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(71) Applicant (for all designated States except US): **SOLAR IMPLANT TECHNOLOGIES INC.** [US/US]; 809B Cuesta Drive, #134, Mountain View, California 94040 (US).

(72) Inventors; and

(75) Inventors/Applicants (for US only): **ADIBI, Babak** [GB/US]; 439 Knoll Drive, Los Altos, California 94024 (US).
MURRER, Edward S. [US/US]; 1583 Pleasant View Rd., Aptos, California 95003 (US).

(74) Agent: **HAVERSTOCK, Thomas B.**; 162 N. Wolfe Rd., Sunnyvale, California 94086 (US).

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(54) Title: SOLAR CELL FABRICATION USING IMPLANTATION

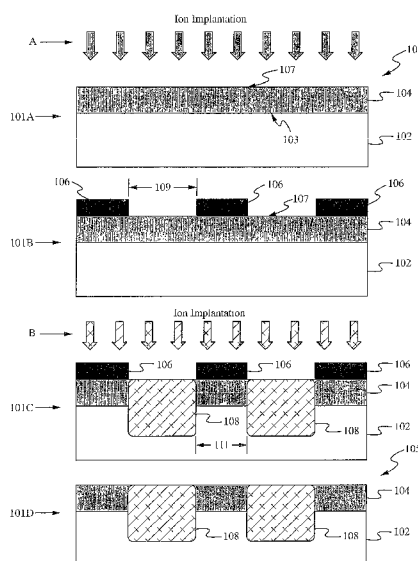


Fig. 1

(57) Abstract: A solar cell device includes a silicon substrate including a preexisting dopant. A homogeneous lightly doped region is formed on a surface of the silicon substrate to form a junction between the preexisting dopant and the lightly doped region. A heavily doped region is selectively implanted on the surface of the silicon substrate. A seed layer is formed over the heavily doped region. A metal contact is formed over the seed layer. The device can include an anti-reflective coating. In one embodiment, the heavily doped region forms a parabolic shape. The heavily doped regions can each be a width on the silicon substrate a distance in the range 50 to 200 microns. Also, the heavily doped regions can be laterally spaced on the silicon substrate a distance in the range 1 to 3 mm from each other. The seed layer can be a silicide.