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(21) International Application Number: PCT/US98/07088 (22) International Filing Date: 8 April 1998 (08.04.98) (30) Priority Data: 08/863,960 27 May 1997 (27.05.97) US (71) Applicant: MEMC ELECTRONIC MATERIALS, INC. [US/US]; 501 Pearl Drive, P.O. Box 8, St. Peters, MO 63376 (US). (72) Inventors: RIES, Michael, J.; 4207 Eagle Rock Court, St. Charles, MO 63304 (US). HELLWIG, Lance, G.; 8908 Darnell Place, Jennings, MO 63136 (US). ROSSI, Jon, A.; 1605 Lochcrest Drive, Chesterfield, MO 63017 (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>
(54) Title: SECONDARY EDGE REFLECTOR FOR HORIZONTAL REACTOR (57) Abstract A horizontal reactor for depositing an epitaxial layer on a semiconductor wafer. The reactor includes a reaction chamber sized and shaped for receiving the semiconductor wafer and a susceptor having an outer edge and a generally planar wafer receiving surface positioned in the reaction chamber for supporting the semiconductor wafer. In addition, the reactor includes a heating array positioned outside the reaction chamber including a plurality of heat lamps and a primary reflector for directing thermal radiation emitted by the heat lamps toward the susceptor to heat the semiconductor wafer and susceptor. Further, the reactor includes a secondary edge reflector having a specular surface positioned beside the heating array for recovering misdirected thermal radiation directed generally to a side of the heating array and away from the susceptor. The secondary edge reflector is shaped and arranged with respect to the heating array and the susceptor for re-directing the misdirected thermal radiation to the outer edge of the susceptor. Thus, the secondary edge reflector heats the edge and reduces thermal gradients across the susceptor and the semiconductor wafer to inhibit slip dislocations in the wafer during epitaxial layer deposition.		