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Amended claims in accordance with Rule 137(2)  
EPC.

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(54) **Paper for personal document sheets and security document from this paper**

(57) As per the invention, the paper for personal document sheets is coated with a mixture containing polyvinyl alcohol, dispersing agent, stabilising agent and a pigment, that subjected to a laser beam changes colour to become contrasting to the background paper. The pig-

ment may be used in proportion from 0.1 % to 5 %. The security document has at least one personalised sheet is made from this paper.

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## Description

[0001] The invention covers paper for personal document sheets and a security document from this paper.

[0002] The polish patent No. 186494 refers to a personalised passport sheet made of laminated colour layer placed between two transparent layers of thermosetting plastic, for instance polycarbonate. All the layers are laminated with increased temperature and pressure. One of the transparent layers contains for instance 0.4 % of carbon and with the application of a laser beam - a dark colour emerges on the personalised sheet.

[0003] The layers of thermosetting plastic used in the known solution are relatively rigid and fragile. Therefore, there is a need to use a special construction of the personalised sheet in the most frequently bent part after it has been joined with other document sheets into a booklet. In particular, a separating layer preventing lamination is used in that part of the personalised sheet. For instance, pursuant to the polish patent No. 186494, that part of the personalised sheet does not contain a colour layer; due to the separating layer, it is possible to move both external transparent layers in relation to each other. In another solution, as per the polish patent application No. 361041, due to the separating layer, it is possible to cut off portions of the transparent layers on the joining side of the personalised sheet with other sheets of the document.

[0004] The goal of the invention is a solution to produce a personal document sheets with laser engraving technique without a need to use a thermosetting plastic layer.

[0005] The essence of the invention is paper for personalized sheets of secure personal documents that is coated with a known method with a coating mixture containing polyvinyl alcohol, dispersing agent, stabilising agent and pigment, which subjected to a laser beam changes colour to a colour contrasting to the paper. The coating mixture contains such pigment in proportion of 0.1 % to 5 %.

[0006] The effect is that a personalised document sheet made with laser engraving technique does not have to contain a thermosetting plastic layer. Therefore, the personalised sheet may be laminated with a layer of any plastic. It is also possible that a personalised document sheet made with laser engraving technique does not have to be laminated with a plastic.

[0007] Another advantage of the solution is that the personalised trace with the laser engraving technique on paper is better legible and more contrasting as related to a trace made with the known solution.

[0008] The exemplary execution of the invention, the coating mixture contains mica-base pigment. In the initial operation, pigment dispersion was prepared containing 4 parts of pigment, 8 parts of dispersing agent i 200 parts of water. The dispersion was then added to 2700 parts of water and mixed with an addition of 900 parts of a 10 % solution of polyvinyl alcohol, 35 parts of curing agent, 3 parts of ammonium chloride, 25 parts of glycerine and

100 parts of mixture stabilising agent. A paper ribbon was coated with the mixture by applying the known method.

[0009] Personalisation data in the form of a photo and various alphanumeric characters were laser printed on over the coated paper. The personalisation was clearly and with contrast visible on the paper. The effect was reinforced when watched against light.

## Claims

1. Paper for personal document sheets **characterised in that** it is coated with a coating mixture containing polyvinyl alcohol, dispersing agent, stabilising agent and pigment, which subjected to laser beam changes colour to a contrasting colour in relation to the background paper colour.

2. The paper as claimed in claim 1 **characterised in that** the coating mixture contains a pigment, which subjected to laser beam changes colour to a contrasting colour in relation to the background paper colour, in proportion of 0.1 % to 5 %.

3. Security document **characterised in that** at least one personalised sheet is made from the paper as claimed in claim 1 or 2.

## Amended claims in accordance with Rule 137(2) EPC.

1. A paper for personal document sheets, the paper being coated with a coating mixture containing polyvinyl alcohol and a dispersing agent, **characterised in that** it further comprises a mixture stabilising agent and a mica-based pigment, wherein the mica-based pigment, when subjected to laser beam, changes colour to a contrasting colour in relation to the background paper colour, so as to obtain a personalisation trace.

2. The paper according to claim 1, **characterised in that** the coating mixture contains the mica-based pigment in proportion of 0.1 % to 5%.

3. The paper according to claim 1, **characterised in that** the coating mixture is prepared by adding a pigment dispersion, containing 4 parts of laser-sensitive pigment, 8 parts of dispersing agent and 200 parts of water, to 2700 parts of water and mixing it with addition of 900 parts of a 10% solution of polyvinyl alcohol, 35 parts of curing agent, 3 parts of ammonium chloride, 25 parts of glycerine and 100 parts of mixture stabilising agent.

4. A security document, **characterised in that** at least one personalised sheet of the security docu-

ment is made from the paper as claimed in claim 1 or 2 or 3.

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Application Number  
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Place of search Munich		Date of completion of the search 1 August 2008	Examiner Karlsson, Lennart
<p>CATEGORY OF CITED DOCUMENTS</p> <p>X : particularly relevant if taken alone Y : particularly relevant if combined with another document of the same category A : technological background O : non-written disclosure P : intermediate document</p> <p>T : theory or principle underlying the invention E : earlier patent document, but published on, or after the filing date D : document cited in the application L : document cited for other reasons &amp; : member of the same patent family, corresponding document</p>			

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