

357d Image Analysis Methods for the Study of Biomolecular Complexes Using Afm

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Atomic Force Microscopy is a useful tool with which to characterize the topography and network structure of natural and synthetic biomolecular networks. However because of the inherent complexity of biomaterials, extracting useful information in a systematic way from AFM images is challenging. Using the cellular cytoskeleton of human red blood cells as an example, we developed a systematic method for comparing related and unrelated specimens in terms of their network connectivity, and topographic restructuring causes by either cytoskeleton specific diseases or chemical treatment to activate specific associations within the biomolecular network. The implications for diagnosis of disease, and the characterization of nanostructured biomaterials are discussed.