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(71) 申请人: 杭州众硅电子科技有限公司(HANGZHOU SIZONE ELECTRONIC TECHNOLOGY INC.) [CN/CN]; 中国浙江省杭州市临安区青山湖街道创业街88号1幢一层 311300 (CN)。

(72) 发明人: 顾海洋(GU, Haiyang); 中国浙江省杭州市临安区青山湖街道创业街 88 号 1 幢一层 311300 (CN)。时泽健(SHI, Zejian); 中国浙江省杭州市临安区青山湖街道创业街 88 号 1 幢一层 311300 (CN)。朱政挺(ZHU, Zhengting); 中国浙江省杭州市临安区青山湖街道创业街 88

号 1 幢一层 311300 (CN)。朱自强(ZHU, Ziqiang); 中国浙江省杭州市临安区青山湖街道创业街 88 号 1 幢一层 311300 (CN)。杨渊思(YANG, Yuansi); 中国浙江省杭州市临安区青山湖街道创业街 88 号 1 幢一层 311300 (CN)。

(74) 代理人: 杭州凯知专利代理事务所(普通合伙)(HANGZHOU KAIZHI PATENT AGENCY (GENERAL PARTNERSHIP)); 中国浙江省杭州市余杭区南苑街道迎宾同济中心 1 幢 403-4 室 311199 (CN)。

(81) 指定国(除另有指明, 要求每一种可提供的国家保护): AE, AG, AL, AM, AO, AT, AU, AZ, BA, BB, BG, BH, BN, BR, BW, BY, BZ, CA, CH, CL, CN, CO, CR, CU, CV, CZ, DE, DJ, DK, DM, DO, DZ, EC, EE, EG, ES, FI, GB, GD, GE, GH, GM, GT, HN, HR, HU, ID, IL, IN, IQ, IR, IS, IT, JM, JO, JP, KE, KG, KH, KN, KP, KR, KW, KZ, LA, LC, LK, LR, LS, LU, LY, MA, MD, MG, MK, MN, MU, MW, MX, MY, MZ, NA, NG, NI, NO, NZ, OM, PA, PE, PG, PH, PL, PT, QA, RO, RS, RU, RW, SA, SC, SD,

(54) Title: ELECTROCHEMICAL MECHANICAL POLISHING AND PLANARIZATION APPARATUS

(54) 发明名称: 一种电化学机械抛光及平坦化装置

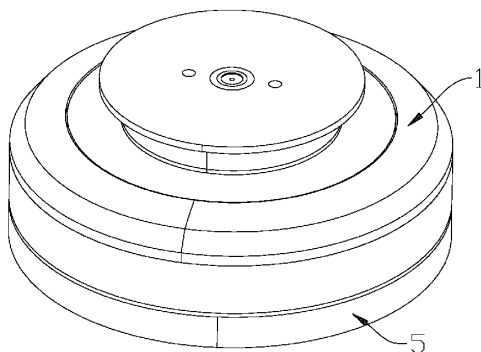


图 1

(57) 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 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; 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 for suctioning the wafer substrate at negative pressure, thereby solving the problem of a flexible film being pulled and thus broken.

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本国际公布:
— 包括国际检索报告(条约第21条(3))。

(57) 摘要: 本发明公开了一种电化学机械抛光及平坦化装置, 至少包括抛光头, 该抛光头包括有: 抛光头
本体; 硬质导电盘, 用于吸附晶圆衬底; 导电驱动单元, 其至少部分可与电源相连, 其至少部分与硬
质导电盘接触并传动配合, 以驱动硬质导电盘周向转动; 活动间隙, 形成于抛光头本体和导电驱动单
元之间, 和/或, 形成于导电驱动单元和硬质导电盘之间, 和/或, 形成于硬质导电盘和抛光头本体之
间; 保持环, 可与抛光垫接触的环形部件, 硬质导电盘在该保持环限定的区域内活动。本发明利用硬
质导电盘, 实现抛光头和晶圆衬底之间的电路导通进行电化学机械抛光, 可保障电化学反应的长期稳
定性; 利用硬质导电盘负压吸附晶圆衬底, 解决了柔性膜被拉扯导致破裂的问题。