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(71) Applicant *(for all designated States except US)*: **APPLIED MATERIALS, INC.** [US/US]; 3050 Bowers Avenue, Santa Clara, CA 95054 (US).

(72) Inventors; and

(75) Inventors/Applicants *(for US only)*: **HILKENE, Martin, A.** [GB/US]; 1353 Pheasant Drive, Gilroy, CA 95020 (US). **SCOTNEY-CASTLE, Matthew, D.** [GB/US]; 17045 John Telfer Drive, Morgan Hill, CA 95037 (US). **PORSHNEV, Peter, I.** [BY/US]; 1255 Sierra Village Place, San Jose, CA 95132 (US). **GOUK, Roman** [UA/US]; 6333 Lillian Way, San Jose, CA 95120 (US). **VERHAVERBEKE, Steven** [BE/US]; 139 Welsh Street, Unit 10, San Francisco, CA 94107 (US).

(74) Agents: **PATTERSON, Todd, B.** et al.; Patterson & Sheridan, L.L.P., 3040 Post Oak Blvd., Suite 1500, Houston, TX 77056-6582 (US).

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(54) Title: TEMPERATURE CONTROL OF A SUBSTRATE DURING A PLASMA ION IMPLANTATION PROCESS FOR PATTERNED DISC MEDIA APPLICATIONS

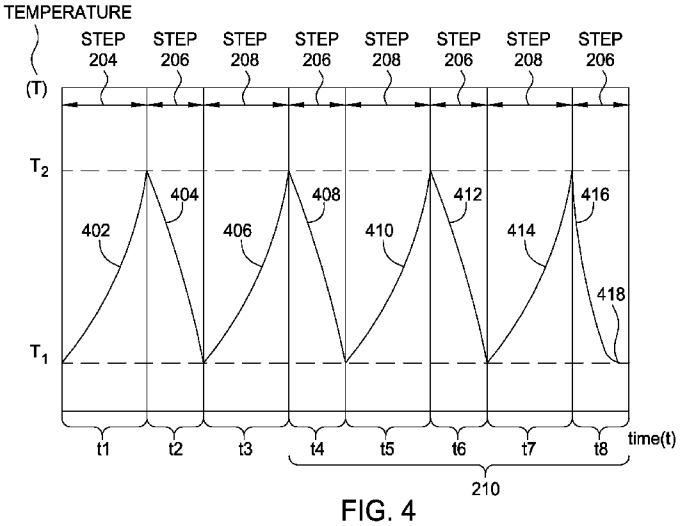


FIG. 4

(57) Abstract: Embodiments of the invention provide a method of reducing thermal energy accumulation during a plasma ion implantation process for forming patterns including magnetic and non-magnetic domains on a magnetically susceptible surface on a substrate. In one embodiment, a method of controlling a substrate temperature during a plasma ion implantation process includes (a) performing a first portion of a plasma ion implantation process on a substrate having a magnetically susceptible layer formed thereon in a processing chamber for a first time period, wherein a temperature of the substrate is maintained below about 150 degrees Celsius, (b) cooling the temperature of the substrate after the first portion of the plasma ion implantation process has been completed, and (c) performing a second portion of the plasma ion implantation process on the substrate, wherein the temperature of the substrate is maintained below 150 degrees Celsius.

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