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(54) **Title:** ELECTROCHEMICAL DEPOSITION PROCESSES FOR SEMICONDUCTOR WAFERS

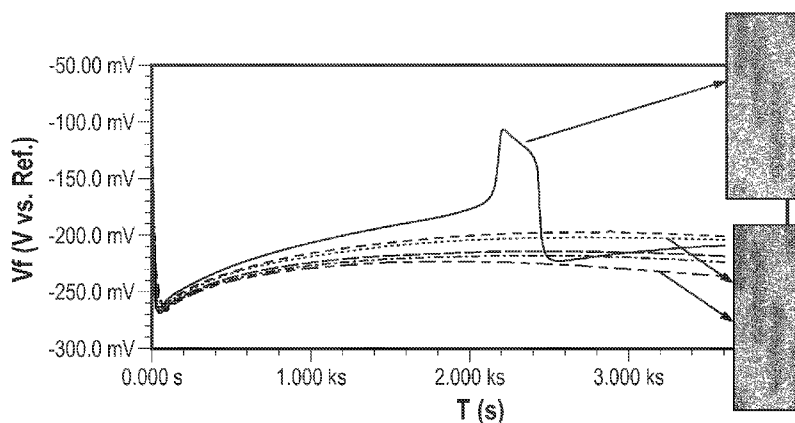


FIG. 1

(57) **Abstract:** A method for electroplating a wafer detects plating bath failure based on a voltage change. The method is useful in plating wafers having TSV features. Voltage of each anode of a plating processor may be monitored. An abrupt drop in voltage signals a bath failure resulting from conversion of an accelerator such as SPS to it's by products MPS. Bath failure is delayed or avoided by current pulsing or current ramping. An improved plating bath has a catholyte with a very low acid concentration.