

NON-CONTACT DYNAMIC AFM AND OPTO-MAGNETIC DETECTION OF INTERMOLECULAR INTERACTIONS

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The excellent properties of magnetic glyconanoparticles regarding their stability, solubility in water, their small size [1] and magnetic properties [2] make them ideal candidates for important biomedical applications. The biofunctional magnetic nanoparticles success in biomedicine relies on their ability to recognize their final target. Our work is devoted to the study of the interactions between biofunctional magnetic nanoparticles and biomolecules (fig. 1) by non-contact dynamic AFM [3], force spectroscopy and novel opto-magnetic methods.

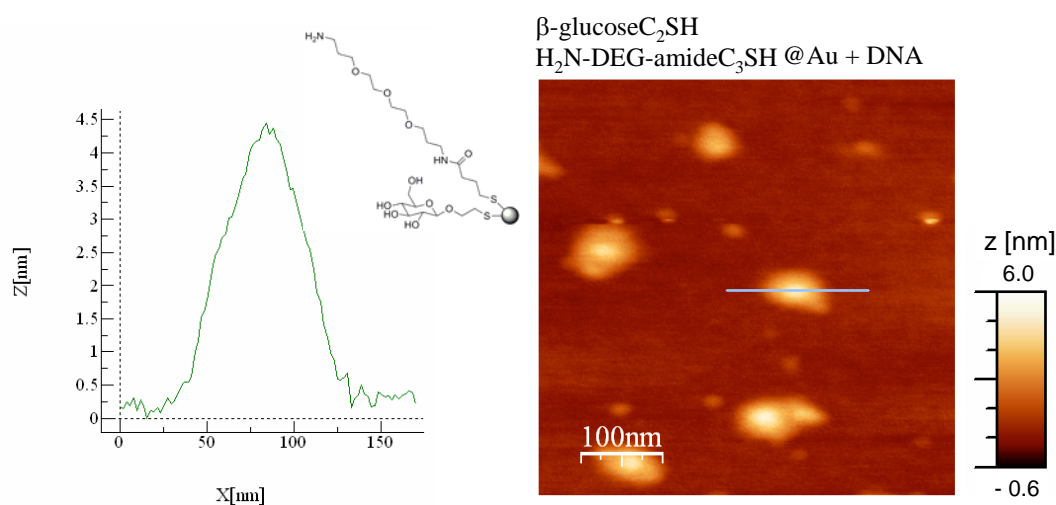


Figure 1 Nanoparticles covered by a 1:1 mixture of β -glucose and an amine-ending polyethylene glycol (PEG) linker incubated with DNA. Strong electrostatic interactions between the amines and the DNA phosphate groups lead to the wrapping of the DNA molecules around the GNPs. The size of the globes is less than 100 nm (profile on the left).

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