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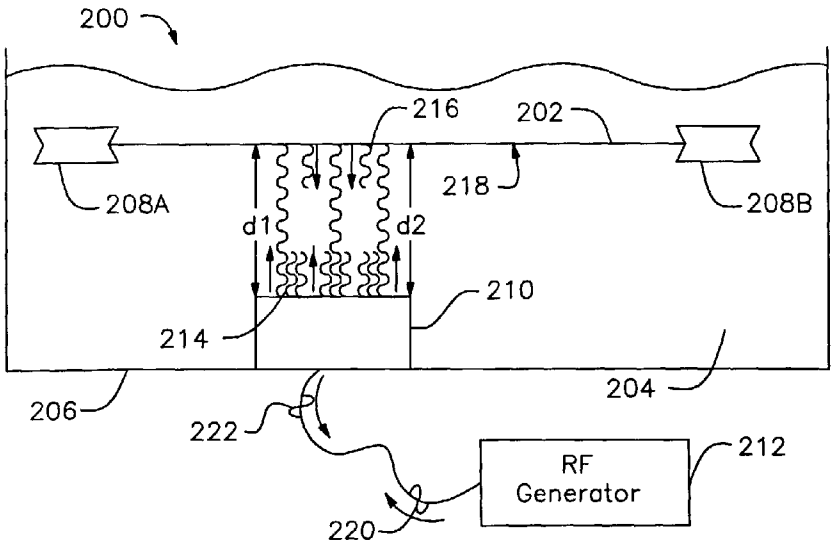
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(54) Title: IMPROVED MEGASONIC CLEANING EFFICIENCY USING AUTO- TUNING OF AN RF GENERATOR AT CONSTANT MAXIMUM EFFICIENCY



(57) Abstract: system and method of cleaning a substrate (202) includes a megasonic chamber (206) that includes a transducer (210) and a substrate (202). The transducer (210) is being oriented toward the substrate (202). A variable distance d separates the transducer (210) and the substrate (202). The system (200) also includes a dynamically adjustable RF generator (212) that has an output coupled to the transducer. The dynamically adjustable RF generator (212) can be controlled by a phase comparison of an oscillator output (306) voltage and a phase of an RF generator output voltage. The dynamically adjustable RF generator (212) can also be controlled by monitoring a peak voltage of an output signal and controlling the RF generator to maintain the peak voltage within a predetermined voltage range. The dynamically adjustable RF generator (212) can also be controlled by dynamically controlling a variable DC power supply voltage.

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