

Supporting Information

Propagation loss spectroscopy on single nanowire active waveguides

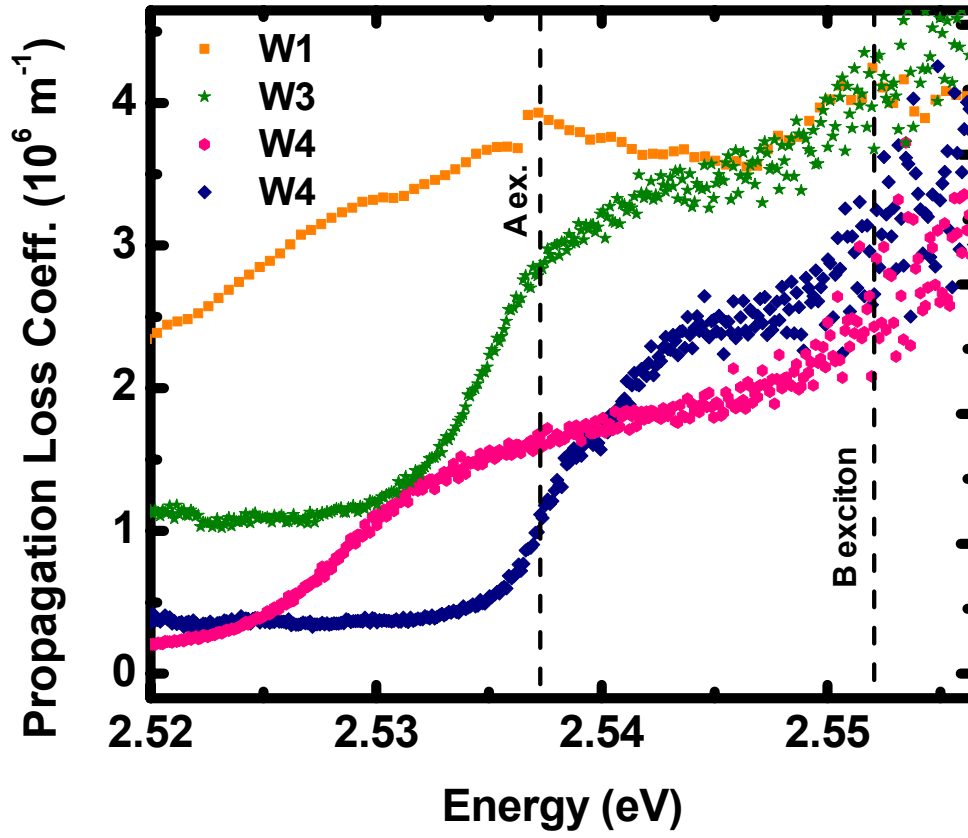
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Nanowire synthesis. CdS nanowires were synthesized in a quartz tube furnace using evaporation of 99.995% pure CdS powder (Aldrich). 130 mg of CdS powder was placed in a quartz boat in the middle of the tube, and Si substrates covered by a 5 nm thick Au/Pd layer using plasma sputter deposition were placed 13.7 cm downstream (referenced to the middle of the tube). The tube was evacuated to 20 mTorr and argon carrier gas was introduced at a flow of 100 SCCM to reach a stable pressure of 294 Torr. The tube was rapidly heated to 760 °C and kept there for 180 minutes after which the furnace was cooled by a forced airflow.



Supporting Figure 1. Propagation loss spectra of Wires 1-5 at 77.6 K, ordered according to propagation loss coefficient at 2.525 eV. Vertical lines are placed at the A- and B-free exciton resonances as determined for the nanowire discussed in Figure 4 (see main text).

Wire	1	2	3	4
Diameter (nm)	260	425	185	220
Length (μm)	8.96	17.65	8.30	9.15
Prop. loss coeff. at 2.525 eV (10^6 m^{-1})	2.79	1.05	0.42	0.34

Supporting Table 1. Diameter, length, and propagation loss coefficients at 2.525 eV.