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Hajduk et al.

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(54) **HIGH THROUGHPUT MECHANICAL PROPERTY TESTING OF MATERIALS LIBRARIES USING CAPACITANCE**

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*U.S. application Ser. No. 09/420,334 entitled "Graphic Design of Combinatorial Material Libraries" (Lacy, et al.) filed on Oct. 18, 1999.

(*) Notice: Subject to any disclaimer, the term of this patent is extended or adjusted under 35 U.S.C. 154(b) by 102 days.

*U.S. patent application Ser. No. 09/305,830 titled "Synthesizing Combinatorial Libraries of Materials" (Rust, et al.) filed on May 5, 1999.

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*U.S. application Ser. No. 09/550,549 entitled "Automated Process Control And Data Management System And Methods" (Crevier, et al.) filed on Apr. 14, 2000.

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(51) **Int. Cl.**⁷ **G01R 27/26**; H01H 31/12; G01L 1/14

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(52) **U.S. Cl.** **324/663**; 324/452; 324/661; 73/862.626

(57) **ABSTRACT**

(58) **Field of Search** 324/663, 452, 324/453, 661, 662, 456, 71.1, 73.1; 226/94; 204/298.11; 73/862.626, 862.337; 702/33

One aspect of the present invention provides instruments for measuring mechanical properties of a combinatorial library of materials. The instruments include at least one capacitor to which a member of a library of material samples is removably secured for testing; at least one voltage source for delivering one or more forces to each library member; and at least one sensing device for monitoring the response each library member to the one or more forces. Another aspect of the present invention provides methods of screening a combinatorial library of materials where the method monitors the responses of a plurality of samples on a substrate to a force induced by a capacitor.

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