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"Investigation of conformational dynamics of adsorbed biopolymers at a single-molecule level"

Adsorption of biopolymers, such as DNA and proteins, mediates many molecular biological processes and is widely used in biotechnological devices such as biosensors and adsorption chromatographs. Knowledge of the conformational behavior of adsorbed biopolymer molecules is of high relevance, since biopolymer conformation determines its biological activity and may trigger the flow of biological and biotechnological processes taking place on a surface. This talk is devoted to the direct investigation of conformation and conformational dynamics of individual DNA and protein molecules after their adsorption on the model surfaces using atomic force microscopy. The obtained results represent a new insight into the conformational dynamics of adsorbed biopolymer molecules and may be useful in biotechnology, for example, for the development of biocompatible materials and sensor surfaces.