

Abstract Submitted  
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**Single Molecule Manipulation and Self-Assembly of Amyloid  $\beta$ /A4 Precursor Protein on Ag(111)**<sup>1</sup> SAJIDA KHAN, K. CLARK, A. DESHPANDE, S.-W. HLA, Ohio University — We perform a single molecule level study of the RERMS sequence of amyloid  $\beta$ /A4 precursor protein fragment on a clean Ag(111) surface using a low-temperature scanning-tunneling-microscope (STM) system at 5K. The mechanical stability of individual protein fragments are checked by laterally manipulating them with the STM tip. Moreover, we are able to form a well ordered two-dimensional layer of the protein fragment by increasing the deposition time. A unit cell has been assigned and a model for the molecular arrangement inside the structure is proposed. This work opens possibilities of using well ordered protein structures on inorganic surfaces for future bimolecular electronic and nano-bio applications.

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Sajida Khan  
Ohio University

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