

## **Supporting Information**

### **Unleashing Plasmonic Hot Carriers in a Matchstick-Shaped Heterostructure**

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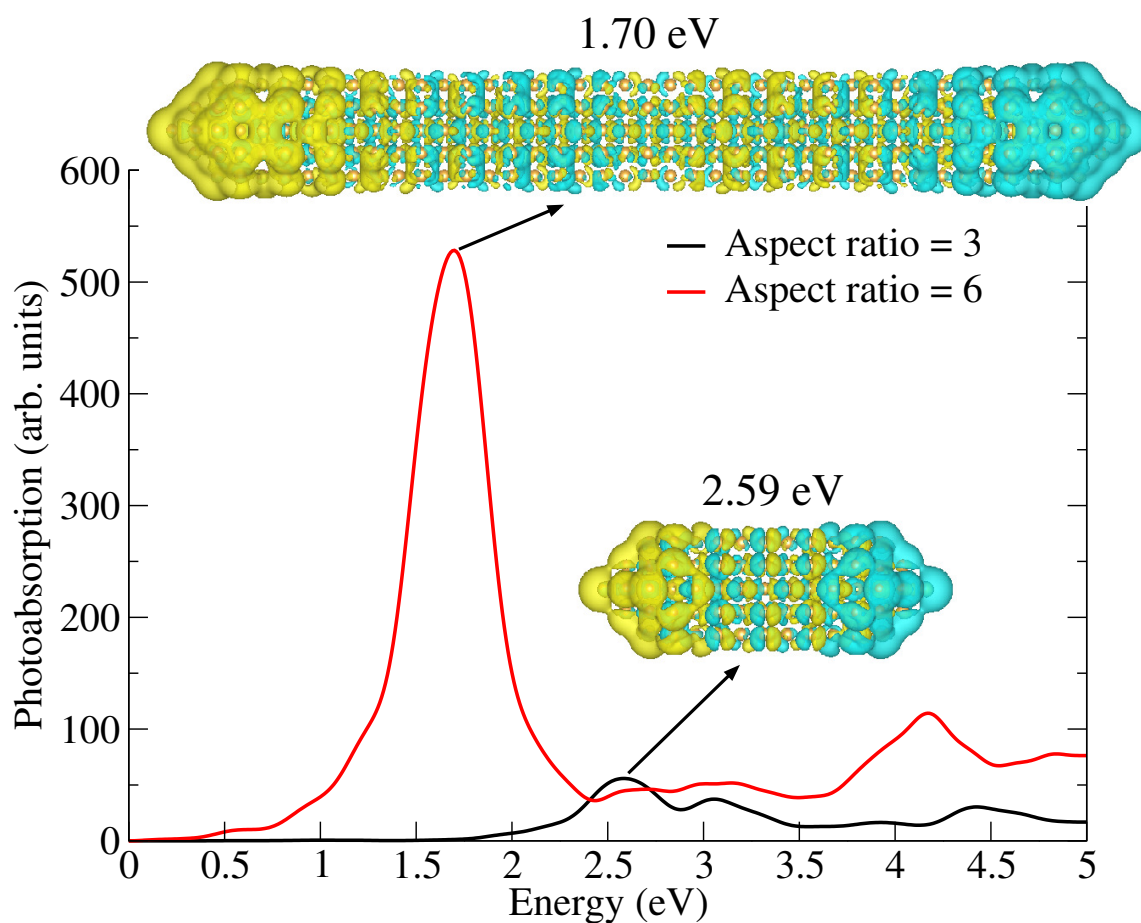


Figure S1: Photoabsorption spectra of Au NRs with aspect ratios of 3 (black curve) and 6 (red curve), calculated using RT-TDDFT. The results show a clear red-shift and intensity enhancement of the LSP with increasing aspect ratio. Insets display the induced electron density iso-surfaces at the respective resonance energies (2.59 eV for aspect ratio 3 and  $\sim 1.70$  eV for aspect ratio 6), illustrating the dipolar plasmon modes along the longitudinal axis of the NRs.