Figure S1. Volume changes of $\text{LiO}_6$, $\text{ScO}_6$, $\text{GeO}_4$. 
Figure S2. PL maximum intensity of LiScGeO$_{4-x}$Cr ($x=0.001-0.03$).
Figure S3. Relationship between log (I / x) and log x.
Figure S4. PL and PLE spectra of LiScGeO$_4$:0.007Cr at 10K.
Figure S5. (a) Gaussian fitting of the emission spectrum; (b) Monitoring the decay curves at 1060nm and 1200nm respectively.