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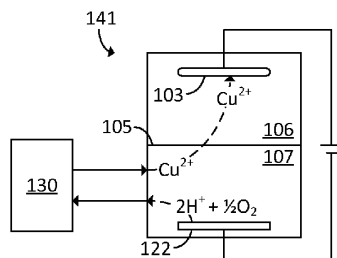


FIG. 1C

(57) Abstract: Discussed herein are techniques for electroplating metal onto a substrate that enable use of an inert anode while maintaining excellent and stable control over electrolyte composition. In one aspect, a system for electroplating a metal on a substrate is provided, including: an electroplating cell comprising: an anode, where the anode is an inert anode, a cathode chamber configured to expose the substrate to catholyte, an anode chamber configured to hold anolyte and the anode, a membrane separating the cathode chamber from the anode chamber, where the membrane permits passage of ions from the anode chamber to the cathode chamber and prevents passage of organic compounds from the cathode chamber to the anode chamber during electroplating; and dosing hardware configured to provide a metal-containing material to the anolyte, where the metal-containing material is a heterogeneous material including the metal being electroplated on the substrate.