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

(19) World Intellectual Property Organization
International Bureau

(43) International Publication Date
28 December 2000 (28.12.2000)

PCT

(10) International Publication Number
WO 00/79572 A1

(51) International Patent Classification[7]: H01L 21/00

(21) International Application Number: PCT/US00/16557

(22) International Filing Date: 14 June 2000 (14.06.2000)

(25) Filing Language: English

(26) Publication Language: English

(30) Priority Data:
09/336,401 18 June 1999 (18.06.1999) US

(71) Applicant: LAM RESEARCH CORPORATION [US/US]; 4650 Cushing Parkway, Fremont, CA 94538 (US).

(72) Inventors: SVIRCHEVSKI, Julia, S.; 1073 McKay Drive, San Jose, CA 95131 (US). MIKHAYLICH, Katrina, A.; 1751 Wayne Avenue, San Jose, CA 95131 (US). FARBER, Jeffrey, J.; 24 Wexford Road, Delmar, NY 12054 (US).

(74) Agent: MARTINE, Peter, B.; Martine Penilla & Kim, LLP, 710 Lakeway Drive, Suite 170, Sunnyvale, CA 94086 (US).

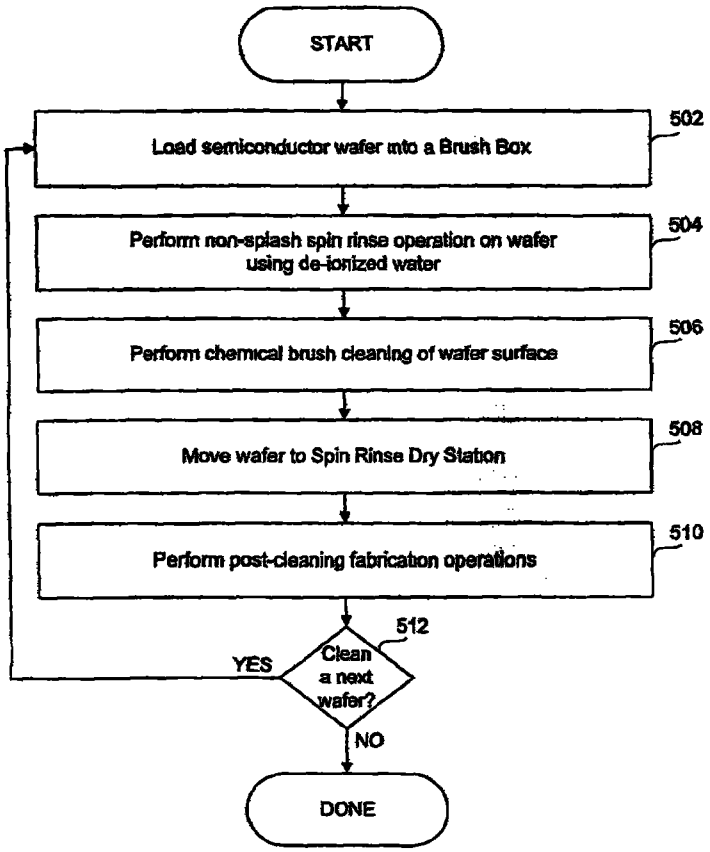
(81) Designated States *(national)*: IL, JP, KR, SG.

(84) Designated States *(regional)*: European patent (AT, BE, CH, CY, DE, DK, ES, FI, FR, GB, GR, IE, IT, LU, MC, NL, PT, SE).

Published:
— *With international search report.*

For two-letter codes and other abbreviations, refer to the "Guidance Notes on Codes and Abbreviations" appearing at the beginning of each regular issue of the PCT Gazette.

(54) Title: POST-PLASMA PROCESSING WAFER CLEANING METHOD AND SYSTEM



(57) Abstract: A method and system are provided for cleaning a surface of a semiconductor wafer following a plasma etching operation. The method is preferably performed inside a brush box (operation 502) and involves wetting the surface of the semiconductor wafer by using a non-splash rinse technique (operation 504). The non-splash rinse technique (operation 504) is configured to quickly and evenly saturate the surface of the semiconductor wafer with a liquid (preferably de-ionized water). The wetting will therefore remove unwanted residues that could otherwise further cause stains or scratches on the wafer surface. Following the wetting operation, the surface of the wafer may be finely scrubbed with a cleaning brush that applies a chemical solution to the surface of the wafer (operation 506). A second cleaning brush may also be implemented so that both the top and the bottom surfaces of the wafer may be finely scrubbed.

WO 00/79572 A1