

Supporting Information

Table S1. Comparison of activation energies of p-type ZnSe doped by different dopants.

	Activation Energy (meV)	References
Our work	54.3	-
p-type ZnSe layers by using Li ₃ N as the p-type dopants	80	Applied Physics Letters 52, 1988, 57-59.
P-doped ZnSe Nanowires	97	Journal of Materials Chemistry, 2012, 22, 22873-22830.
As-doped ZnSe	-	
Sb-doped p-type ZnSe film	600	Journal of Crystal Growth 214/215 ,2000, 529-532
P-doped p-type ZnSe epitaxial layer	85 ± 1	PHYSICAL REVIEW B 61, 2000,15789-15796.