



INTERNATIONAL APPLICATION PUBLISHED UNDER THE PATENT COOPERATION TREATY (PCT)

(51) International Patent Classification ⁶ : C30B 15/26, G01B 11/10	A1	(11) International Publication Number: WO 99/16940 (43) International Publication Date: 8 April 1999 (08.04.99)
(21) International Application Number: PCT/US98/20240 (22) International Filing Date: 29 September 1998 (29.09.98) (30) Priority Data: 08/939,802 30 September 1997 (30.09.97) US (71) Applicant: MEMC ELECTRONIC MATERIALS, INC. [US/US]; 501 Pearl Drive, P.O. Box 8, St. Peters, MO 63376 (US). (72) Inventor: FUERHOFF, Robert, H.; 3700 Runnymede Drive, St. Charles, MO 63301 (US). (74) Agents: HEJLEK, Edward, J. et al.; Senniger, Powers, Leavitt & Roedel, 16th floor, One Metropolitan Square, St. Louis, MO 63102 (US).		(81) Designated States: CN, 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.</i> <i>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: METHOD AND SYSTEM FOR CONTROLLING GROWTH OF A SILICON CRYSTAL (57) Abstract A method and system for determining a diameter of a silicon single crystal being pulled from a silicon melt contained in a heated crucible. The melt has a surface with a meniscus visible as a bright area adjacent the pulled crystal. A camera generates an image of the interior of the crucible including a portion of the bright area adjacent the crystal. Image processing circuitry defines a central window region of the image having an elliptical shape at a position corresponding to an approximate center of the crystal and processes the image as a function of its pixel values to detect edges within the central window region. The image processing circuitry further groups the detected edges to define an object in the image corresponding to the crystal, determines a dimension of the defined object and determines an approximate diameter of the crystal as a function of the determined dimension of the defined object.		