

Abstract Submitted  
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**Biomolecules at the Interfaces of Nanostructured Materials<sup>1</sup>**

CHENGCHEN GUO, School of Molecular Sciences, Arizona State University, GREGORY HOLLAND, Department of Chemistry and Biochemistry, San Diego State University, JEFFERY YARGER, School of Molecular Sciences, Arizona State University — To achieve the goal of applying biocompatible nanomaterials in developing biosensors and drug delivery systems relies on the fundamental understanding of the physical and chemical behavior of biomolecules at the interfaces of nanomaterials. Recently, researches have been making some progress in understanding the interaction between peptides/protein and various nanomaterials by using the simulation and modeling methods. However, experimental molecular level details focusing on the binding/interacting mechanism at nanoparticle (NP) surfaces are still lacking. A very first step towards the overall goal of understanding complicated biological systems is to understand how amino acids interact at the interfaces. Our group has been using a combination of nuclear magnetic resonance (NMR) techniques and optical spectroscopies to investigate these interactions and ultimately, to determine the structure of biomolecules at the surface of nanomaterials. We believe a better understanding of the molecular structure and dynamics of peptides and proteins at the interfaces of nanostructured materials will bring us closer to building devices that couple the unique properties of biomolecules with nanomaterials. Recent results from our research group on this topic will be discussed.

<sup>1</sup>Biomolecules at the Interfaces of Nanostructured Materials

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