

Shape and Size Dependent Nonlinear Refraction and Absorption in Citrate-stabilized, Near-IR Plasmonic Silver Nanopyramids

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Supporting Information

Table S1. Nonlinear optical parameters of anisotropic silver nanocrystals.

Sample Name	SPR (nm)	Structure (TEM)	$n_2 \left(\frac{cm^2}{W}\right)^*$	$\beta \left(\frac{cm}{W}\right)^*$	$\chi_{re}^{(3)}(esu)$	$\chi_{img}^{(3)}(esu)$	$\chi^{(3)}(esu)$
Ag-550	550	Pentagonal plate (three sides of 25 nm each while two of them is 15 nm each)	$-3.164 \pm 0.226 \times 10^{-8}$	$2.609 \pm 0.188 \times 10^{-4}$	-1.43×10^{-6}	5.93648×10^{-10}	1.43×10^{-6}
Ag-700	700	Pentagonal pyramidal (edge length 15 nm)	$1.195 \pm 0.095 \times 10^{-8}$	$3.85 \pm 0.265 \times 10^{-4}$	5.4×10^{-7}	8.76024×10^{-10}	5.4×10^{-7}
Ag-800	800	Pentagonal pyramidal (edge length 18 nm)	$1.493 \pm 0.132 \times 10^{-8}$	$5.32 \pm 0.296 \times 10^{-4}$	6.746×10^{-7}	1.21051×10^{-9}	6.746×10^{-7}
Ag-900	900	pentagonal pyramidal (edge length 22 nm)	$1.702 \pm 0.153 \times 10^{-8}$	$8.52 \pm 0.335 \times 10^{-4}$	7.691×10^{-7}	1.93863×10^{-9}	7.691×10^{-7}
Ag-1015	1015	pentagonal pyramidal (edge length 30 nm)	$3.124 \pm 0.284 \times 10^{-8}$	$6.089 \pm 0.321 \times 10^{-4}$	1.412×10^{-6}	1.38548×10^{-9}	1.412×10^{-6}

*Each data point is a mean of three measurements

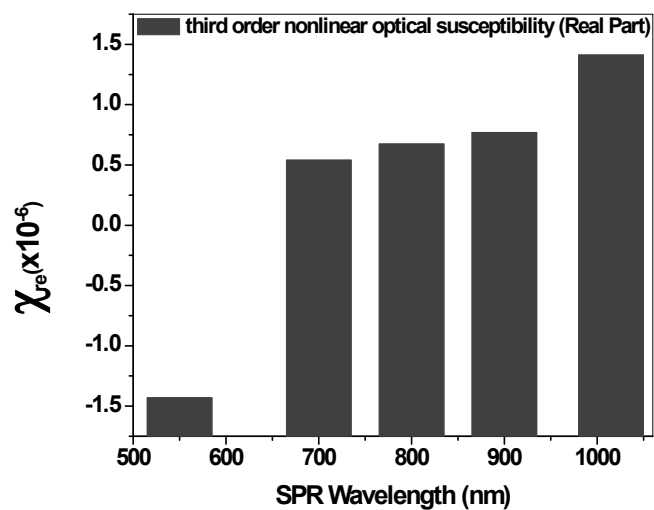


Fig S1. Change in real part of third order nonlinear optical susceptibility with surface plasmon of anisotropic silver nanocrystals.

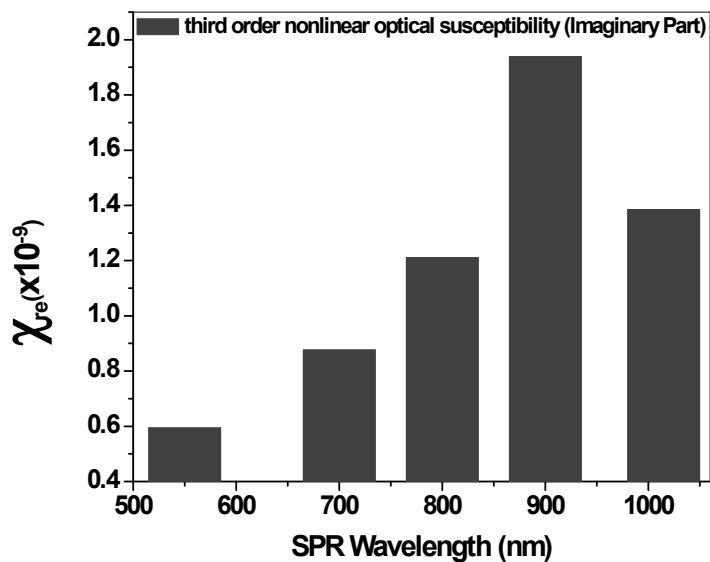


Fig S2. Change in imaginary part of third order nonlinear optical susceptibility with surface plasmon of anisotropic silver nanocrystals.

