Claims

1. A plasma generating device, comprising:

- a plurality of plasma sources, wherein each plasma source has a plasma source hollow body (1) and an electron emission unit (5) to emit free electrons into each plasma source hollow body (1), wherein each plasma source hollow body (1) comprises a first gas inlet (7a) and a plasma source opening (10) which forms an opening to a vacuum chamber (3),
- a plurality of anodes, wherein each anode comprises an anode hollow body (2), wherein each anode hollow body (2) comprises a second gas inlet (7b) and an anode opening (11) which forms an opening to the vacuum chamber (3), and
- a voltage source (8) the negative pole of which is connected to the electron emission unit (5) and the positive pole of which is connected to the anode hollow body (2),

wherein the plurality of anodes are externally mounted to the vacuum chamber (3) and the positive pole of the voltage source (8) is additionally electrically connected to each plasma source hollow body (1) by means of a first shunt (6a).

2. The plasma generating device according to claim 1, wherein the positive pole of the voltage source (8) is

electrically connected to the vacuum chamber by means of a second shunt (6b).

3. The plasma generating device according to claim 1, wherein at least one plasma source opening (10) is provided with a screen (9b) which is adapted to close the at least one plasma source opening (10) as needed.

4. The plasma generating device according to claim 1, wherein at least one anode opening (11) is provided with a screen (9a) which is adapted to close the at least one anode opening (11) as needed.

5. The plasma generating device according to claim 1, wherein at least one plasma source opening and/or at least one anode opening are formed such that supersonic flow through the at least one plasma source opening is established during operation.

6. The plasma generating device according to claim 1, wherein at least one anode hollow body (2) is flange-mounted to the vacuum chamber (3).

7. The plasma generating device according to claim 1, wherein at least one anode hollow body (2) is flange-mounted to one of a sidewall, ceiling, or bottom of the vacuum chamber (3).

8. The plasma generating device according to claim 1, wherein at least one anode hollow body (2) is mounted to the vacuum chamber (3) in an electrically insulated manner via insulators (4).

9. The plasma generating device according to claim 8, wherein at least one anode hollow body (2) is flange mounted to the vacuum chamber (3).

10. The plasma generating device according to claim 1, wherein the plurality of plasma sources comprise a first plasma source and a second plasma source and the plurality of anodes comprise a first anode and a second anode, and wherein a first flow of electrons extends between the first plasma source and the first anode and a second flow of electrons extends between the second plasma source and the second anode.

11. The plasma generating device according to claim 10, wherein the first flow and the second flow are parallel.

12. The plasma generating device according to claim 11, wherein the first flow is arranged substantially above the second flow.

13. The plasma generating device according to claim 10, wherein the first flow and the second flow are perpendicular to each other.

14. The plasma generating device according to claim 1, wherein each plasma source opening (10) is provided with a screen (9b) which is adapted to close each plasma source opening (10) as needed.

15. The plasma generating device according to claim 1, wherein each anode opening (11) is provided with a screen (9a) which is adapted to close each anode opening (11) as needed.

16. The plasma generating device according to claim 1, wherein each anode hollow body (2) is flange-mounted to the vacuum chamber (3).

17. The plasma generating device according to claim 1, wherein each anode hollow body (2) is flange-mounted to one of a sidewall, ceiling, or bottom of the vacuum chamber (3).

18. The plasma generating device according to claim 1, wherein each anode hollow body (2) is mounted to the vacuum chamber (3) in an electrically insulated manner via insulators (4).

19. The plasma generating device according to claim 8, wherein each anode hollow body (2) is flange-mounted to the vacuum chamber (3).