

(12) INTERNATIONAL APPLICATION PUBLISHED UNDER THE PATENT COOPERATION TREATY (PCT)

(19) World Intellectual Property
Organization

International Bureau

(43) International Publication Date
23 May 2019 (23.05.2019)



(10) International Publication Number
WO 2019/095126 A1

(51) International Patent Classification:
B08B 3/12 (2006.01) **H01L 21/67** (2006.01)

(21) International Application Number:
PCT/CN2017/111015

(22) International Filing Date:
15 November 2017 (15.11.2017)

(25) Filing Language: English

(26) Publication Language: English

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(81) Designated States (*unless otherwise indicated, for every kind of national protection available*): AE, AG, AL, AM, AO, AT, AU, AZ, BA, BB, BG, BH, BN, BR, BW, BY, BZ, CA, CH, CL, CN, CO, CR, CU, CZ, DE, DJ, DK, DM, DO, DZ, EC, EE, EG, ES, FI, GB, GD, GE, GH, GM, GT, HN, HR, HU, ID, IL, IN, IR, IS, JO, JP, KE, KG, KH, KN, KP, KR, KW, KZ, LA, LC, LK, LR, LS, LU, LY, MA, MD, ME,

MG, MK, MN, MW, MX, MY, MZ, NA, NG, NI, NO, NZ, OM, PA, PE, PG, PH, PL, PT, QA, RO, RS, RU, RW, SA, SC, SD, SE, SG, SK, SL, SM, ST, SV, SY, TH, TJ, TM, TN, TR, TT, TZ, UA, UG, US, UZ, VC, VN, ZA, ZM, ZW.

(84) Designated States (*unless otherwise indicated, for every kind of regional protection available*): ARIPO (BW, GH, GM, KE, LR, LS, MW, MZ, NA, RW, SD, SL, ST, SZ, TZ, UG, ZM, ZW), Eurasian (AM, AZ, BY, KG, KZ, RU, TJ, TM), European (AL, AT, BE, BG, CH, CY, CZ, DE, DK, EE, ES, FI, FR, GB, GR, HR, HU, IE, IS, IT, LT, LU, LV, MC, MK, MT, NL, NO, PL, PT, RO, RS, SE, SI, SK, SM, TR), OAPI (BF, BJ, CF, CG, CI, CM, GA, GN, GQ, GW, KM, ML, MR, NE, SN, TD, TG).

Published:

— with international search report (Art. 21(3))



WO 2019/095126 A1

(54) Title: METHOD FOR CLEANING SEMICONDUCTOR WAFERS

(57) Abstract: A method for controlling damages in cleaning a semiconductor wafer comprising features of patterned structures, the method comprising: delivering a cleaning liquid over a surface of a semiconductor wafer during a cleaning process; and imparting sonic energy to the cleaning liquid from a sonic transducer during the cleaning process, wherein power is alternately supplied to the sonic transducer at a first frequency and a first power level for a first predetermined period of time and at a second frequency and a second power level for a second predetermined period of time, the first predetermined period of time and the second predetermined period of time consecutively following one another, wherein at least one of the cleaning parameters is determined such that a percentage of damaged features as a result of the imparting sonic energy is lower than a predetermined threshold.