Supporting Information for

"Amplification of Molecular Chiroptical Effect by Low-loss Dielectric Nanoantennas"

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1. Sizes effect for the surface-enhanced CD spectral using dimer NSs.

It is worth noting that sizes used for the dimer Au and Si NSs in the main text are not optimal to enhance the molecular CD signals. Here, we will investigate the CD effect induced by dimer Au and Si NSs with different radii. The separation distance between two NSs is always equals to d=5 nm. We found that Si NS dimers with different radius can always induce a larger CD signal with lower photothermal conversion than Au counterparts. In Fig. S1a, we plot the CD signals induced by dimer Au NSs with the corresponding radii being 10nm (black line), 20nm (red line), 30nm (blue line), 40nm (green line), 50nm (pink line) and 65nm (yellow line). It is clearly shown that the optimized radius for the dimer Au NSs with maximum CD signal nearly equals to R=30 nm. Similarly, Fig. S1b presents the CD signals induced by dimer Si NSs with the corresponding radii being 10nm (black line), 20nm (red line), 40nm (green line), 50nm (pink line). We found that the optimized radius for the dimer Au NSs with the corresponding radii being 10nm (black line), 20nm (red line), 40nm (green line), 50nm (pink line), 20nm (red line), 40nm (green line), 50nm (pink line), 20nm (red line), 20nm (red line), 40nm (green line), 50nm (pink line) and 65nm (yellow line). We found that the optimized radius for the dimer Si NSs with maximum CD signal also equals to

R=30 nm and the corresponding CD peak is nearly three times larger than the Au-based CD signal. However, in this condition, the optical absorption is more tremendous and will result in a more significant temperature increment. As shown in Fig. S1(c), we plots the temperature increments at wavelengths with maximum CD signals around Si (black dot line) and Au (red dot line) nanodimers (original point) with different radius.



Fig. S1 (a) and (b) plot CD signals induced by Au and Si NS dimers with the corresponding radii being 10nm (black line), 20nm (red line), 30nm (blue line), 40nm (green line), 50nm (pink line) and 65nm (yellow line), respectively. (c) Temperature increments at wavelengths with maximum CD signals around Si (black dot line) and Au (red dot line) nanodimers (original point) with different radius.