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**Mechanical Single Molecule Investigations of SNARE Protein Interactions** WEI LIU, VEDRANA MONTANA, VLADIMIR PARPURA, UMAR MOHIDEEN, Department of Physics, UC Riverside, Riverside, CA — We used an Atomic Force Microscope (AFM) to perform single molecule investigations of the SNARE (soluble N-ethyl maleimide-sensitive fusion protein attachment protein receptors) proteins, syntaxin, synaptobrevin and SNAP 25. These proteins are involved in the docking and release of neurotransmitters. The rupture force and extension of the interactions were measured. Chemical reaction rate theory was applied to obtain the energy barrier width and lifetime. Their temperature dependence was also explored.

Wei Liu
Department of Physics, UC Riverside, CA

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