Supplementary Materials

Three-Dimensional Cavity-Coupled Metamaterials for Plasmonic Color and Real-Time Colorimetric Biosensor

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Table S1[#]

Concentration of glycerin	Refraction Index
0%	1.3311
10%	1.3448
20%	1.3575
30%	1.3707
40%	1.3841
50%	1.3981
60%	1.4128

Table S2

Refraction Index	Dip positions (7 min)	Dip positions (9 min)
1.3311	551.28 nm	634.38 nm
1.3448	552.07 nm	640.61 nm
1.3575	558.37 nm	656.16 nm
1.3707	562.37 nm	661.94 nm
1.3841	564.67 nm	668.11 nm
1.3981	567.82 nm	677.86 nm
1.4128	575.31 nm	691.80 nm

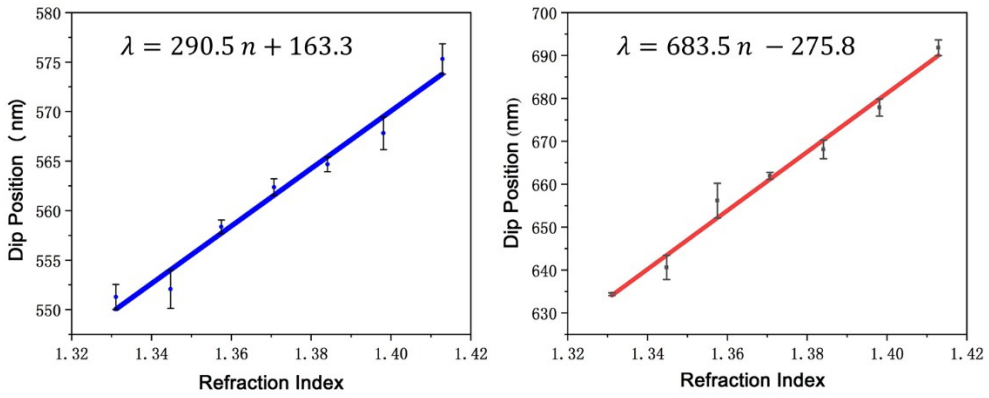

Figure S1. Dip position of the spectra from Fig.4b as a function of the refraction index.

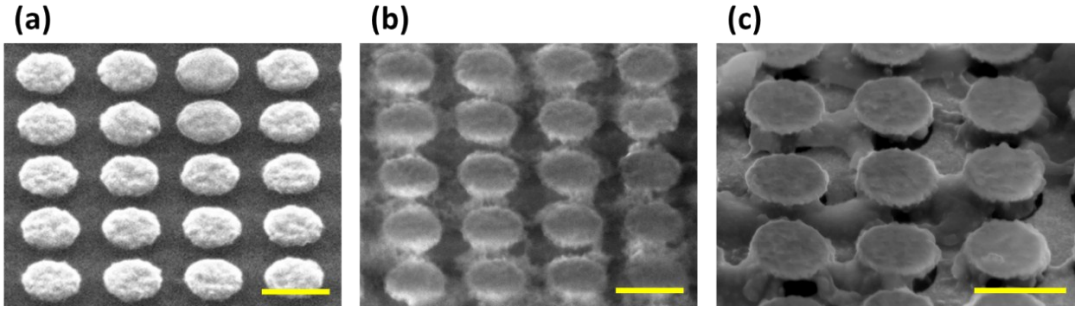

Figure S2. SEM images of the metamaterials before (a) and after (b) biotin and streptavidin immobilized. (c) 60° tilt view of the metamaterials to demonstrate the biomolecules filling in the cavities. The scale bar is 500 nm.

Table S3

Time (min)	Dip positions (nm)	Dip shifts (nm) *Comparing to 0 min*
0	650.72	0
1	652.28	1.56
5	656.94	6.22
10	668.58	17.86
15	674.78	24.06
20	680.20	29.48
25	680.97	30.25
30	678.25	27.53
60	683.29	32.57

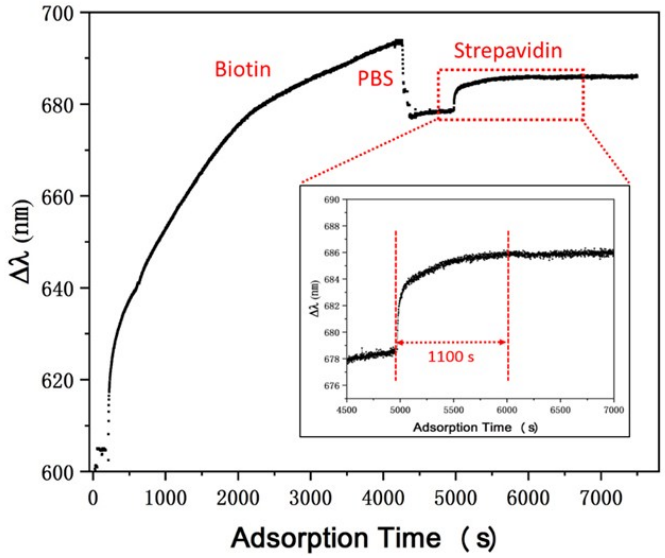

Figure S3. Adsorption dynamic curves of BAS binding to SPR chip. The SPR equipment is based on the Kretschmann configuration.

[#] Multidisciplinary Engineering, Refractive index of Glycerine-water solutions at 20^{0}C (69^{0}F). http://edge.rit.edu/edge/P13051/public/Research%20Notes/refractive%20index%20glycerin%20water.pdf