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Absorption of nanoparticles onto curved surfaces CHIH-YU JAO, Virginia Tech Dept of Physics, JIHAENG YI, ISHAC L. N. KANDAS, BO LIU, YONG XU, Virginia Tech ECE Dept., HANS D. ROBINSON, Virginia Tech Dept of Physics — We study the adsorption of gold nanospheres onto cylindrical and spherical glass surfaces from stagnant aqueous particle suspensions. The curved surfaces were obtained as tapers and microspheres fabricated from optical fibers and were coated with a nm-thick layer of the polycation polyallylamine hydrochloride, causing irreversible adsorption of the negatively charged spheres. Our results fit well with theory, which predicts that the rates of particle adsorption will depend strongly on the surface geometry. In particular, *adsorption is significantly faster on curved than on planar surfaces* at times long enough that the particle diffusion length is large compared to the surface curvature. This is of particular importance for plasmonic sensors and other devices where particles are deposited from a suspension onto surfaces which may have non-trivial geometries.

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