

Abstract Submitted
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Scanning Probe Recognition Microscopy Investigation of Cell Elastic Properties¹ Y. FAN, Q. CHEN, V.M. AYRES, L. UDPA, Michigan State University, A.F. RICE, Veeco Instruments — Scanning Probe Recognition Microscopy is a new scanning probe capability under development within our group to reliably return to and directly interact with a specific nanoscale feature of interest [ref. 1]. It is a recognition-driven and learning approach, made possible through combining SPM piezoelectric implementation with on-line image processing and dynamically adaptive learning algorithms. Segmentation plus a recognized pattern is implemented within a scan plan and used to guide the tip in a recognition-driven return to a specific site. In the present work, a preliminary coarse resolution scan and on-line processing is performed to detect a target cell. Force volume imaging is then performed at a finer resolution to determine the elastic properties. Elastic properties of cells are interpreted in terms of healthy and pathological cell functions. [ref. 1]. Y. Fan, L. Udpa, Q. Chen and V. Ayres, “Scanning Probe Recognition Microscopy Investigation of Tissue Scaffolding Properties,” Proceedings of the 2004 Biomedical Engineering Society Annual Meeting, October 13-16, 2004, Philadelphia, PA

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