the Decision**

### 1. Applicable law

The application on which the patent is based was filed as an international application on 10 August 2007. In accordance with Article 7 of the "Act revising the EPC of 29 November 2000" (Special edition No. 1, OJ EPO, 196) and the "Decision of the Administrative Council of 28 June 2001 on the transitional provisions under Article 7 of the Act revising the EPC of 29 November 2000" (Special edition No. 1, OJ EPO, 197), Articles 54(1) and (2), 56 and 116 EPC 1973 apply in the present case.

The present proceedings are governed by the revised version of the Rules of Procedure of the Boards of Appeal (RPBA 2020, OJ EPO 2019, A63) which entered into force on 1 January 2020 (Articles 24 and 25(1) RPBA 2020), except for Articles 12(4) to (6) and 13(2) RPBA 2020 instead of which Articles 12(4) and 13 of the Rules of Procedure of the Boards of Appeal in the version of 2007 (RPBA 2007, OJ EPO 2007, 536 and EPC 16th edition, June 2016, pages 601 to 629) remain applicable (Article 25(2) and (3) RPBA 2020).

### 2. Non-attendance of the appellant and respondents II and III at the oral proceedings

The duly summoned appellant and respondents II and III did not attend the oral proceedings before the board, as they had announced in advance. Pursuant to Article 116(1) and Rule 71(2) EPC 1973 (re Article 116 EPC 1973), the proceedings were continued without them. In accordance with Article 15(3) RPBA 2020, the board relied in its decision only on the appellant's and

respondents II and III written submissions, if available. The board being in a position to decide the case at the conclusion of the oral proceedings (Article 15(5) and (6) RPBA 2020), the voluntary absence of the appellant and respondents II and III was not a reason for delaying the decision (Article 15(3) RPBA 2020).

3. Claim interpretation: "security feature"

Claim 1 is directed at an optically variable security device. The patent does not appear to contain a proper definition of the term "security device", but it is clear from the wording of claim 1 alone that a security device is a material unit that comprises a crystal and that may be subjected to external stimuli. The patent also makes it clear that security features may be attached to security documents such as banknotes (see, for instance, paragraph [0002]).

The term "security feature" is sometimes used as a synonym for "security device" (also in the patent: see paragraph [0056]), but, strictly speaking, its meaning is broader, because it can also designate properties of a document that enhance its security, such as the use of a certain type of paper.

The patent uses both terms. Paragraph [0043] makes it clear that a security device may include several security features. It cites several examples for security features, such as selectively demetallised layers (paragraph [0043]), magnetic layers (paragraph [0055]), holographic designs, and many others (see paragraph [0088]).

4. Compliance with Articles 54 and 56 EPC 1973

#### 4.1 Disclosure of document D4

Document D4 discloses a composite material comprising a photonic crystal which, upon receipt of incident light, generates a first optically variable effect observable over a set of directions and caused by the light being selectively reflected or transmitted by the crystal (see paragraph [0016]).

Paragraph [0093] of document D4 discloses the use, for certain applications, of elastically deformable polymers and goes on to say:

"In this case, it is possible to achieve a situation in which the colour of the moulding according to the invention varies on elongation and compression."

Thus, when the device under consideration is subjected to an external stimulus in the form of the device being pressed, it generates a second optical effect that is different from the first optical effect. As the effect of the pressure results in a modification in the periodic spacing of one or more refractive entities within the crystal structure of the photonic crystal, this second optical effect also qualifies as an optically variable effect observable over a set of directions and caused by the light being selectively reflected or transmitted by the crystal.

Though not explicitly stated in document D4, when the pressure is removed, the effect of the pressure on the elastically deformed crystal necessarily remains for some delay period. This is because real-world elastic materials do not relax instantaneously.

According to paragraph [0162] of document D4,

"[t]he composite materials can be incorporated into surfaces, such as smart cards, banknotes, OEM products, etc, as security features. The security feature is in these cases the viewing angle-dependent reflection or transmission colour, i.e. the angle- and wavelength-resolved spectrum of the composite materials."

Accordingly, the materials disclosed in this document may be used as security features for security documents such as smart cards or banknotes. Although this is not explicitly stated, the skilled reader would immediately understand that the security feature is used so as to provide authentication of the security device, as required by claim 1.

The board notes that document D4 discloses all the features of claim 1. What remains to establish is whether the features are all disclosed in combination (in which case the subject-matter of claim 1 lacks novelty) or whether combining them is suggested (in which case the claimed subject-matter is not inventive) or would require an inventive step.

The crucial question in this context is how paragraphs [0093] and [0162] relate to each other.

Paragraph [0093] is embedded in the part of the document presenting polymers that are suitable for being used to build photonic crystals. The paragraph states that it is advantageous to use elastically deformable polymers because they make it possible to

achieve mouldings whose colour changes on elongation or compression.

Paragraph [0162], which is situated at the end of the general description of the composite materials under consideration and precedes the presentation of a series of specific examples (paragraphs [0166] to [0200]), makes a general statement concerning the possible use of the materials as security features on security documents such as smart cards or banknotes. There is no apparent reason why this general statement would not include the particular class of photonic crystals mentioned in paragraph [0093].

Thus, even assuming that document D4 cannot be taken to directly and unambiguously disclose the combination of the teaching disclosed in paragraphs [0093] and [0162], i.e. the use of photonic crystals based on elastically deformable polymers as security features, such a combination is at least explicitly suggested.

In view of the fact that document D4 clearly suggests the use of photonic crystals based on elastically deformable polymers as security features, it is possible to settle the question of inventiveness without pursuing the entire problem-solution approach, including the definition of an objective technical problem and the examination of what the skilled person facing this problem would have done.

As a consequence, the subject-matter of claim 1 at least lacks inventive step over the disclosure of document D4.

The question of whether claim 1 also lacks novelty over the disclosure of document D4 could only be decisive if

document D4 were prior art under Article 54(3) EPC, which it is not. Therefore, this question may be left unanswered.

#### 4.2 Appraisal of the appellant's counter-arguments

The appellant's counter-arguments have not been found persuasive, for the following reasons:

##### 4.2.1 Security feature

The board cannot endorse the objection that the term "security feature" in paragraph [0162] refers to a property, not a physical entity. The meaning of the term is somewhat fluid in this paragraph. In the first sentence, it clearly refers to a device that "can be incorporated" into banknotes, etc., whereas in the second sentence it refers to the characteristics involved. However, this somewhat inconsistent use of the term would not hinder the skilled person from understanding, directly and unambiguously, that the composite materials disclosed in document D4 can be used as security devices and that the effect involved may consist in angle-dependent changes of colour when viewed in reflection or transmission.

##### 4.2.2 Two colour effects

The board cannot endorse the assertion that there is no direct and unambiguous teaching of first and second angularly dependent effects, or any teaching that each is a colour effect in document D4. Paragraph [0093] clearly refers to colour variations upon compression. Since these effects are produced by photonic crystals, it follows that they must be angle-dependent (see also paragraph [0016] of document D4).

The argument that it is not disclosed in document D4 that those colour effects are used to provide authentication also fails to persuade. Paragraph [0162] clearly states that the security feature is based on the angle-dependent colour effects. It is self-evident for the skilled person that the security feature is used for authentication.

#### 4.2.3 Nature of the stimulus

Document D4 explicitly discloses a colour change of the photonic crystal material used under compression in paragraph [0093]. The argument that pressing is not the same as compression privileges form over substance and fails to persuade. The Oxford English Dictionary defines the verb "compress" as "to press together, to squeeze". The compression mentioned in paragraph [0093] requires the polymer material to be pressed in some way. Thus, the material can be said to be subjected to an external stimulus in the form of the device being pressed.

#### 4.2.4 Delay

It is true that document D4 is silent on delays. However, as the board tried to set out under point 4.1, the very nature of the materials involved necessarily implies some sort of delay in the material's response to the removal of the stimulus. In view of the absence of a more precise disclosure in the claim and even in the patent as a whole, the board cannot endorse the objection that this conclusion is based on an excessively broad interpretation of claim 1.

4.2.5 Document D4 unsuitable as "closest prior art"

The board does not agree that document D4 is unsuitable as the starting point for the assessment of inventive step. As the document discloses the use of certain materials to implement security features, it belongs to the field of security features, which is the relevant technical field. Whether security features are mentioned briefly or not is irrelevant in this context.

As the board reaches the conclusion that the subject-matter of claim 1 was not patentable in view of the disclosure of document D4, it is not necessary to consider other prior-art documents which the appellant considered to be more promising starting points.

4.2.6 Particular context of paragraph [0093]

It is true that paragraph [0093] comprises no reference to security devices and does not disclose that the "stimulated" effect may be used as a security feature. It is also correct that the teaching of this paragraph is limited to "certain applications, such as, for example, ... the production of coatings or coloured films". However, this does not mean that the general statement of paragraph [0162] does not apply to the applications referred to in paragraph [0093]. There is no contradiction between those teachings that would have led the skilled person to dismiss the suggestion that the coloured films of paragraph [0093] can be used as security features.

4.2.7 Objective technical problem

This issue has already been dealt with above (see point 4.1, antepenultimate paragraph)



#### 4.2.8 Preliminary opinion of the board

In point 14 of its communication pursuant to Article 15(1) RPBA 2007 dated 30 August 2019, the board made the following statement in respect of paragraph [0093] of document D4:

"This teaching appears to concern mouldings for a very particular type of applications (coatings or coloured films). The fact that the composite materials used in mouldings according to document D4 can be used as security features, as is disclosed in paragraph [0162], appears to be quite unrelated to the disclosure of paragraph [0093]."

However, as stated at the very beginning of the communication in accordance with Article 17(2) RPBA 2007, the above statement only "reflects the provisional opinion of the board. As such it is not binding on the board in any way as regards the final decision in this matter". Respondent I availed itself of the opportunity to challenge the above finding of the board and persuaded the board that its provisional opinion was wrong. As a consequence, the board abandoned its provisional view and reached a different conclusion.

#### 4.3 Conclusion

The subject-matter of claim 1 of the appellant's sole request on file at least lacks inventive step over the disclosure of document D4 alone. Therefore, the request cannot be allowed and the appeal has to be dismissed.

**Order**

**For these reasons it is decided that:**

The appeal is dismissed.

The Registrar:

The Chair:



N. Schneider

M. Poock

Decision electronically authenticated