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(54) Title: MICROWAVE POWER DELIVERY SYSTEM FOR PLASMA REACTORS

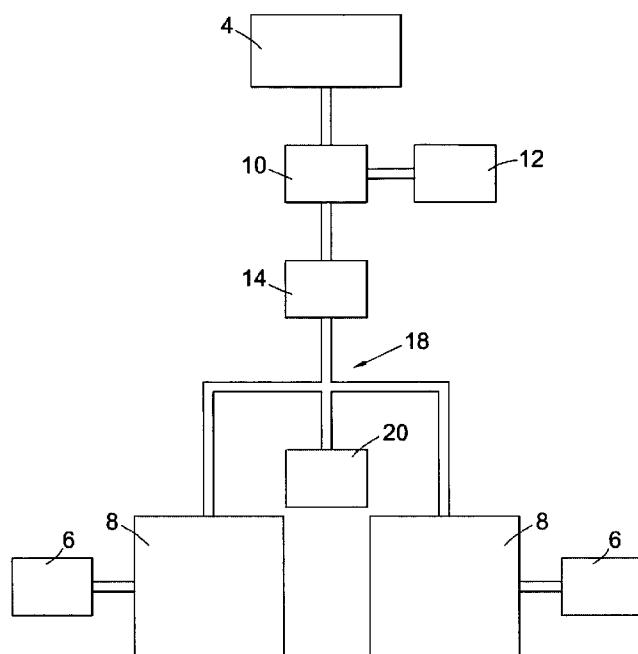


Fig. 5

(57) Abstract: A microwave power delivery system for supplying microwave power to a plurality of microwave plasma reactors (8), the microwave power delivery system comprising: a tuner (14) configured to be coupled to a microwave source (4) and configured to match impedance of the plurality of microwave plasma reactors to that of the microwave source; and a waveguide junction (18) coupled to the tuner and configured to guide microwaves to and from the plurality of microwave plasma reactors, wherein the waveguide junction comprises four waveguide ports including a first port coupled to the tuner, second and third ports configured to be coupled to respective microwave plasma reactors, and a fourth port coupled to a microwave sink (20), wherein the waveguide junction is configured to evenly split microwave power input from the tuner through the first port between the second and third ports for providing microwave power to respective microwave plasma reactors, wherein the waveguide junction is configured to decouple the second and third ports thereby preventing any reflected microwaves from one of the microwave plasma reactors from feeding across the waveguide junction directly into another microwave plasma reactor or causing an imbalance, wherein the waveguide junction is further configured to feed reflected microwaves received back through the second and third ports which are balanced in terms of magnitude and phase to the tuner such that they can be reflected by the tuner and re-used, and wherein the waveguide junction is further configured to feed excess reflected power which is not balanced through the fourth port into the microwave sink.



LV, MC, MK, MT, NL, NO, PL, PT, RO, RS, SE, SI, SK,
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