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(71) Applicant (for all designated States except US): LAM RESEARCH CORPORATION [US/US]; 4650 Cushing Parkway, Fremont, California 94538-6470 (US).

(72) Inventors; and

(75) Inventors/Applicants (for US only): RICCI, Anthony [US/US]; 1513 Yukon Drive, Sunnyvale, California 94087 (US). ULLAL, Saurabh [IN/US]; 5068 Sloan Way, Union City, California 94587 (US). KANG, Michael [US/US]; 5612 Lysander Way, San Ramon, California 94582 (US). BUSCHE, Matthew [US/US]; 550 Moreland Way, Apt. 4612, Santa Clara, California 95054 (US).

(74) Agent: SKIFF, Peter K.; Buchanan Ingersoll & Rooney P.c., (Customer No. 21839), P. O. Box 1404, Alexandria, Virginia 22313-1404 (US).

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— as to applicant's entitlement to apply for and be granted a patent (Rule 4.17(ii))

[Continued on next page]

(54) Title: APPARATUS AND METHOD FOR TEMPERATURE CONTROL OF A SEMICONDUCTOR SUBSTRATE SUPPORT

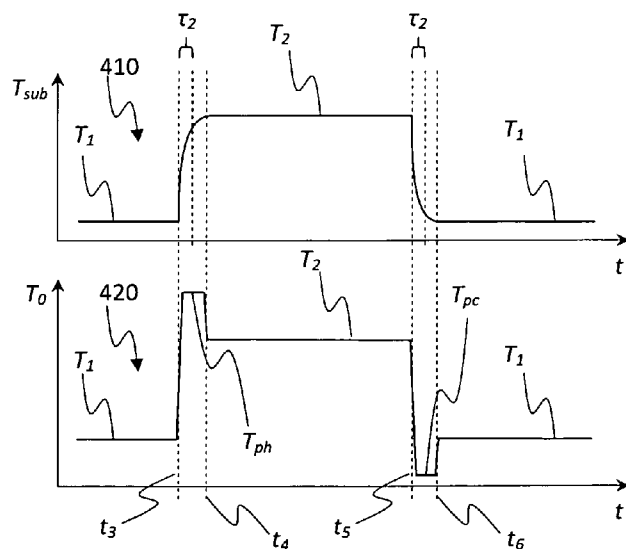


Fig. 4

(57) Abstract: A recirculation system of a substrate support on which a semiconductor substrate is subjected to a multistep process in a vacuum chamber, the system comprising a substrate support having at least one liquid flow passage in a base plate thereof, an inlet and an outlet in fluid communication with the flow passage, a supply line in fluid communication with the inlet, and a return line in fluid communication with the outlet; a first recirculator providing liquid at temperature T_1 in fluid communication with the supply line and the return line; a second recirculator providing liquid at temperature T_2 in fluid communication with the supply line and the return line, temperature T_2 being at least 10°C above temperature T_1 ; a pre-cooling unit providing liquid at temperature T_{pc} connected to the inlet and the outlet, temperature T_{pc} being at least 10°C below T_1 ; a pre-heating unit providing liquid at temperature T_{ph} connected to the inlet and the outlet, temperature T_{ph} being at least 10°C above T_2 ; a controller operable to selectively operate valves of the recirculation system to recirculate liquid between the flow passage and the first recirculator, the second recirculator, the pre-cooling unit or the pre-heating unit.



- *as to the applicant's entitlement to claim the priority of the earlier application (Rule 4.17(iii))* — *before the expiration of the time limit for amending the claims and to be republished in the event of receipt of amendments (Rule 48.2(h))*

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