

## Supporting Information

### Nano-Analysis of DNA Conformation Changes Induced by Transcription Factor Complex Binding Using Plasmonic Nanodimers

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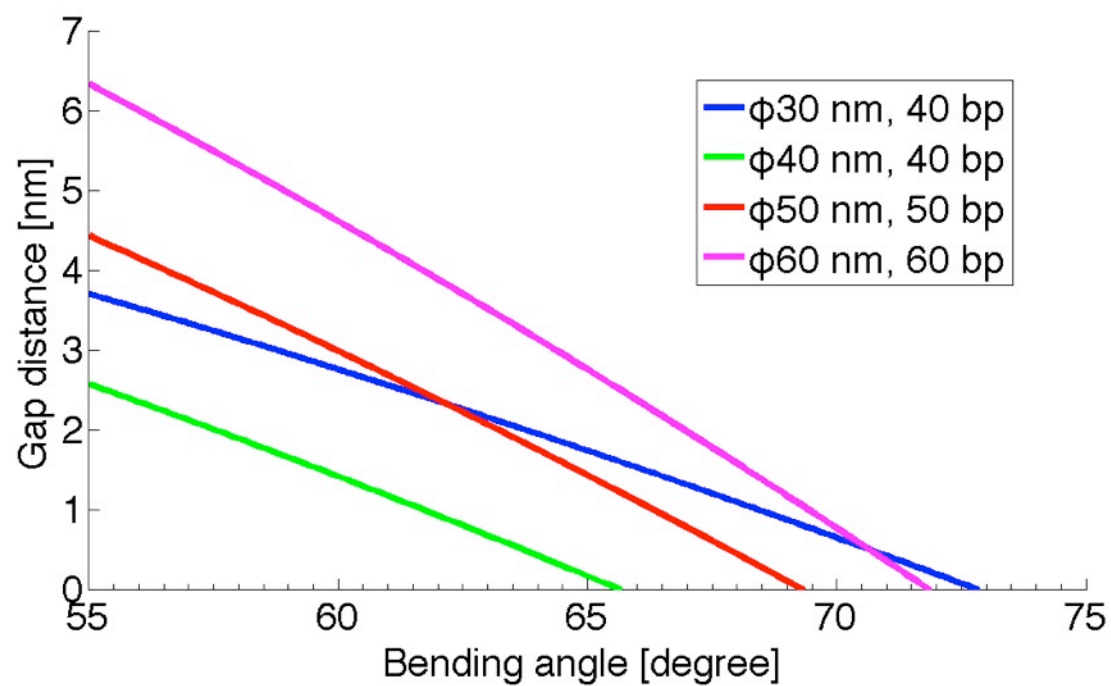


Figure S1. Gap distance of the gold nanodimer versus bending angle caused by SOX2 binding. Gap distance refers to the surface-to-surface distance between two gold nanoparticles covered with thymidine heptamer (3.3 nm long).

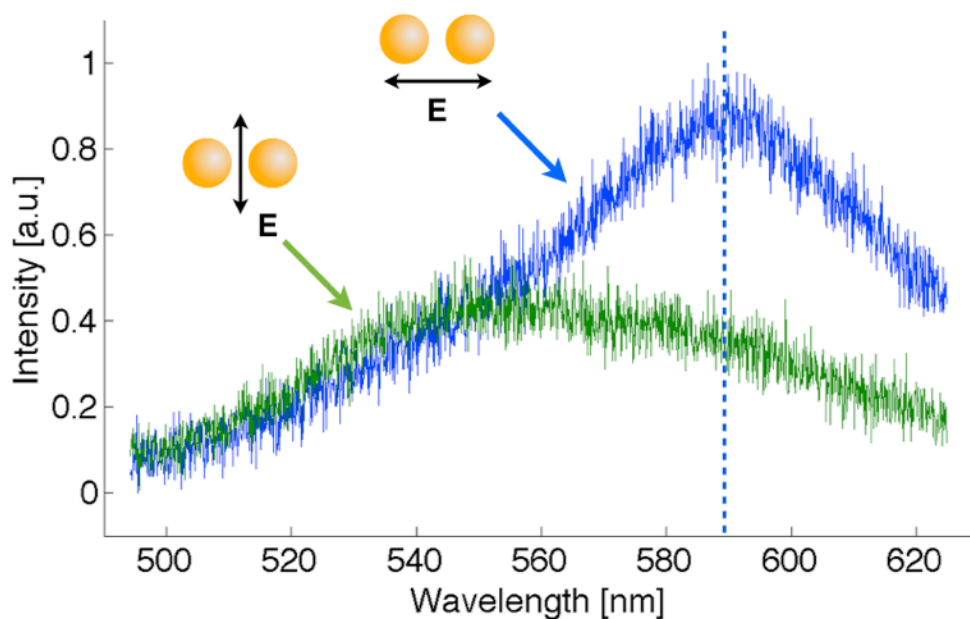


Figure S2. Typical scattering spectra of a gold nanodimer of 50 nm diameter and DNA bridge of 50 bp. Blue and green lines show the spectra when the polarizer was set parallel and perpendicular to the dimer axis, respectively. The plasmon resonant wavelength (588.6 nm) was determined by Lorentzian fitting of the blue spectrum.

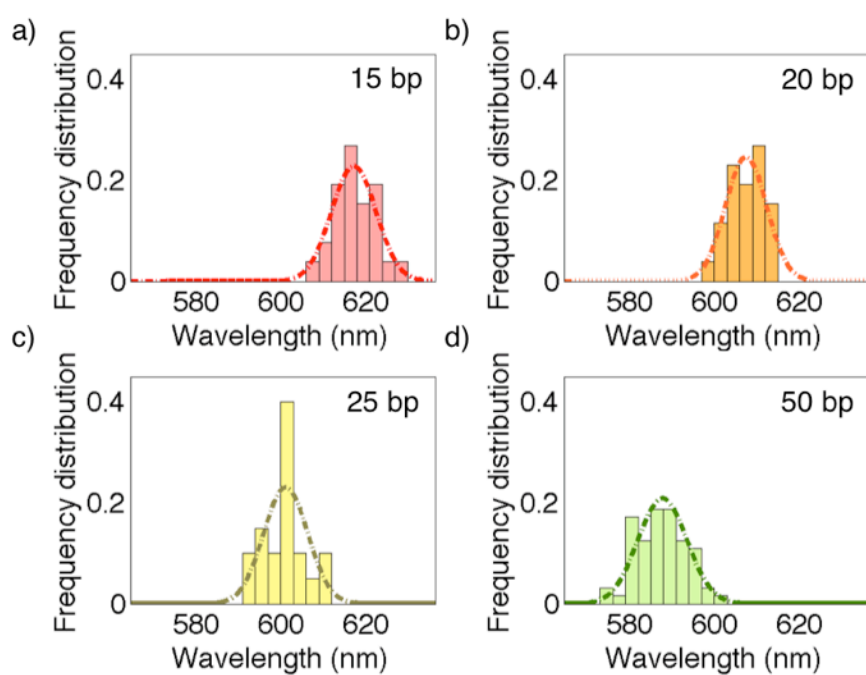


Figure S3. Frequency distributions of the plasmon resonant wavelengths for gold nanodimers with DNA bridge lengths of a) 15 bp, b) 20 bp, c) 25 bp and d) 50 bp.

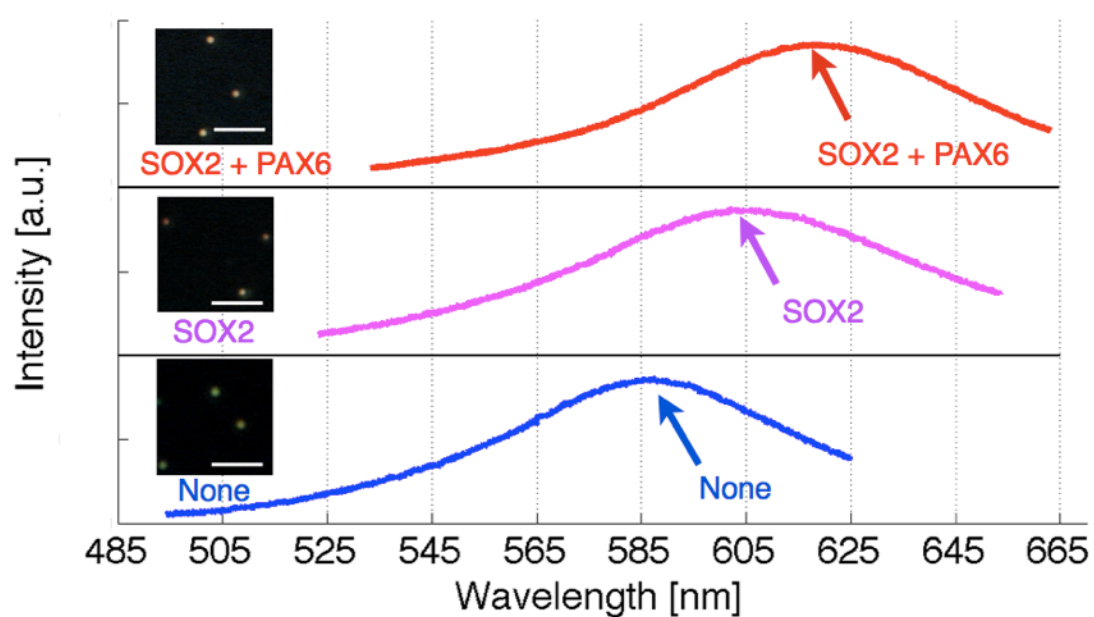


Figure S4. Averaged and normalized scattering spectra of gold nanodimers bridged by a DC5 DNA sequence in the presence of no transcription factor, SOX2 and SOX2 + PAX6. Insets are typical dark field images of the gold nanodimers. White bars, 5  $\mu\text{m}$ .

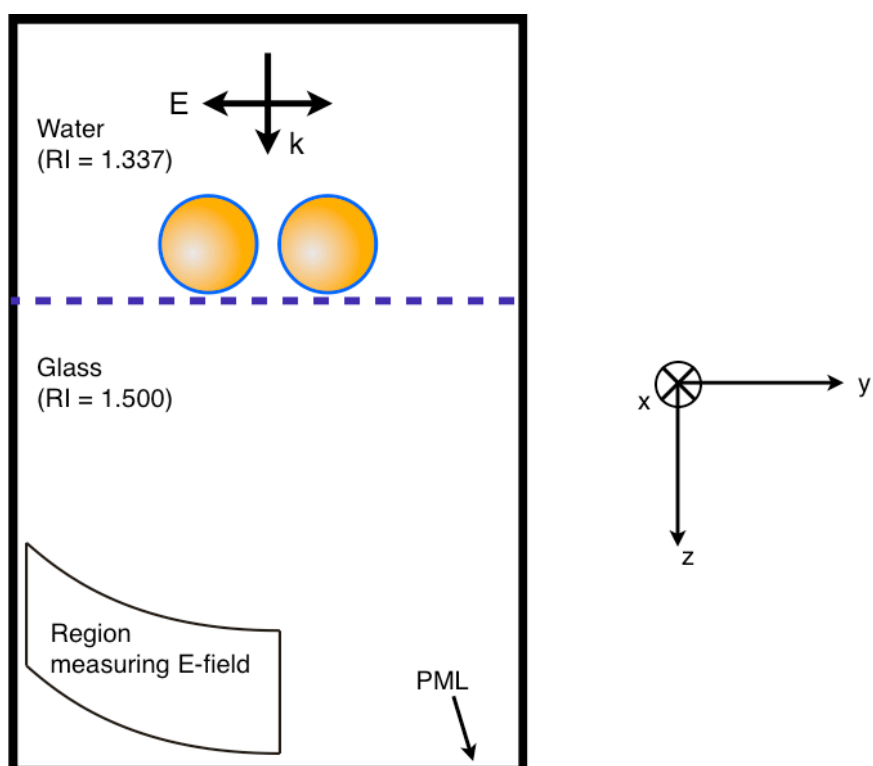


Figure S5. Y-Z section of the geometric model for FDTD numerical analysis. The calculation area is compartmentalized by a perfectly matched layer (PML). The two spheres represent gold NPs covered with a dielectric layer. The broken line shows the border between two regions of different refractive indices.

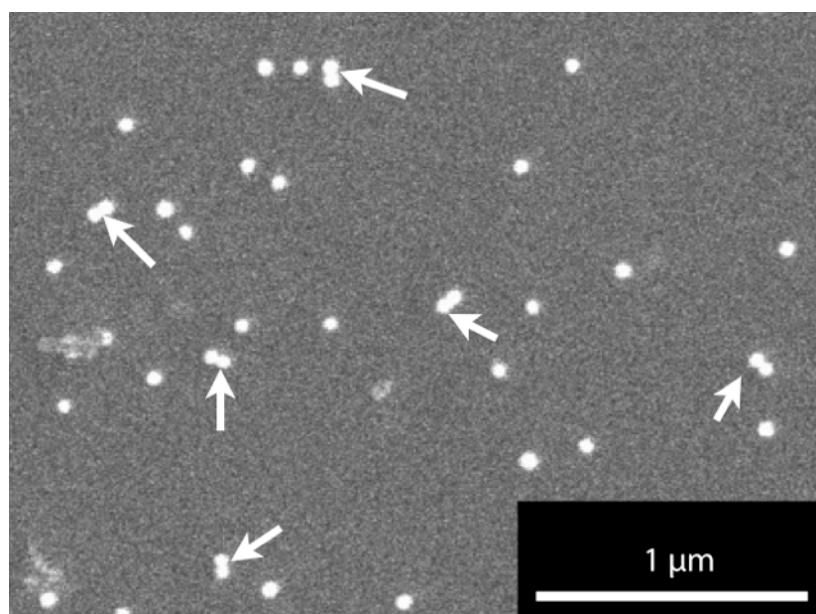


Figure S6. SEM images of gold nanodimers indicated by the white arrows. The yield of gold nanodimers is about 20%.