

Supporting Information

Table S1 The Dq/B of $\text{LZ}_x\text{S}_{1-x}\text{GO}:0.015\text{Cr}^{3+}$ ($\lambda_{\text{em}}=740$ nm).

x	${}^4\text{A}_2-{}^4\text{T}_2({}^4\text{F}) \lambda_1(\text{nm})$	${}^4\text{A}_2-{}^4\text{T}_1({}^4\text{F}) \lambda_2(\text{nm})$	Dq/B
0.05	430	599	2.5590
0.10	430	597	2.5993
0.15	430	596	2.6198
0.25	430	594	2.6614

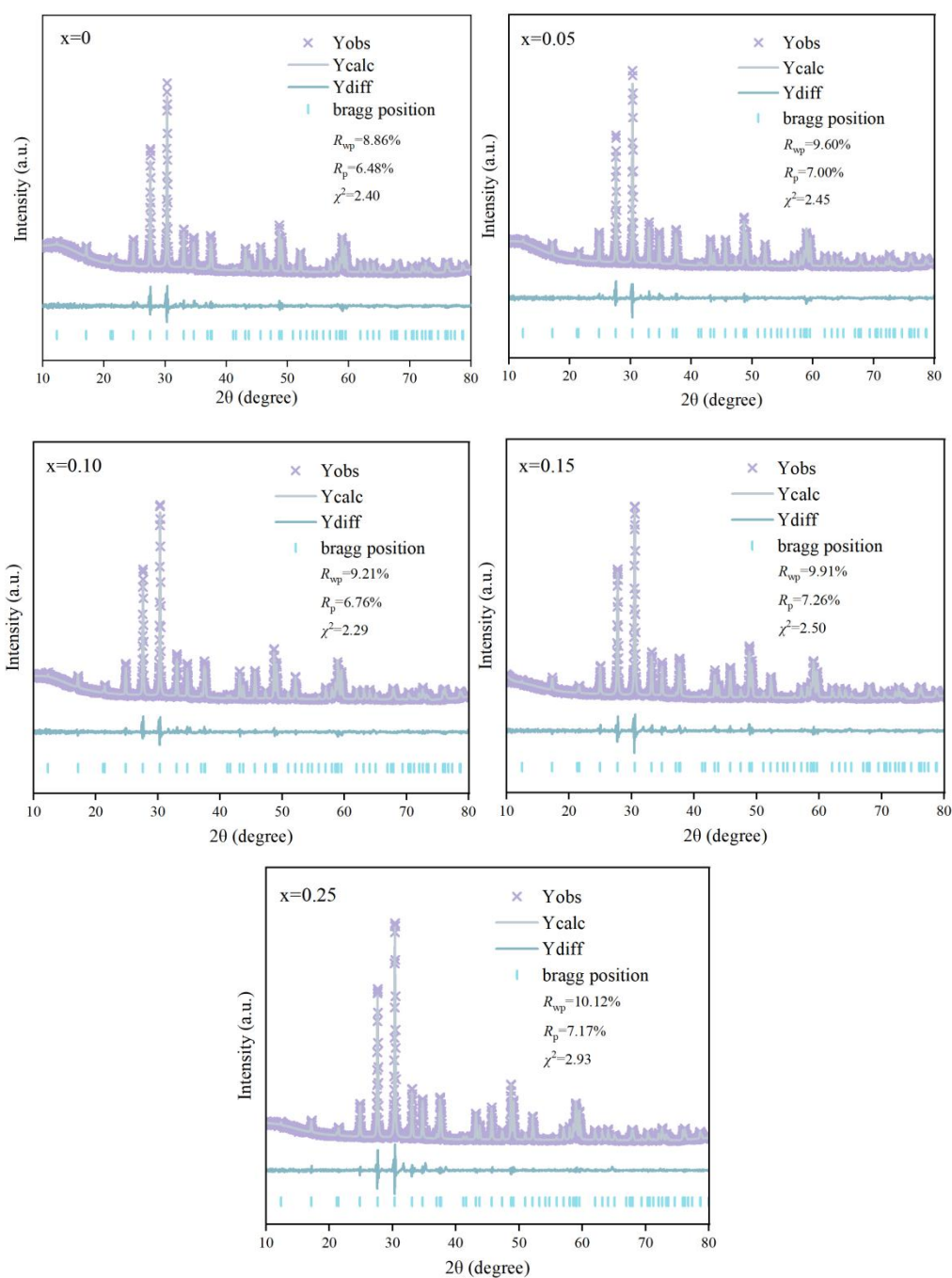


Figure S1 Rietveld refinements of $\text{LZ}_x\text{S}_{1-x}\text{GO}:0.015\text{Cr}^{3+}$.

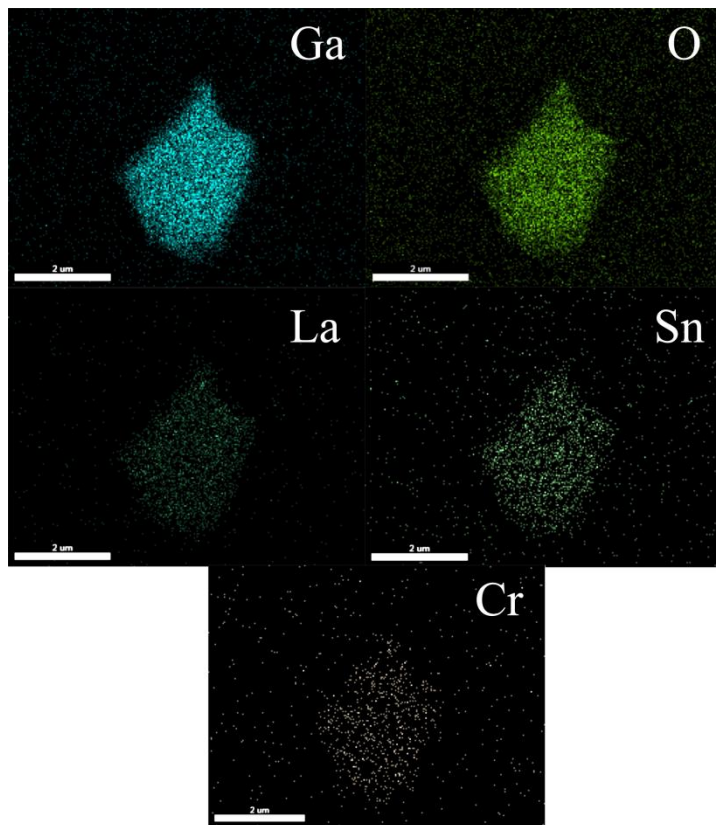


Figure S2 EDS images of other elements.

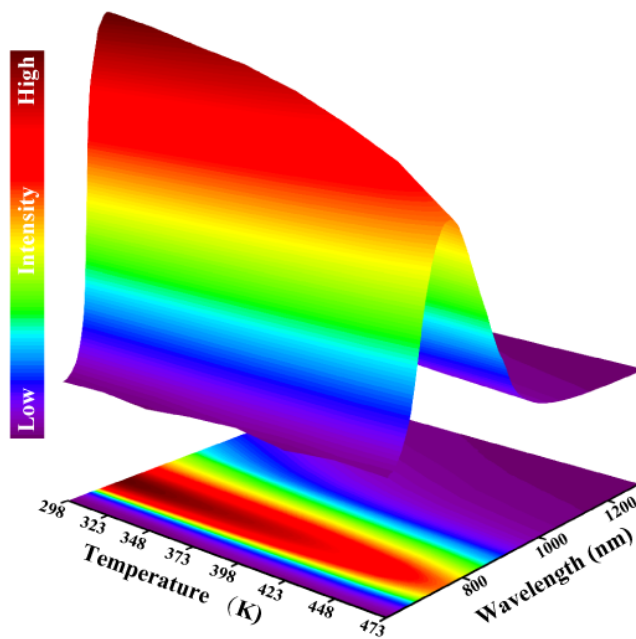


Figure S3 Temperature change spectra of $\text{La}_3\text{Zr}_{0.15}\text{Sn}_{0.85}\text{Ga}_5\text{O}_{14}:0.015\text{Cr}^{3+}$ at 298-473 K.

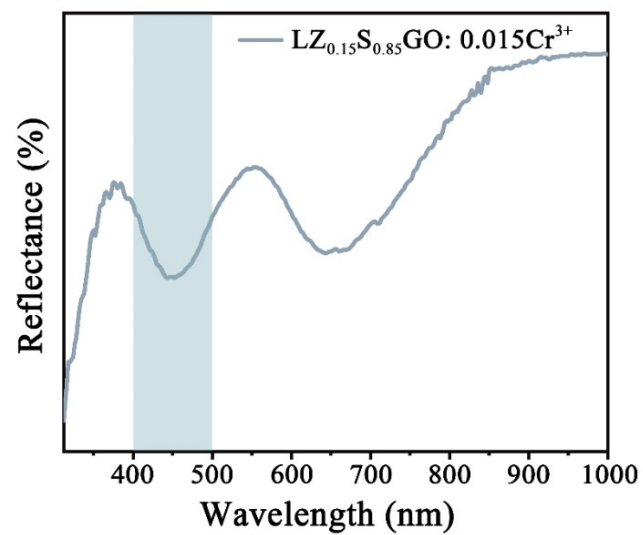


Figure S4 Diffuse reflection spectrum of $\text{La}_3\text{Zr}_{0.15}\text{Sn}_{0.85}\text{Ga}_5\text{O}_{14}:0.015\text{Cr}^{3+}$.