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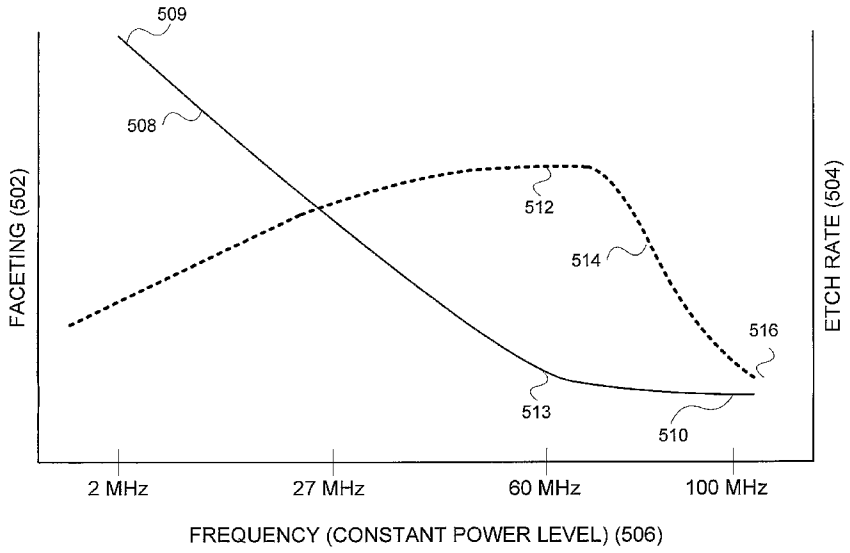
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(54) Title: SELECTIVITY CONTROL IN A PLASMA PROCESSING SYSTEM



(57) Abstract: A method in a plasma processing system for etching a feature through a given layer on a semiconductor substrate. The method includes placing the substrate in a plasma processing chamber of the plasma processing system. The method also includes flowing an etchant gas mixture into the plasma processing chamber, the etchant gas mixture being configured to etch the given layer. The method additionally includes striking a plasma from the etchant source gas. Furthermore, the method includes etching the feature at least partially through the given layer while applying a bias RF signal to the substrate. The bias RF signal has a bias RF frequency of between about 27 MHz and about 75 MHz and a bias RF power component that is configured to cause the etch feature to be etched with an etch selectivity to a second layer of the substrate that is higher than a predefined selectivity threshold or configured to cause the feature to be etched in accordance to predefined etch rate parameters and etch profile parameters at the bias RF frequency.

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