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[Continued on next page]

(54) Title: METHODS AND ARRANGEMENT FOR PLASMA DECHUCK OPTIMIZATION BASED ON COUPLING OF PLASMA SIGNALING TO SUBSTRATE POSITION AND POTENTIAL

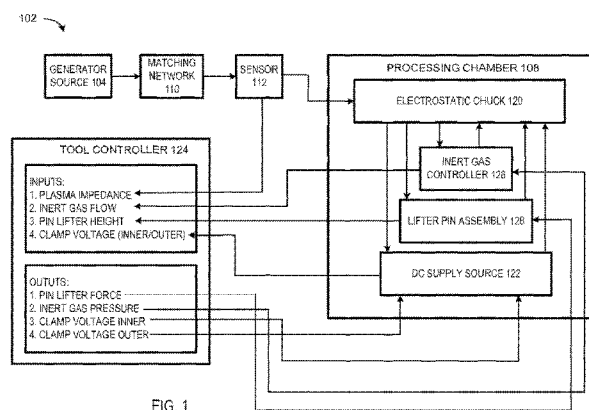


FIG. 1

(57) Abstract: A method for optimizing a dechuck sequence, which includes removing a substrate from a lower electrode. The method includes performing an initial analysis to determine if a first set of electrical characteristic data of a plasma formed during the dechuck sequence traverses a threshold values. If so, turning off the inert gas. The method also includes raising the lifter pins slightly from the lower electrode to move the substrate in an upward direction. The method further includes performing a mechanical and electrical analysis, which includes comparing a first set of mechanical data, which includes an amount of force exerted by the lifter pins, against a threshold value. The mechanical and electrical analysis also includes comparing a second set of electrical characteristic data against a threshold value. If both traverse the respective threshold value, removes the substrate from the lower electrode since a substrate-released event has occurred.

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INTERNATIONAL SEARCH REPORT

International application No.
PCT/US2010/047382**A. CLASSIFICATION OF SUBJECT MATTER****H01L 21/66(2006.01)i, H01L 21/687(2006.01)i, H01L 21/205(2006.01)i, H01L 21/3065(2006.01)i**

According to International Patent Classification (IPC) or to both national classification and IPC

B. FIELDS SEARCHED

Minimum documentation searched (classification system followed by classification symbols)

H01L 21/66; H02N 13/00; H01T 23/00; H01L 21/683; H01H 1/00

Documentation searched other than minimum documentation to the extent that such documents are included in the fields searched

Korean utility models and applications for utility models

Japanese utility models and applications for utility models

Electronic data base consulted during the international search (name of data base and, where practicable, search terms used)

eKOMPASS(KIPO internal) & Keywords: dechuck, plasma, optimization, position, analysis

C. DOCUMENTS CONSIDERED TO BE RELEVANT

Category*	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
A	US 2006-0087793 A1 (TAEG-KON KIM et al.) 27 April 2006 See abstract; paragraphs [0020]-[0025]; and claim 1.	1-20
A	US 7196896 B2 (ARTHUR HOWALD et al.) 27 March 2007 See abstract; column 7, line 9 - column 8, line 34; and claims 1, 9.	1-20
A	US 2003-0210510 A1 (THOMAS, C. HANN et al.) 13 November 2003 See abstract; paragraphs [0023]-[0031]; and claims 8-13.	1-20
A	US 5459632 A (MANOCHER BIRANG et al.) 17 October 1995 See abstract; column 6, line 47 - column 14, line 41; and figures 1-3.	1-20
A	US 6307728 B1 (KARL F. LEESER;) 23 October 2001 See abstract; column 2, line 41 - column 5, line 58; and figures 1-3.	1-20

☐ Further documents are listed in the continuation of Box C.☒ See patent family annex.

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INTERNATIONAL SEARCH REPORT

Information on patent family members

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