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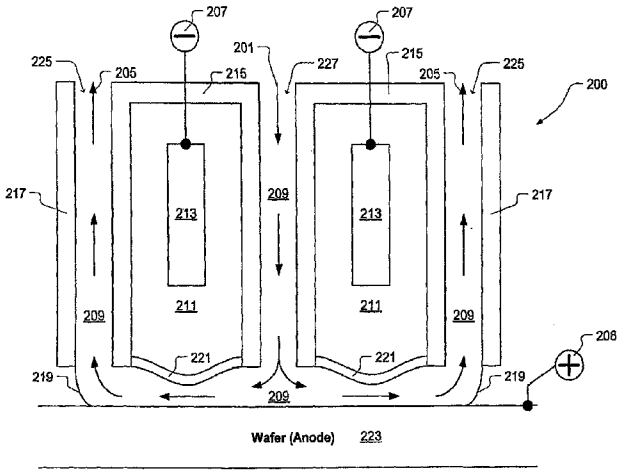
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(54) **Title:** APPARATUS AND METHOD FOR CONFINED AREA PLANARIZATION



(57) **Abstract:** A proximity head and associated method of use is provided for performing confined area planarization of a semiconductor wafer. The proximity head includes a chamber defined to maintain an electrolyte solution. A cathode is disposed within the chamber in exposure to the electrolyte solution. A cation exchange membrane is disposed over a lower opening of the chamber. A top surface of the cation exchange membrane is in direct exposure to the electrolyte solution to be maintained within the chamber. A fluid supply channel is defined to expel fluid at a location adjacent to a lower surface of the cation exchange membrane. A vacuum channel is defined to provide suction at a location adjacent to the lower surface of the cation exchange membrane, such that the fluid to be expelled from the fluid supply channel is made to flow over the lower surface of the cation exchange membrane.

WO 2007/123677 A2