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## Method and Apparatus for Removal of Minute Particles from a Surface Using Thermophoresis to Prevent Particle Redeposition

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**Allen**

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(54) **METHOD AND APPARATUS FOR REMOVAL OF MINUTE PARTICLES FROM A SURFACE USING THERMOPHORESIS TO PREVENT PARTICLE REDEPOSITION**

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(\* ) Notice: Subject to any disclaimer, the term of this patent is extended or adjusted under 35 U.S.C. 154(b) by 116 days.

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(57) **ABSTRACT**

A method and apparatus for removing minute particles from a surface of a sample are provided that prevent redeposition of the particles onto the surface. By combining thermophoresis with laser assisted particle removal (LAPR), the methods and apparatus remove minute particles (for example, micrometer and nanometer sizes) and assure that they will not redeposit.

**13 Claims, 5 Drawing Sheets**

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(52) **U.S. Cl.** ..... **134/1**; 134/1; 134/63; 156/345.5; 216/65; 219/121.6; 219/121.68; 219/121.69; 219/121.84; 219/121.85; 219/121.86; 438/795; 438/798

(58) **Field of Search** ..... 134/1, 1.3; 156/345.5; 216/65; 219/121.6, 121.68, 121.69, 121.84, 121.85, 121.86; 438/795, 798

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