CLAIMS

1. A method for producing an authenticity information item (2) of a security element (1), which authenticity information item (2) serves for checking the correct combination of at least two, or exactly two, carrier parts (3, 4, 5), wherein the security element (1) comprises at least one first partial element (6) having a first partial information item (7) and a second partial element (8) having a second partial information item (9), wherein the first partial element (6) is assignable to a first carrier part (3) and the second partial element (8) is assignable to a second carrier part (4), and wherein the two partial elements (6, 8) are movable from a starting position into a check position, in which the two partial elements (6, 8) overlay one another, wherein the first partial information item (7) and the second partial information item (9) in the check position represent said authenticity information item (2), the method comprising the steps of:
positioning the two partial elements (6, 8) one above the other and aligning the two partial elements relative to one another in an alignment step,
fixing the two partial elements (6, 8) in their aligned position relative to one another in a fixation step, and
providing electromagnetic waves (W_1, W_2, W_3, W_4) with at least one processing means (B) in a processing step, with which waves (W_1, W_2, W_3, W_4) the first partial information item (7) and the second partial information item (8) are produced, wherein one of the two partial elements (6) is processed with the electromagnetic waves directly, and the other of the two partial elements (8) is processed through said one partial element (6).

2. The method as claimed in claim 1, wherein both partial elements (6, 8) are processed exclusively and immediately by the processing means (B).

3. The method as claimed in claim 1, wherein the partial element (6) which is located closer to the processing means (B) is transmissive or transparent for the electromagnetic waves (W_1, W_2, W_3, W_4) at least before the processing.

4. The method as claimed in claim 1, wherein the first partial information item (7) differs from the second partial information item (9).

5. The method as claimed in claim 1, wherein at least one processing parameter of said electromagnetic waves (W_1, W_2, W_3, W_4) is changed such that selectively either the first partial element (6) or the second partial element (8) is processed or wherein at least one processing parameter of said electromagnetic waves (W_1, W_2, W_3, W_4) is changed such that the first partial element (6) and/or the second partial element (8) can be processed.

6. The method as claimed in claim 5, wherein the at least one processing parameter is an intensity, wherein an intensity of the electromagnetic waves (W_1, W_2, W_3, W_4) provided by the processing means (B) is changed, as a result of which each of the partial elements (6, 8) can be targeted,
and/or
wherein the at least one processing parameter is a focal position, wherein a focal position of the electromagnetic waves (W_1, W_2, W_3, W_4) provided by the processing means (B) is changed, as a result of which each of the partial elements (6, 8) can be targeted,
and/or
wherein the at least one processing parameter is a wavelength, wherein a wavelength of the electromagnetic waves (W_1, W_2, W_3, W_4) provided by the processing means (B) is changed, as a result of which each of the partial

elements (6, 8) can be targeted,
and/or
wherein the at least one processing parameter is a pulse energy and/or laser power, wherein a pulse energy and/or a laser power of the electromagnetic waves (W_1, W_2, W_3, W_4) provided by the processing means (B) is changed, as a result of which each of the partial elements (6, 8) can be targeted.

7. The method as claimed in claim 5, wherein the at least one processing parameter is changed such that each position between an upper side (22) of the first partial element (6) and a bottom side (23) of the second partial element (8) is processable.

8. The method as claimed in claim 1, wherein the production of said first and second partial information items takes place in one fixation, wherein in this fixation, both the first partial element (6) and the second partial element (8) are processed.

9. The method as claimed in claim 5, wherein
an expansion region of the partial information items is systematically traversed by the processing means (B) parallel to a surface of the respective partial element (6, 8), wherein said at least one processing parameter is changed during the traversing;
or
wherein the expansion region of the partial information items is systematically traversed by the processing means (B) in at least two passes, wherein said at least one processing parameter is changed for each of the passes.

10. The method as claimed in claim 1, wherein exactly one processing means (B) is present, the processing parameter of which can be set.

11. The method as claimed in claim 1, wherein at least one first processing means (B) and at least one second processing means (B) are present, which provide electromagnetic waves with different processing parameters.

12. The method as claimed in claim 11, wherein an expansion region of the first and second partial information item is systematically traversed by the first and second processing means (B) in one pass parallel to a surface of the respective partial element (6, 8), wherein the respective processing parameters are changed,
or wherein the expansion region of the first and second partial information item is systematically traversed by the first and second processing means (B) in at least two passes parallel to the surface of the respective partial element (6, 8), wherein one of the first and second processing means (B) is active during the one pass with fixed or varying processing parameters, and wherein the other one of the first and second processing means (B) is deactivated during said pass.

13. The method as claimed in claim 1, wherein the two partial elements (6, 8) are in direct surface contact with one another during the processing step.

14. The method as claimed in claim 1, wherein a separating film (24) is inserted between the two partial elements (6, 8) before or during the alignment step.

15. The method as claimed in claim 14, wherein the separating film (24) is provided with an adhesive layer on a side facing the first partial element (6) and/or on a side facing the second partial element (8), and/or wherein the separating film (24) serves as a carrier for an ink, which is detached from the separating film through

processing with the processing means (B) and adheres to the first partial element (6) and/or the second partial element (8).

16. The method as claimed in claim 1, wherein no interaction, in particular no transfer of particles, takes place between the first partial element (6) and the second partial element (8) during the processing with the processing means (B).

17. A security element (1) produced according to the method as claimed in claim 1, wherein a response behavior of the first partial element (6) with respect to a defined setting of processing parameters differs from a response behavior of the second partial element (8) with respect to the same setting of processing parameters.

18. The security element (1) as claimed in claim 17, wherein the first partial element (6) is made of plastics and the second partial element (8) is a paper substrate, wherein both the plastics and the paper substrate are variable in an optically perceivable manner.

19. The security element as claimed in claim 18, wherein an ink layer and/or stamping foil layer is applied to the paper substrate, which is changed by processing with the processing means (B) in an optically perceivable manner.

20. The security element (1) as claimed in claim 17, wherein processing with the processing means (B) brings about a color change and/or a material removal on the first partial element (6) and/or on the second partial element (8).