Supporting Information

The Distance Dependence of Colloidal Au-Amplified Surface Plasmon Resonance

Lin He[‡*], Emily A. Smith[§], Michael J. Natan[†] and Christine D. Keating*

Department of Chemistry

The Pennsylvania State University

University Park, PA 16802-6300

*: Corresponding Authors:

lin_he@ncsu.edu; 1-919-515-2993;

keating@chem.psu.edu; 1-814-863-7832

‡: Current address: Department of Chemistry,

North Carolina State University, Raleigh, NC 27695

§: Current address: Department of Chemistry,

University of Arizona, Tucson, AZ 85721

†: Current address: Nanoplex Technologies, Inc.

1430 O'Brien Drive, Menlo Park, CA 94025-1432

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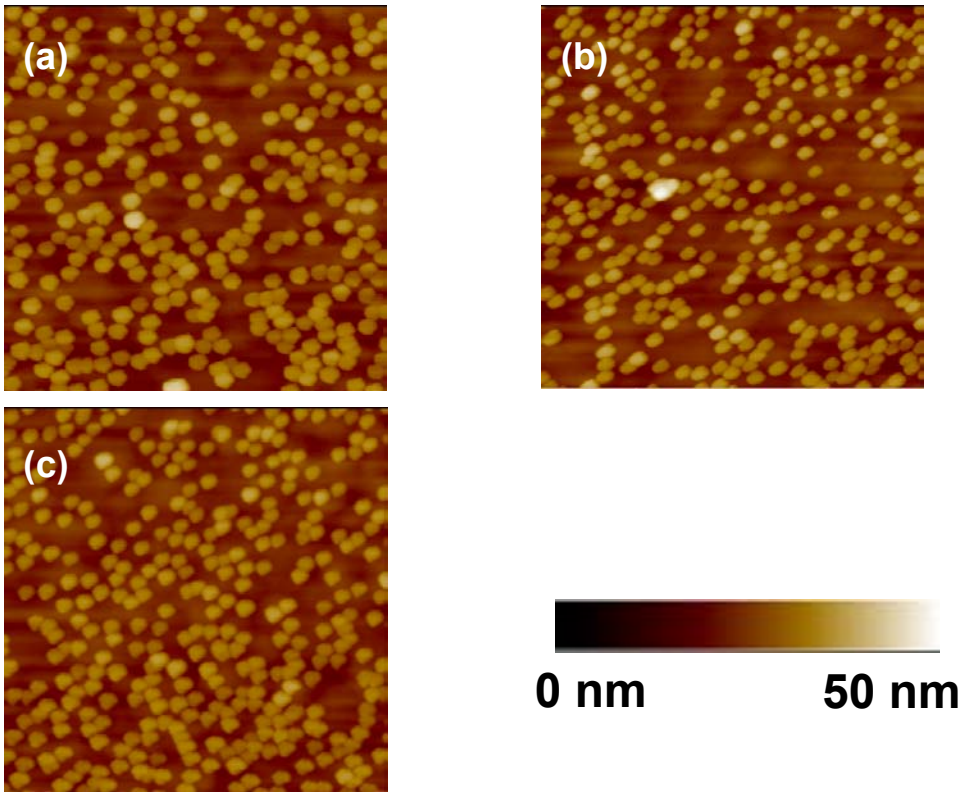
Table I. Comparison of SiO_2 film thickness (nm) measured with different techniques.

QCM[a]	Ellipsometry	AFM[b]	Average[c]
5	4.2	8	6
15	14	17	16
20	19	19	19
25	22	22	22
30	26	27	27
35	29	30	30
40	33	36	35
45	37	38	38
50	41	43	42
55	49	49	49

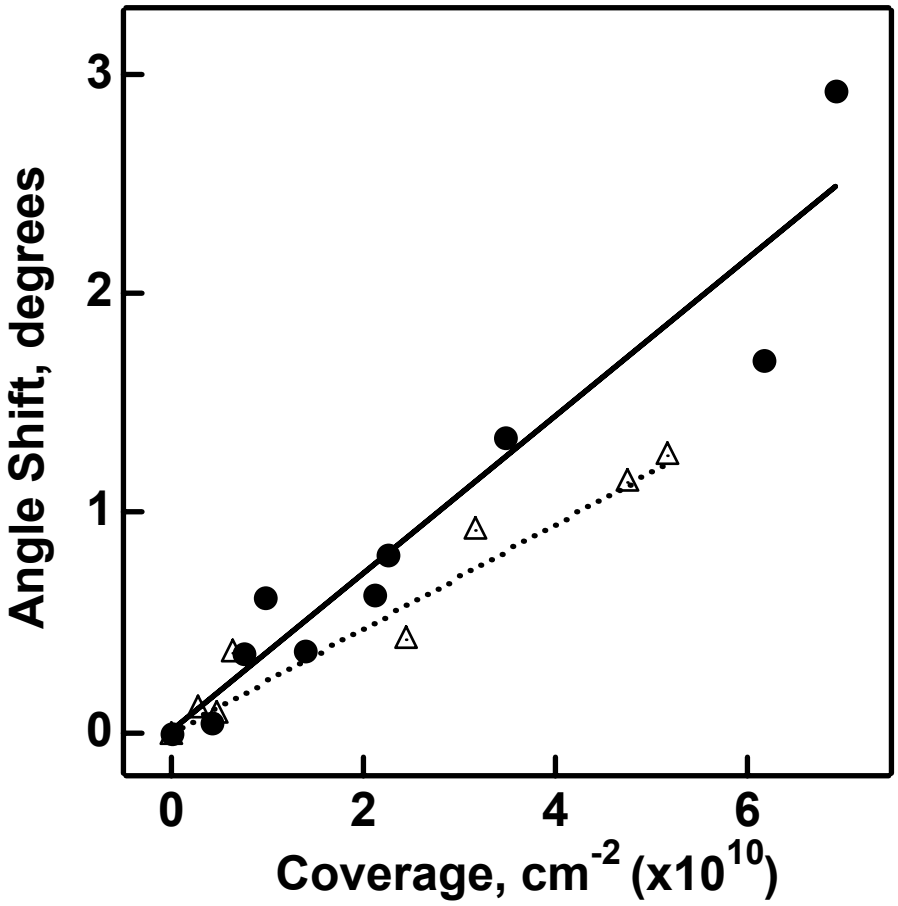
[a]QCM: quartz crystal microbalance inside the thermoevaporator.

[b]AFM: atomic force microscope.

[c]Calculated average from Ellipsometry and AFM results.



Supporting Information 2. Atomic force microscopic images of SPR substrates with (a) 15 nm, (b) 25 nm, and (c) 35 nm thick SiO_2 as the spacer. The surface coverage is at 3 x10^{10} colloidal Au particles/cm^2 with less than 10% deviation. Please note that the particles in the images appear larger than their actual sizes, mainly due to the artifacts of the AFM tip. The size of the particles was determined using TEM, and the surface coverage was calculated by a manual counting.



Supporting Information 3. The SPR angle shifts as functions of particle coverage on a bare Au surface (∆) and a 25-nm SiO_2-coated Au surface (•). Particles were immobilized using APTMS chemistry directly atop SiO_2 overlayer.