

ABSTRACT

Disclosed in the present invention is an electrochemical mechanical polishing and planarization apparatus, at least comprising a polishing head, wherein the polishing head comprises: a polishing head body; a hard conductive disc used for suctioning a wafer substrate; a
5 conductive drive unit, at least part of which can be connected to a power supply, and at least part of which is in contact with and transmittingly works in conjunction with the hard conductive disc to drive the hard conductive disc to rotate circumferentially; a moving gap formed between the polishing head body and the conductive drive unit, and/or between the conductive drive unit and the hard conductive disc, and/or between the hard conductive disc and the polishing head body;
10 and a retaining ring which is an annular component capable of being in contact with a polishing pad, wherein the hard conductive disc moves in an area defined by the retaining ring. In the present invention, by using the hard conductive disc, the circuit turn-on between the polishing head and the wafer substrate can be achieved to perform electrochemical mechanical polishing, thereby ensuring the long-term stability of electrochemical reaction; and the hard conductive disc is used
15 for suctioning the wafer substrate at negative pressure, thereby solving the problem of a flexible film being pulled and thus broken.

FIG. 1