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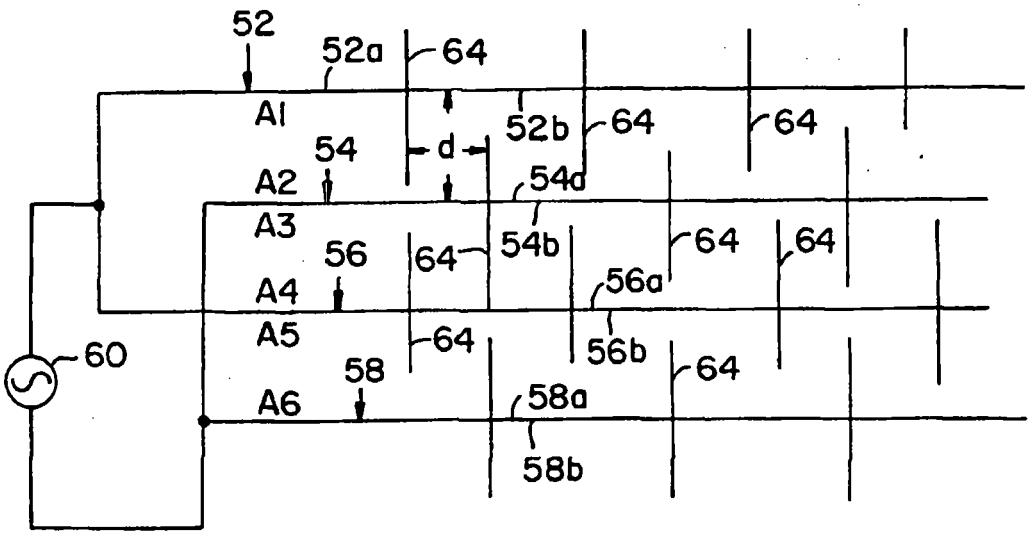
(54) Title: HIGHLY EFFICIENT COMPACT CAPACITANCE COUPLED PLASMA REACTOR/GENERATOR AND METHOD



(57) Abstract: A compact capacitively coupled electrode structure for use in a gas plasma reactor/generator is disclosed. The electrode structure comprises a parallel plate type anode and cathode spaced to define a gas flow path or volume therebetween. A plurality of electrically conductive fin elements are interposed in the space between the anode and cathode. The fin elements substantially increase the ratio of electrode surface area to volume, and subdivide the gas flow path or volume, thereby substantially increasing the efficiency of plasma gas processing that is possible over a broad range of operating parameters, without substantially increasing the spacing between the anode and cathode. Static or closed operation is also disclosed. Also disclosed is a multi-anode/multi-cathode electrode assembly embodying the basic electrode structure and a highly efficient and compact gas plasma reactor/generator employing the assembly.

WO 01/82329 A3

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