ADVANCED FUNCTIONAL MATERIALS

Supporting Information

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*Yan Hong, Yue Qiu, Tianhong Chen, and Björn M. Reinhard**

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Rational Assembly of Optoplasmonic Hetero-Nanoparticle-Arrays with Tunable Photonic-Plasmonic Resonances

By *Yan Hong, Yue Qiu, Tianhong Chen, and Björn M. Reinhard**
[*] Y. Hong, Y. Qiu, T. Chen, Prof. B. M. Reinhard
Department of Chemistry and The Photonics Center, Boston University,
Boston, MA 02215, USA
E-mail: (bmr@bu.edu)

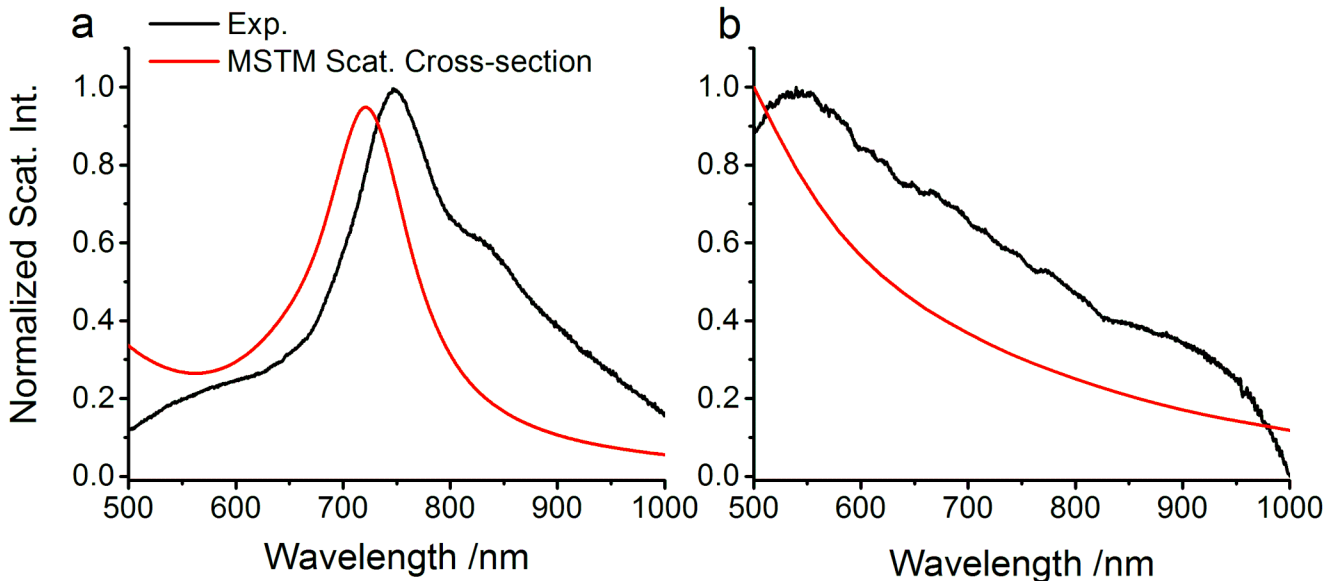

Figure. S1. Experimental and MSTM-simulated far field spectra of optoplasmonic array components. a) Spectra of Au clusters. For the MSTM result, a single Au trimer as described in the Methods section was simulated. b) Spectra of TiO_2 NP. The black curve represents the spectrum of an individual TiO_2 NP immobilized on glass substrate. The red curve is the MSTM simulation result for one $n_r = 1.80$ sphere (Diameter = 250nm) embedded in a medium with $n_r = 1.24$.

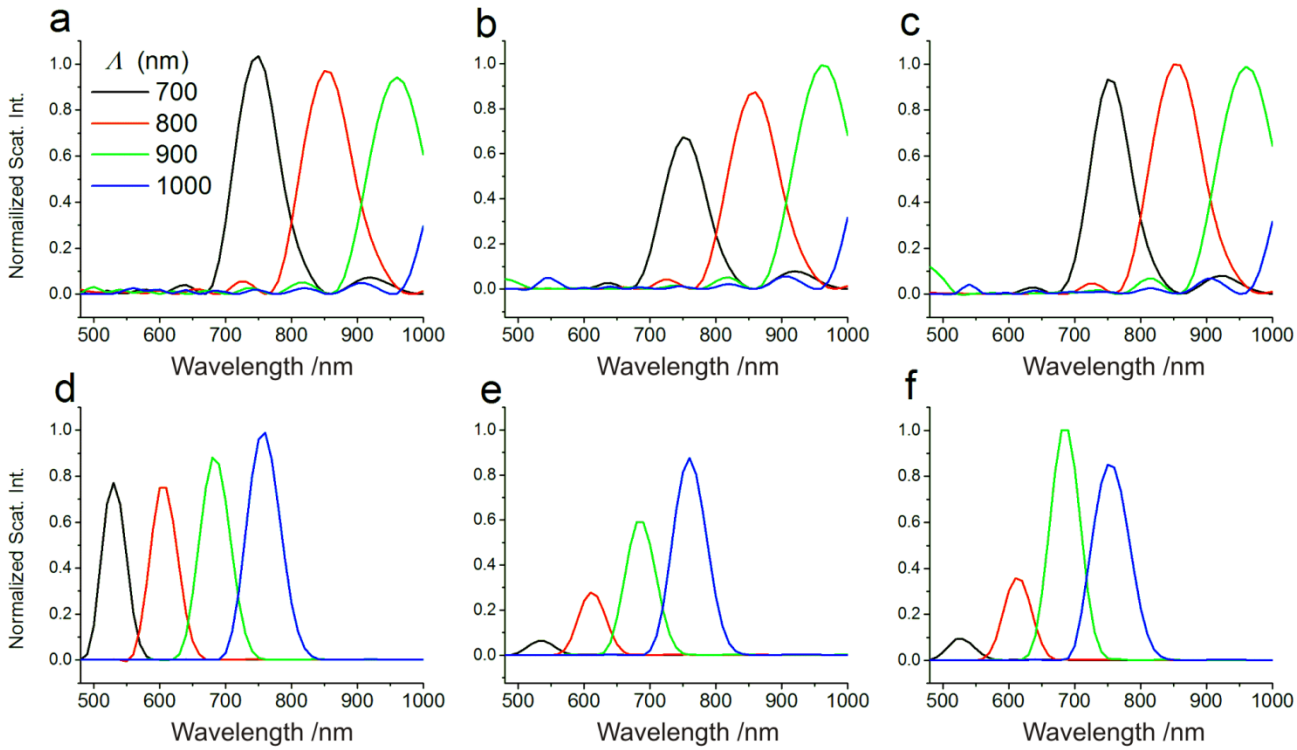

Figure S2: MSTM-simulated far-field scattering spectra of 8×8 arrays with $\theta^{det} = 0^{\circ}$ and $\varphi^{det} = 0^{\circ}$. (a),(d) Au NP cluster array (NCA). (b),(e) TiO_2 NP array. (c),(f) Optoplasmonic array. (a-c) were obtained for $\theta^{inc} = 60^{\circ}$ and $\varphi^{inc} = 0^{\circ}$ to simulate the (1,0) mode. (d-f) were obtained for $\theta^{inc} = 60$ and $\varphi^{inc} = 45^{\circ}$ to simulate the (1,1) mode.

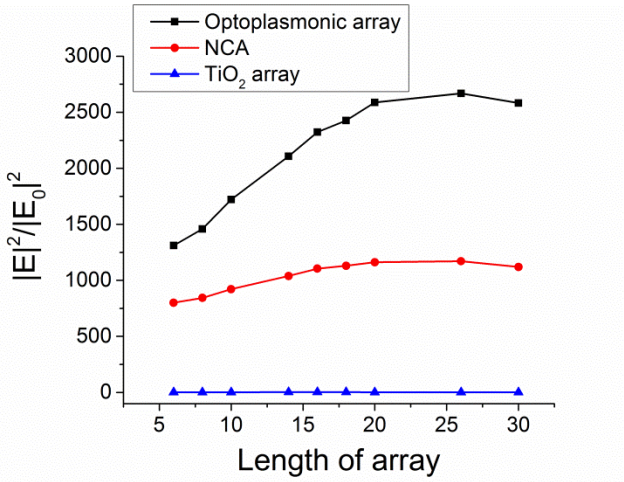

Figure S3: MSTM-simulated near field intensities of the hottest point as a function of the array length (number of binding sites along one axis) in an optoplasmonic array (black), 60 nm Au NP trimer NCA (red), and TiO_2 NP array (blue).