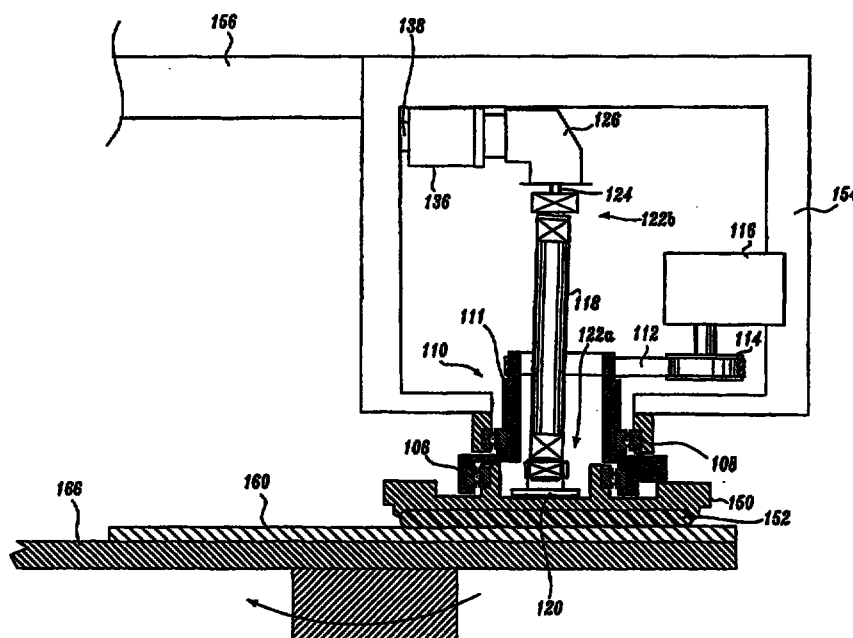




INTERNATIONAL APPLICATION PUBLISHED UNDER THE PATENT COOPERATION TREATY (PCT)

(51) International Patent Classification ⁶ : B24B 1/00, H01L 21/302	A1	(11) International Publication Number: WO 00/15387 (43) International Publication Date: 23 March 2000 (23.03.00)
(21) International Application Number: PCT/US99/21424 (22) International Filing Date: 16 September 1999 (16.09.99) (30) Priority Data: 09/153,993 17 September 1998 (17.09.98) US (71) Applicant: SPEEDFAM-IPEC CORPORATION [US/US]; 305 North 54th Street, Chandler, AZ 85226 (US). (72) Inventors: ADAMS, John, A.; 9785 Running Creek Lane, Escondido, CA 92026 (US). SMITH, Everett, D.; 8975 Lawrence Welk Drive, 152, Escondido, CA 92026 (US). SCHULTZ, Stephen, C.; 843 East Stanford Avenue, Gilbert, AZ 85234 (US). (74) Agent: LYCKE, Lawrence, E.; Christensen O'Connor Johnson & Kindness PLLC, Suite 2800, 1420 Fifth Avenue, Seattle, WA 98101-2347 (US).	(81) Designated States: IL, JP, KR, SG, European patent (AT, BE, CH, CY, DE, DK, ES, FI, FR, GB, GR, IE, IT, LU, MC, NL, PT, SE). Published <i>With international search report. Before the expiration of the time limit for amending the claims and to be republished in the event of the receipt of amendments.</i>	

(54) Title: OSCILLATING ORBITAL POLISHER AND METHOD



(57) Abstract

A method and apparatus for improving uniformity of the rate of removal of material from the surface of a semiconductor substrate (152) by chemical mechanical polishing. In accordance with the invention, the semiconductor substrate (152) is subjected to a combination of polishing motions, including orbital motion, and at least one additional polishing motion selected from rotational, oscillation, sweeping, and linear polishing motions. The invention also provides an improved method for conditioning polishing pads (160) to provide more uniform conditioning and to extend their useful life span.