Claims

1. A device (1) for producing a cold atmospheric pressure plasma for the treatment of human and / or animal surfaces, comprising a flexible, planar multilayer system (2) with a side (3) facing the surface to be treated and a side (4) facing away from the surface to be treated, the multilayer system (2) comprises the following layers:
   - a first electrode layer (12) on the facing away side (4) of the multilayer system (2),
   - a second electrode layer (14) on the facing side (3) of the multilayer system (2), wherein the electrode layer comprises a plurality of recesses (90) or is formed like a grid or meandering,
   - a dielectric layer (13) arranged between the first electrode layer (12) and the second electrode layer (14), and
   - a spacer layer (16) arranged on top of the second electrode layer (14) on the facing side (4) of the multilayer system (2),

   characterized in that the first electrode layer (12) and the second electrode layer (14) each are configured to be electrically connected to a generator unit (70), or wherein the first electrode layer (12) and the second electrode layer (14) are electrically connected to a generator unit (70).

2. The device (1) according to claim 1, wherein the multilayer system (2) additionally comprises a first insulating layer (11), wherein the first insulating layer (11) is arranged adjacent to the first electrode layer (12) on the side (4) of the multilayer system (2) facing away from the surface to be treated.

3. The device (1) according to at least one of the preceding claims, wherein the multilayer system (2) additionally comprises a second insulating layer (15) , wherein the second insulating layer (15) is arranged adjacent to the second electrode layer (14) on the side (3) of the multilayer system (2) facing the surface to be treated.

4. The device (1) according to claim 3, wherein the second insulating layer (15) has a thickness of between 10 µm and 300 µm.

5. The device (1) according to one of the preceding claims, wherein the multilayer system (2) additionally comprises a third insulating layer (17), wherein the third insulating layer (17) is arranged adjacent to the spacer layer (16) on the side (3) of the multilayer system (2) facing the surface to be treated.

6. The device (1) according to claim 5, characterized in that the third insulating layer (17) has a thickness of between 50 µm and 300 µm, preferably of 200 µm.

7. The device (1) according to at least one of the preceding claims, wherein the first electrode layer (12) is formed continuously or with a plurality of recesses.

8. The device (1) according to at least one of the preceding claims, wherein the recesses (90) in the second electrode layer (14) have a hole-shaped (91), strip-shaped (92), meandering (95), honeycomb-shaped (94), circular (96) and / or square (93) design.

9. The device (1) according to claim 7, wherein the recesses in the first electrode layer (12) have a hole-shaped (91), strip-shaped (92), meandering (95), honeycomb-shaped (94), circular (96) and / or square (93) design.

10. The device (1) according to at least one of the preceding claims, wherein the device (1) comprises an information carrier (80), in particular a chip, a label and / or another information and storage medium, on which at least one operating parameter for operating the device (1) is stored.

11. A generator unit (70) for providing a high-voltage for producing a cold atmospheric pressure plasma, comprising a device (1) according to at least one of claims 1 to 9 for the treatment of human and / or animal surfaces, wherein the generator unit (70) is configured to control the device (1).

12. The generator unit (70) according to claim 11, wherein the generator unit (70) is additionally configured to read operating parameters for controlling the device from an information carrier (80), in particular a chip, a label and / or another information storage medium, in or at the device (1).

13. The device (1) according to one of claims 1-10, wherein the device (1) is contacted by means of a clamping device (33) that is configured to contact the first electrode layer (12) and the second electrode layer (14).

14. The device according to one of claims 1-10, wherein the first electrode layer (12) and the second electrode layer (14) each comprise a contact lug for being contacted to a clamping device (33) configured to electrically connect the device (1) to a generator unit (70).

15. The device according to one of claims 1-10, wherein the device comprises only one first electrode layer.

****