Supplementary Information

Temperature-Dependent Photoluminescence of CdS/ZnS Core/Shell Quantum Dots for Temperature Sensors

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Figure S1. Temperature-dependent band-edge emission (BEE) peak energy, BEE full width at half-maximum (FWHM) and BEE intensity of CdS/ZnS QDs, and corresponding linear fitting relation curve.

Table S1. Comparison of previously reported semiconductor quantum dots (QDs)-based temperature sensors.

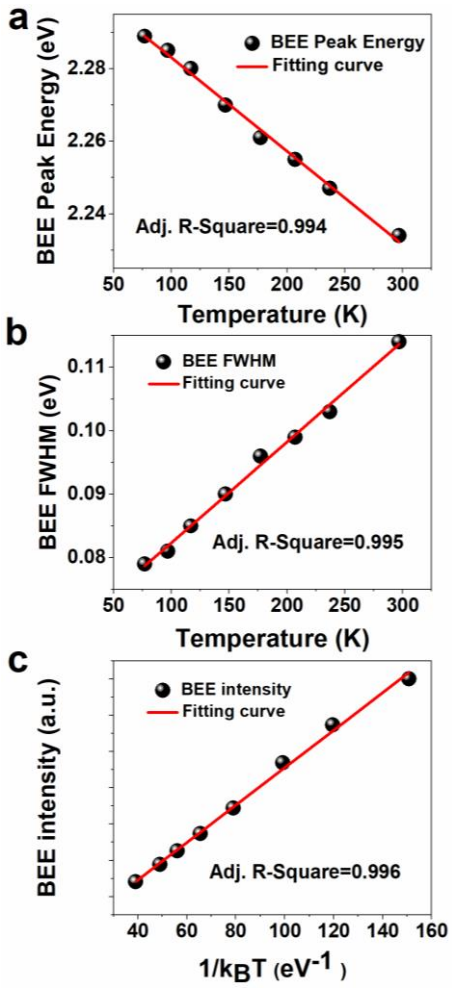

Figure S1. Temperature-dependent BEE peak energy (a) and BEE FWHM (b) of CdS/ZnS core/shell QDs in a temperature range of 77–297 K, respectively. (c) BEE intensity of CdS/ZnS core/shell QDs as a function of inverse k_BT in a temperature range of 77–297 K.

Table S1. Comparison of previously reported semiconductor quantum dots (QDs)-based temperature sensors.

Sensing materials	Sensitivity (% K^{-1})	Temperature range (K)	Ref.
CdS/ZnS	2.14	77−297	In this work
Mn^{2+}-doped CdS-ZnS QDs	0.5	77−320	[1]
CdSe/ZnS QDs	1.3	100−315	[2]
CdSe QDs	0.69	82−280	[3]
PbS/CdS/CdSe QDs	1.22	180−300	[4]
PbS/CdS giant QDs	1.13	150−373	[5]
Mn^{2+}-doped ZnSe-ZnCdSe QDs	0.9	82−280	[6]
$CuInS_2$ QDs	1.0	140−340	[7]
$Zn_{1-x}Mn_xSe$/ZnS/CdS/ZnS QDs	0.7	373−673	[8]
CdTe QDs film	0.83	23−80	[9]
CdTe QDs solution	0.57	23−80	[9]
CdTe QDs-Layered Double Hydroxides ultrathin films	1.47	23−80	[9]
CdTe QDs@NaCl	0.61	80−360	[10]
CdHgTe QDs@NaCl	1.4	80−340	[11]

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