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78th Avenue, Portland, OR 97225 (US). **MATSUMOTO, Hisashi** [JP/US]; 2599 NW Overlook Drive, Apt. 824, Hillsboro, OR 97124 (US). **DAVIGNON, John** [US/US]; 530 NE Geraldine Drive, Hillsboro, OR 97124 (US).

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(74) **Agent: LEVINE, Michael, L.**; Steel Rives, LLP, 900 SW Fifth Avenue, Suite 2600, Portland, OR 97204 (US).

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(71) **Applicant** (for all designated States except US): **ELECTRO SCIENTIFIC INDUSTRIES, INC.** [US/US]; 13900 NW Science Park Drive, Portland, OR 97229-5491 (US).

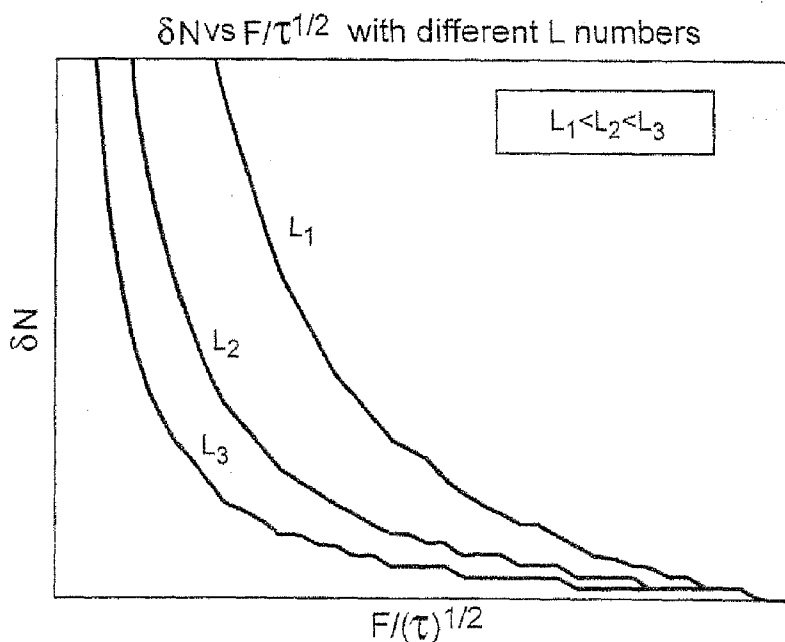
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(72) Inventors; and

(75) **Inventors/Applicants** (for US only): **LEI, Weisheng** [CN/US]; 17284 NW Millbrook Street, Portland, OR 97229 (US). **SIMENSON, Glenn** [US/US]; 3925 SW

[Continued on next page]

(54) Title: MICROMACHINING WITH SHORT-PULSED, SOLID-STATE UV LASER



(57) **Abstract:** In some embodiments, laser output including at least one laser pulse (32) having a wavelength shorter than 400 microns and having a pulsewidth shorter than 1,000 picoseconds permits the number (SN) of pulses used to clean a bottom surface of a via or the surface of a solder pad to increase process throughput. An oscillator module (12) in cooperation with an amplification module (16) may be used to generate the laser output.



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