

Abstract Submitted
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Distinguishing single and multiple biomolecular bonds in an atomic force microscopy experiment KAREEM ELHAGE, NICHOLAS FAUCHER, EDWARD KRAMKOWSKI, Wayne State University, ANWESHA SARKAR, Iowa State University, PETER HOFFMANN, Wayne State University — The goal of this experiment was to clearly characterize single biomolecular bonds using an AFM. However, it can be difficult to get clean force curves as a result of the formations of multiple bonds. We developed a method to distinguish multiple bonds from single bonds. To test this model we measured forces between avidin and biotin. This was accomplished by incubating the substrate in a biotin solution and taking force measurements with an avidin functionalized cantilever. The results of the experiment showed that we were able to clearly distinguish single from multiple bonds. Based on this, we were able to analyze observed rupture force distributions and obtained bonding characteristics of single avidin-biotin bonds.

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