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(71) Applicant: **INTEVAC, INC.** [US/US]; 3560 Bassett Street, Santa Clara, CA 95054 (US).

(72) Inventors; and
(71) Applicants : **PEDERSON, Terry** [US/US]; 1547 Nuthatch Lane, Sunnyvale, CA 94087 (US). **HIESLMAIR, Henry** [US/US]; 545 Dawn Drive, Sunnyvale, CA 94087 (US). **CHUN, Moon** [US/US]; 852 Foxworthy Avenue, San Jose, CA 95125 (US). **PRABHAKAR, Vinay** [IN/US]; 175 Calvert Drive, Apt # N202, Cupertino, CA 95014 (US). **ADIBI, Babak** [US/US]; 439 Knoll Drive, Los Altos, CA 94024 (US). **BLUCK, Terry** [US/US]; 3128 Butte Street, Santa Clara, CA 95051 (US).

(74) Agent: **BACH, Joseph**; Nixon Peabody LLP, 401 9th Street, N.W. Suite 900, Washington, DC 20004 (US).

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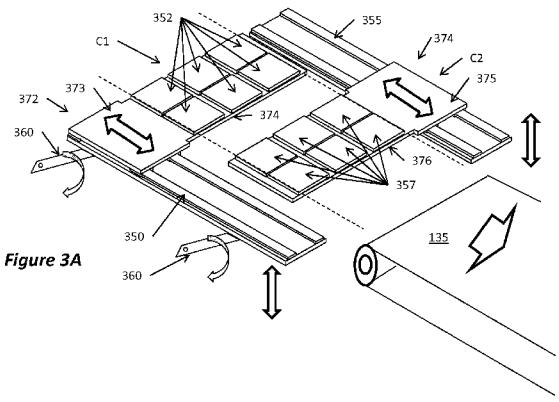


Figure 3A

(57) Abstract: A system for processing substrates has a vacuum enclosure and a processing chamber situated to process wafers in a processing zone inside the vacuum enclosure. Two rail assemblies are provided, one on each side of the processing zone. Two chuck arrays ride, each on one of the rail assemblies, such that each is cantilevered on one rail assemblies and support a plurality of chucks. The rail assemblies are coupled to an elevation mechanism that places the rails in upper position for processing and at lower position for returning the chuck assemblies for loading new wafers. A pickup head assembly loads wafers from a conveyor onto the chuck assemblies. The pickup head has plurality of electrostatic chucks that pick up the wafers from the front side of the wafers.

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