

## Supporting information

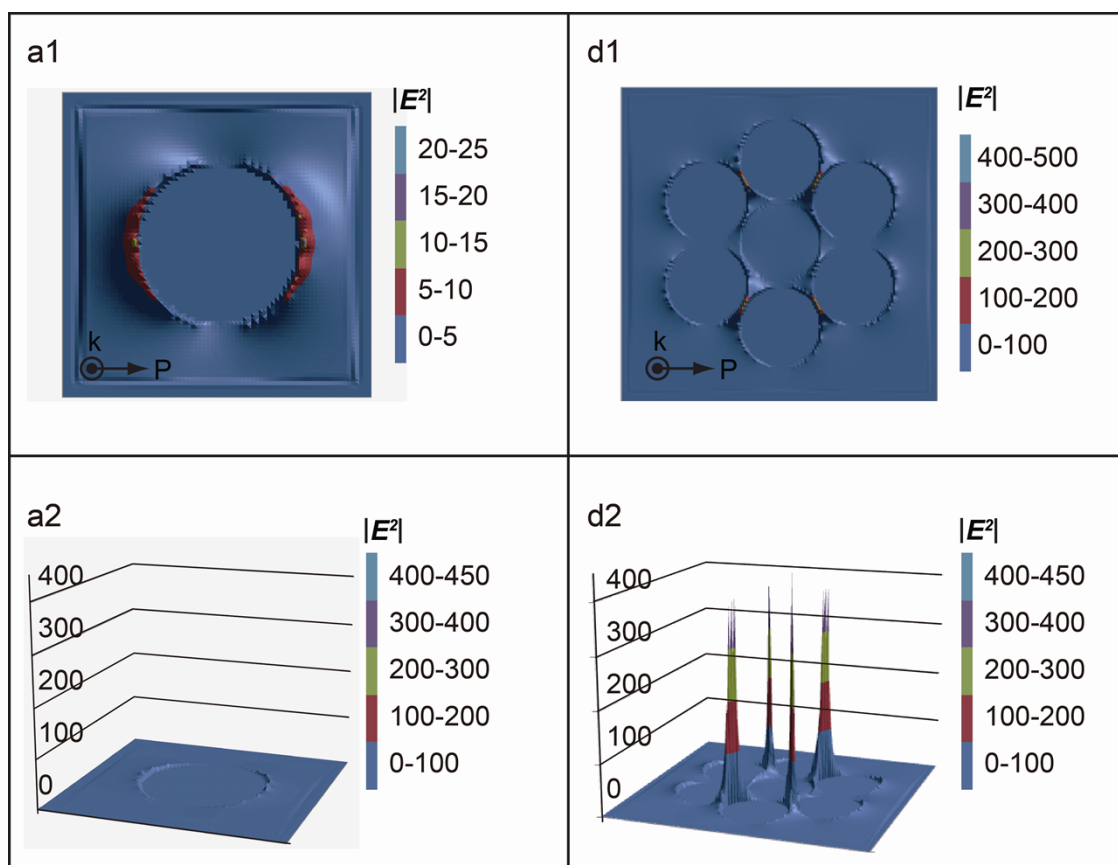


Fig.S1 Finite Difference Time Domain (FDTD) simulation of the local electric field around Au-SiO<sub>2</sub> hybrid NPs cluster consists of 6 AuNPs with gap of 1 nm using SiO<sub>2</sub> as the core. Scale bars = 20 nm. The excitation wavelength is 488 nm and incident electromagnetic wave along the z direction are polarized along the symmetry axis and perpendicular to it.

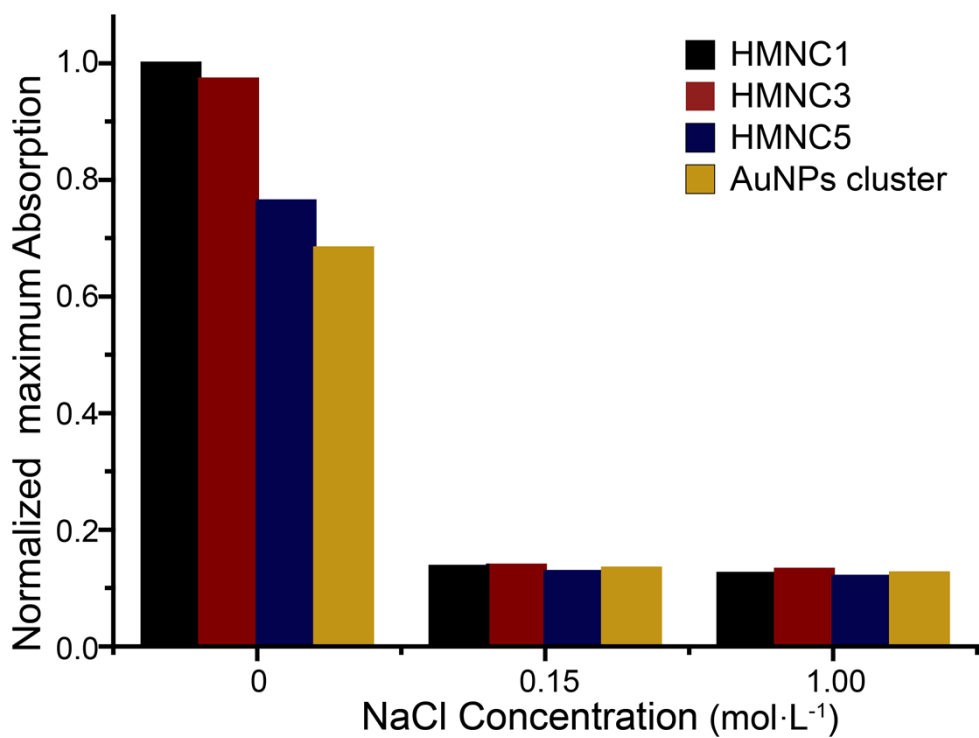


Fig.S2 Normalized maximum absorption of HMNC1, HMNC3, HMNC5 and AuNPs cluster in NaCl solutions of three different concentrations (0, 0.15, 1mol L<sup>-1</sup>) respectively.

Table S1 Distance-dependent MEF effect of fluorophore-dsDNA-HMNCs conjugates

Conjugates	Inter-distance (nm)	Enhancement Factor
F-B1A1-S-HMNC3	4	10.8
F-B1A2-S-HMNC3	Very near	1
F-D1C1-S-HMNC3	5	8
F-D2C1-S-HMNC3	3	2
F-D3C1-S-HMNC3	Very near	1