

Abstract Submitted
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High Deformability and Particle Size Distribution of Monodisperse Phytoglycogen Nanoparticles Revealed By Atomic Force Microscopy Imaging BENJAMIN BAYLIS, JOHN DUTCHER, University of Guelph — We have used atomic force microscopy (AFM) imaging in water to determine the volume of hydrated monodisperse phytoglycogen nanoparticles adsorbed onto mica surfaces. By significantly reducing the interaction between the AFM tip and the “sticky” nanoparticles, we were able to obtain high quality images. We found that the adsorbed particles are highly deformed, forming pancake-like objects on the hydrophilic mica surface. By measuring the distribution of particle volumes, we calculated the average effective spherical radius of the hydrated particles, and compared this value with that measured in solution using small angle neutron scattering. These measurements illustrate the distinct advantages of AFM imaging over other imaging techniques, namely the ability to measure the height of objects in a liquid environment.

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