

Abstract Submitted
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Kinetics of Protein Adsorption at liquid/solid interfaces MARKUS BELLION, LUDGER SANTEN, FR 7.1 Theoretische Physik, Universität des Saarlandes, 66041 Saarbrücken , ARMIN NAGEL, HUBERT MANTZ, ANTHONY QUINN, KARIN JACOBS, FR 7.2 Experimentalphysik, Universität des Saarlandes, 66041 Saarbrücken — Protein adsorption processes are of crucial importance in many biomedical processes. From a physical point of view these processes raise a number of challenging questions, e.g.: How does the surface influence the conformation of proteins at the surface? What are the characteristics of the protein film at the liquid/solid interface? In this work we investigate the adsorption kinetics of salivary proteins on different kinds of surfaces in a liquid environment. The adsorbed protein layers are analyzed by means of ellipsometry, plasmon resonance, and SPM. It turns out that the adsorbed amount of proteins is sensitive to the long ranged interactions of the solid surface. The experimental data are compared to extensive Monte Carlo simulation of a colloidal protein model. The Monte Carlo results strongly suggest that induced conformational changes lead to the experimentally observed three step kinetics of amylase.

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