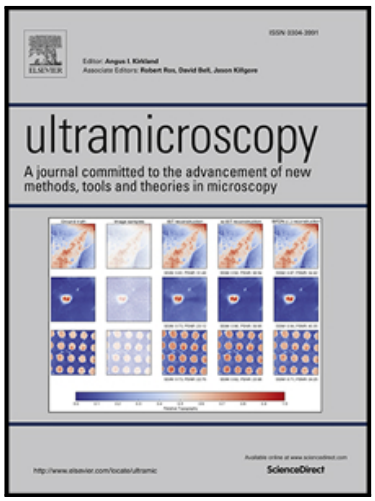

Adaptive-scanning, Near-minimum-deformation Atomic Force Microscope Imaging of Soft Sample in Liquid: Live Mammalian Cell Example

Juan Ren, Qingze Zou

PII: S0304-3991(17)30340-6
DOI: 10.1016/j.ultramic.2017.12.020
Reference: ULTRAM 12513

To appear in: *Ultramicroscopy*

Received date: 18 July 2017
Revised date: 10 December 2017
Accepted date: 27 December 2017

Please cite this article as: Juan Ren, Qingze Zou, Adaptive-scanning, Near-minimum-deformation Atomic Force Microscope Imaging of Soft Sample in Liquid: Live Mammalian Cell Example, *Ultramicroscopy* (2017), doi: 10.1016/j.ultramic.2017.12.020

Highlights

- A high-speed AFM imaging mode with near-minimum sample deformation is proposed.
- The scanning speed is adjusted adaptively to accommodate topography/force variations.
- A data-driven iterative control is integrated for high-speed tracking sample profile.
- The normal force set-point is adaptively adjusted near the minimal required value.
- Experimental imaging speed on live cells was increased over eight times.