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(54) **Frequency tuning of a RF-generator within a plasma process**

(57) The invention describes a method of frequency tuning an electrical generator (100) for supplying electrical power to a plasma, wherein the method comprises a pulsed mode, the pulse mode comprising at least a high power pulse (314) comprising a high power level (304) and a low power pulse (312) comprising a low power level (302) different to zero power, the method comprising the steps of:

- providing RF-power with a high power starting frequency set comprising at least one high power starting frequency (502, 504, 506) at the high power pulse (314) with a predefined high power pulse shape;
- providing RF-power with a low power starting frequency set comprising at least one low power starting frequency (512, 514) at the low power pulse (312) with a predefined low power pulse shape;
- determining a reflected high power at the high power starting frequency (502, 504, 506);
- tuning the high power starting frequency (502, 504, 506) to a different first high power frequency if the reflected high power exceeds a high power threshold value such

that the reflected high power decreases below the high power threshold value;

- determining a reflected low power at the low power starting frequency (512, 514);
- tuning the low power starting frequency (512, 514) to a different first low power frequency if the reflected low power exceeds a low power threshold value such that the reflected low power decreases below the low power threshold value.

The invention further describes a corresponding electrical generator (100), plasma processing system and computer program product. The method, the electrical generator, the plasma processing system and the computer program product may have the advantage that the stability of the plasma with respect to repeated and essentially identical high and low power pulses is used to reduce the controlling effort and to check the stability of the plasma process.

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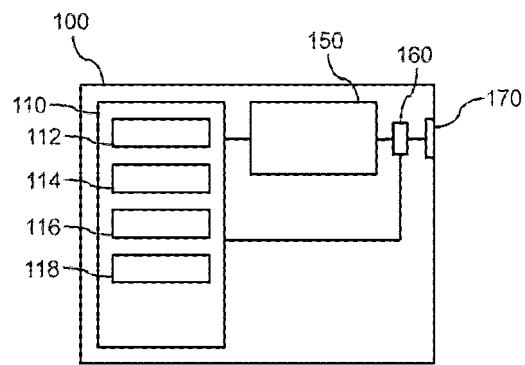


Fig. 1