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# United States Patent [19]

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Lindsay et al.

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## [54] SCANNING PROBE MICROSCOPE

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[75] Inventors: **Stuart M. Lindsay; Tianwei Jing**, both of Tempe, Ariz.

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[73] Assignee: **Molecular Imaging Corporation**, Tempe, Ariz.

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[21] Appl. No.: **874,440**

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[22] Filed: **Jun. 16, 1997**

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### Related U.S. Application Data

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[60] Division of Ser. No. 653,200, May 24, 1996, Pat. No. 5,675,154, which is a continuation-in-part of Ser. No. 388,068, Feb. 10, 1995.

[51] Int. Cl.<sup>6</sup> ..... **H01J 37/20**

[52] U.S. Cl. .... **250/306; 250/442.11; 250/440.11**

[58] Field of Search ..... **250/306, 307, 250/442.11, 440.11; 73/105**

(List continued on next page.)

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## [57] ABSTRACT

Features for incorporation with scanning probe microscopes are provided which may be used separately or together. The features include constructing the microscope with a hinged top housing providing easy access to the heart of the microscope; a self-aligning and torque limiting magnetic clutch coupling a motor drive powering at least one vertical adjustment screw of the microscope; a removable microscope head for easy adjustment; an optical microscope, optionally mounted to an electronic camera and imaging system, installed adjacent to the head; operation on an inverted microscope stage; bowing error correction; a gas sparging system providing contaminant and noise reduction; a glove box type of loading system so that reactive materials may be safely loaded into the microscope; and a compact desk-top chamber which provides acoustic and vibration isolation.

(List continued on next page.)

**5 Claims, 16 Drawing Sheets**

