

Supporting Information

Type-Tunable Amplified Spontaneous Emission from Core-Seeded CdSe/CdS Nanorods Controlled by Exciton-Exciton Interaction

Yusuf Kelestemur,^{‡,a} Ahmet Fatih Cihan,^{§,‡,a} Burak Guzelturk^a and Hilmi Volkan Demir^{*,a,b}

*^aDepartment of Physics, Department of Electrical and Electronics Engineering,
UNAM – Institute of Materials Science and Nanotechnology, Bilkent University,
TR-06800, Ankara, Turkey*

*^bLuminous! Center of Excellence for Semiconductor Lighting and Displays, School of
Electrical and Electronic Engineering, School of Physical and Mathematical Sciences,
Nanyang Technological University, Nanyang Avenue, Singapore 639798, Singapore
E-mail: volkan@stanfordalumni.org*

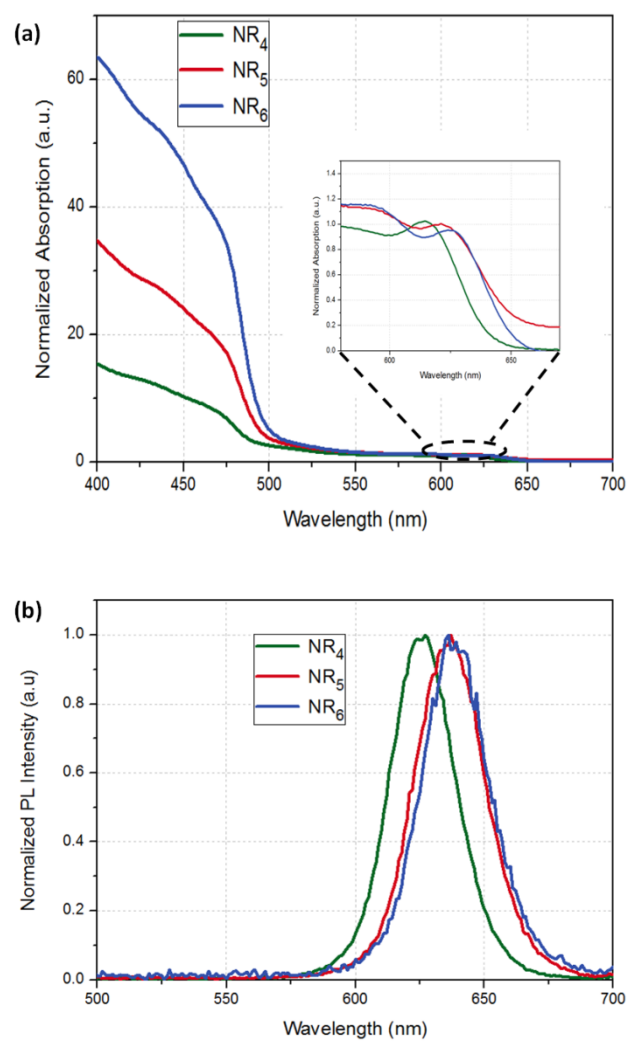


Figure S1. (a) Absorption and (b) photoluminescence spectra of CdSe/CdS core/shell NRs with varied core sizes and rod lengths.

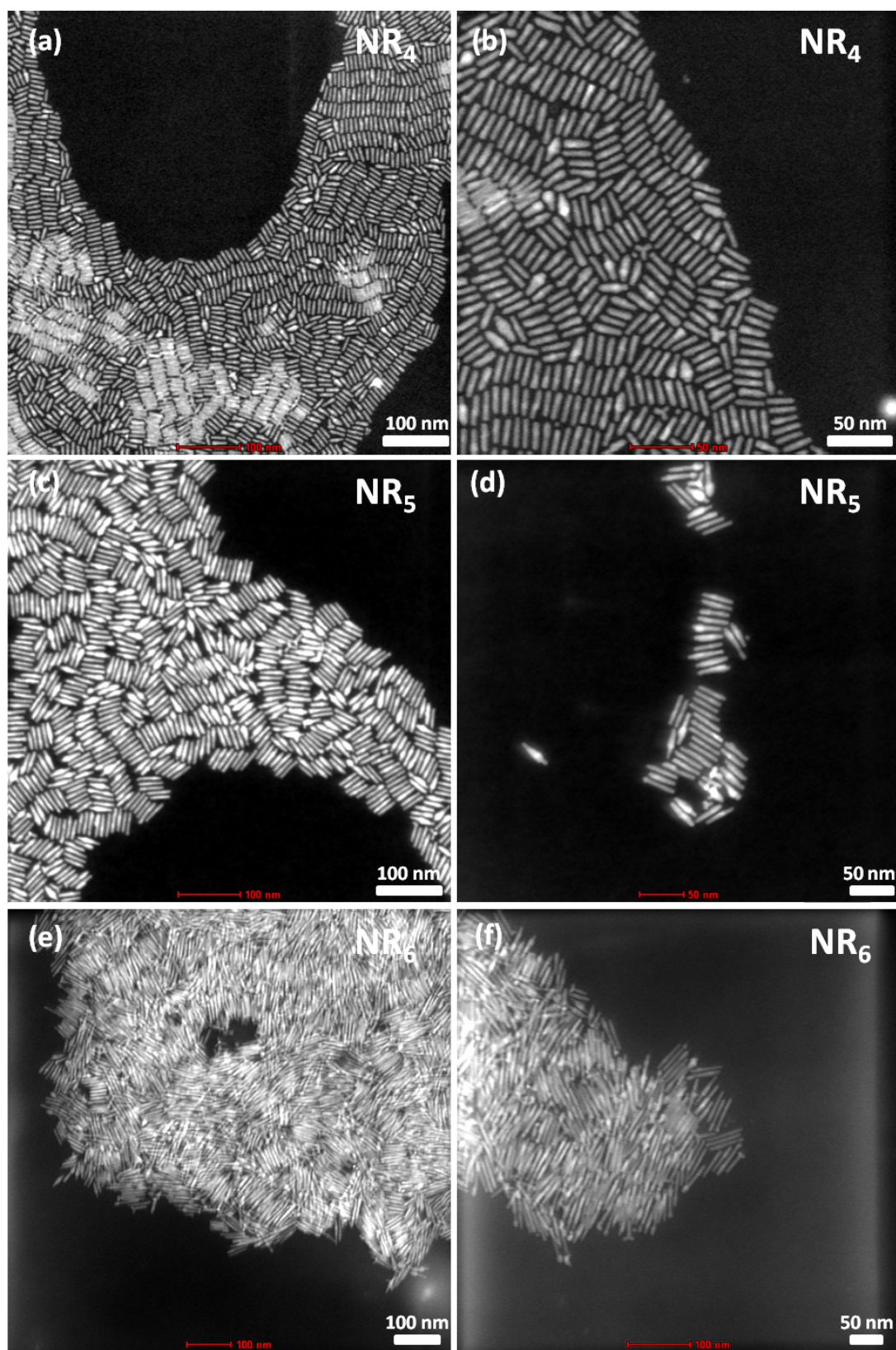


Figure S2. High-angle annular dark-field transmission electron microscopy (HAADF-TEM) images of the (a) NR₄, (c) NR₅ and (e) NR₆ with a scale bar of 100 nm and (b) NR₄, (d) NR₅ and (f) NR₆ with a scale bar of 50 nm.

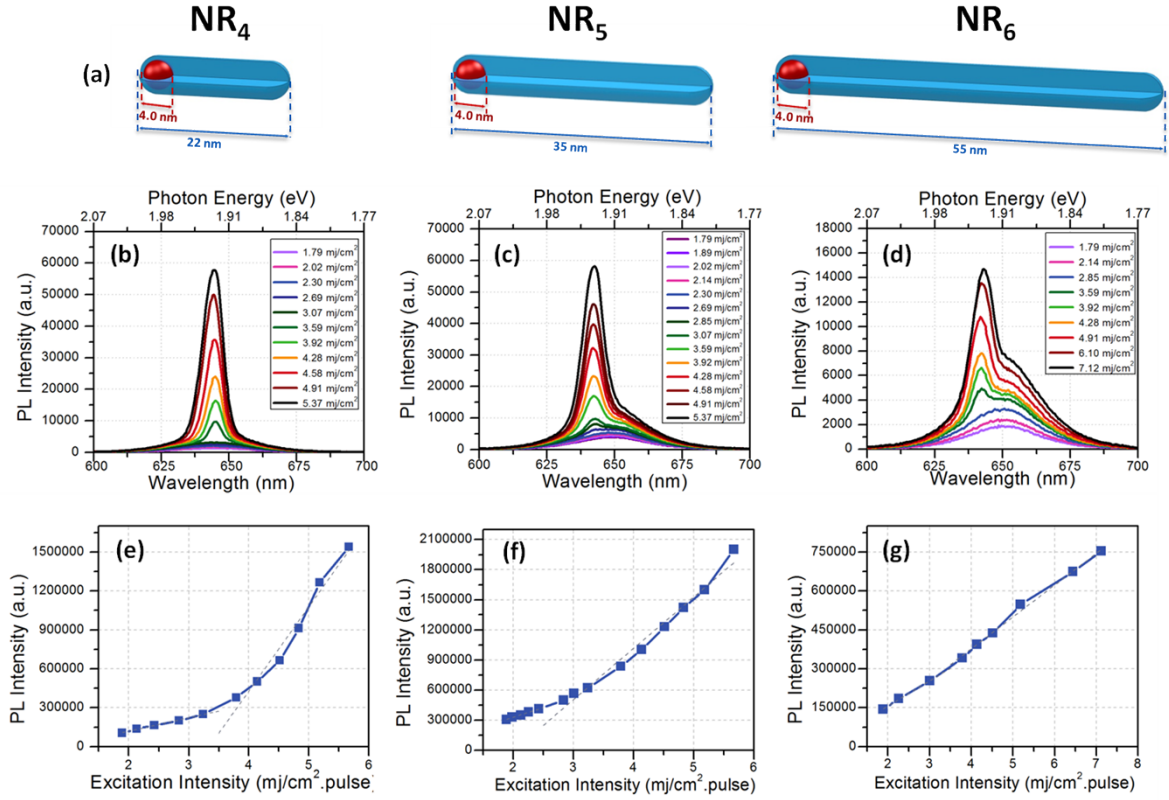


Figure S3. (a) Schematic illustration of CdSe/CdS core/shell NRs proportional to their size. (b), (c), (d) Excitation intensity dependent emission spectra of NR₄ (with red-shifted ASE peak), NR₅ (with blue-shifted ASE peak), and NR₆ (with blue-shifted ASE peak), respectively. (e), (f), (g) Excitation pulse intensity dependences of emissions at the ASE peak positions of NR₄, NR₅, and NR₆, respectively.

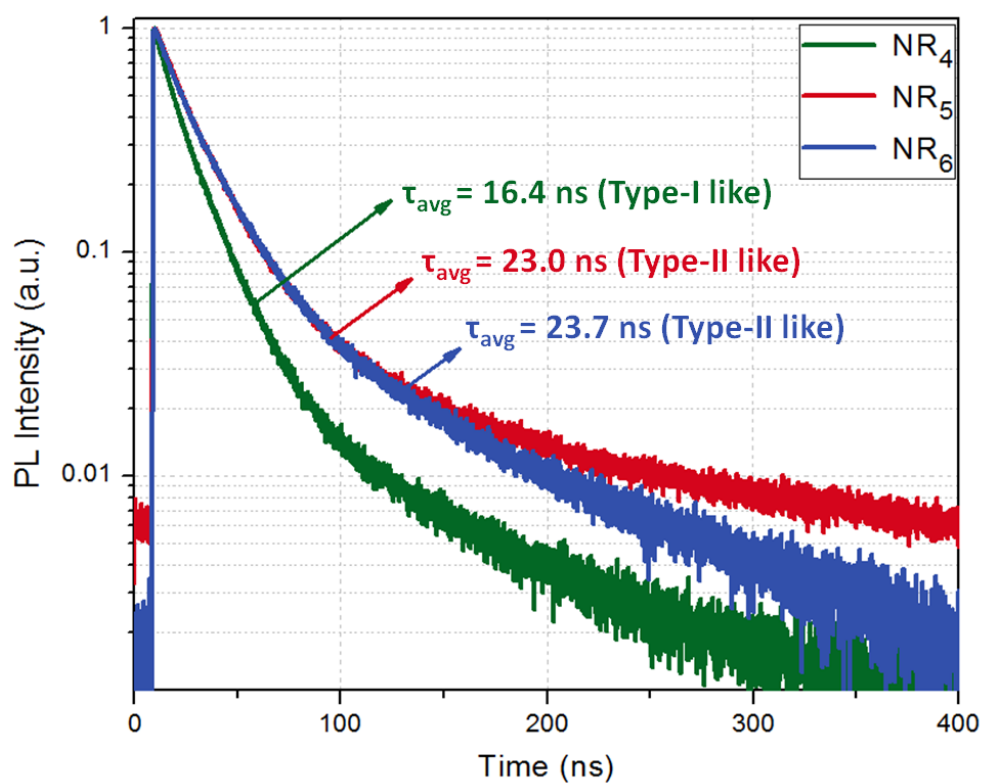


Figure S4. TRF decay curves of the NRs together with average least chi-square fitting lifetimes.