Abstract Submitted
for the MAR15 Meeting of
The American Physical Society

AFM Studies of Conformational Changes in Proteins and Peptides NICOLETA PLOSCARIU[1], PINAKIN SUKTHANKAR[2], JOHN TOMICH[3], ROBERT SZOSZKIEWICZ[4], Kansas State University — Here, we present estimates of molecular stiffness and mechanical energy dissipation factors for some examples of proteins and peptides. The results are obtained from AFM force spectroscopy measurements. To determine molecular stiffness and mechanical energy dissipation factors we developed a model based on measuring several resonance frequencies of an AFM cantilever in contact with either single protein molecule or peptides adsorbed on arbitrary surface. We used compliant AFM cantilevers with a small aspect ratio - a ratio of length to width - in air and in liquid, including biologically relevant phosphate buffered saline medium.

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Date submitted: 14 Nov 2014 Electronic form version 1.4