

Supplementary Information:

Sc_{1-x}Er_xAlO₃ perovskites: High-pressure synthesis, photoluminescence properties, and in-vitro bioimaging

Debendra Prasad Panda,^a Akash Kumar Singh,^b Tapas K. Kundu,^b and A. Sundaresan^{a*}

^a School of Advanced Materials and Chemistry and Physics of Materials Unit, Jawaharlal Nehru Centre for Advanced Scientific Research, Jakkur, Bangalore 560064, India.

^b Transcription and Disease Laboratory, Molecular Biology and Genetics Unit, Jawaharlal Nehru Centre for Advanced Scientific Research, Jakkur, Bangalore 560064, India.

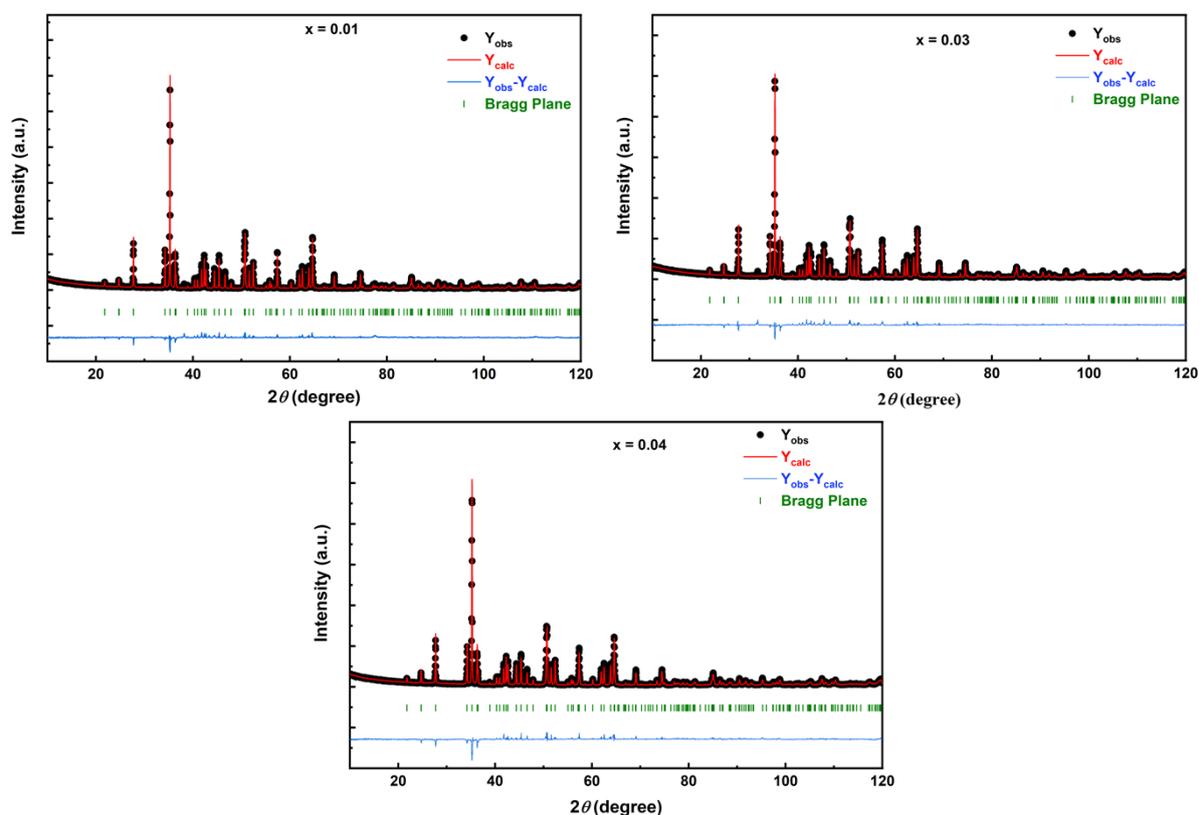


Fig. S1. The Rietveld refinement of Sc_{1-x}Er_xAlO₃ (x = 0.01, 0.03, and 0.04) perovskite compounds.

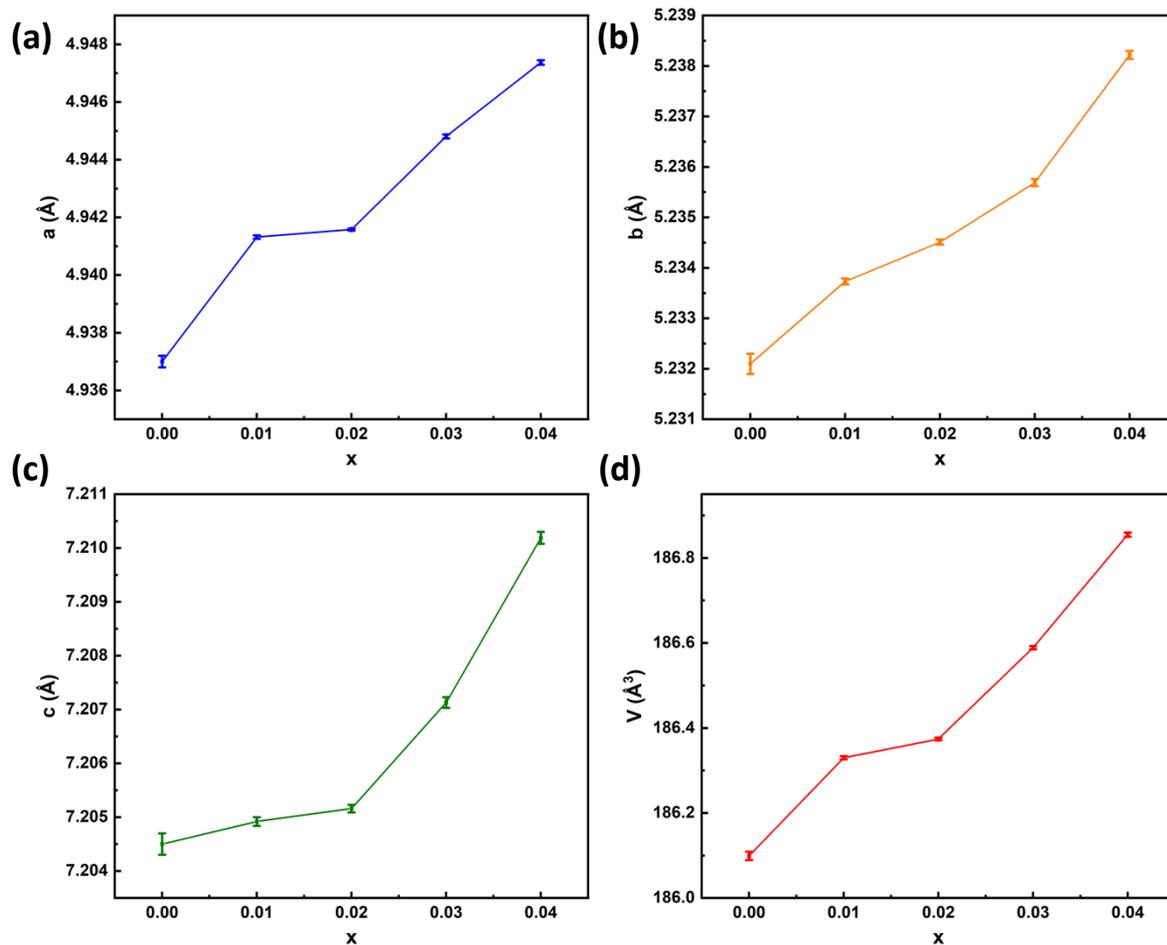


Fig. S2. Variation of cell parameters and unit cell volume with increasing the Er^{3+} substitution (x) in ScAlO_3 .

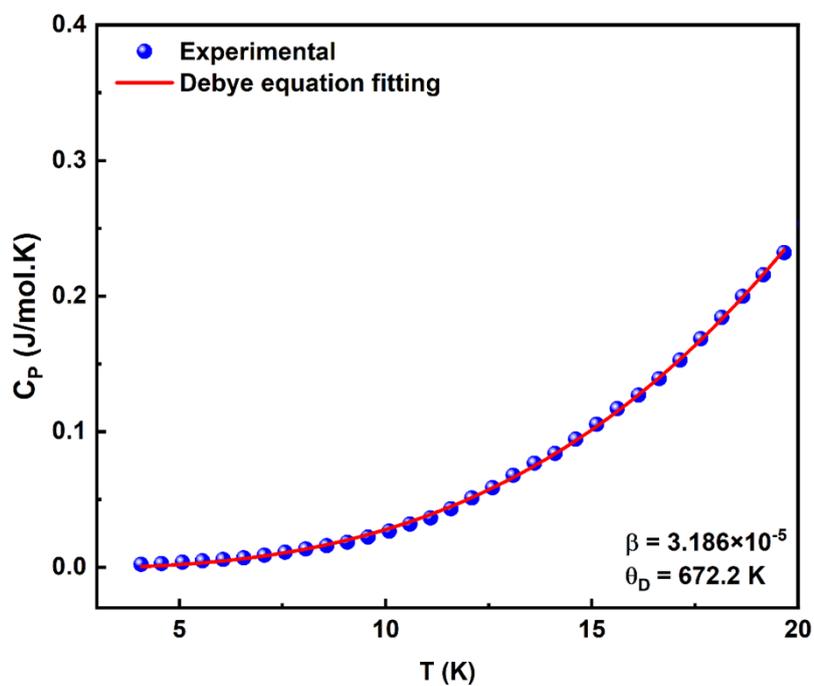


Fig. S3. The temperature-dependent specific heat capacity of $\text{Sc}_{0.98}\text{Er}_{0.02}\text{AlO}_3$ fitted with Debye equation.

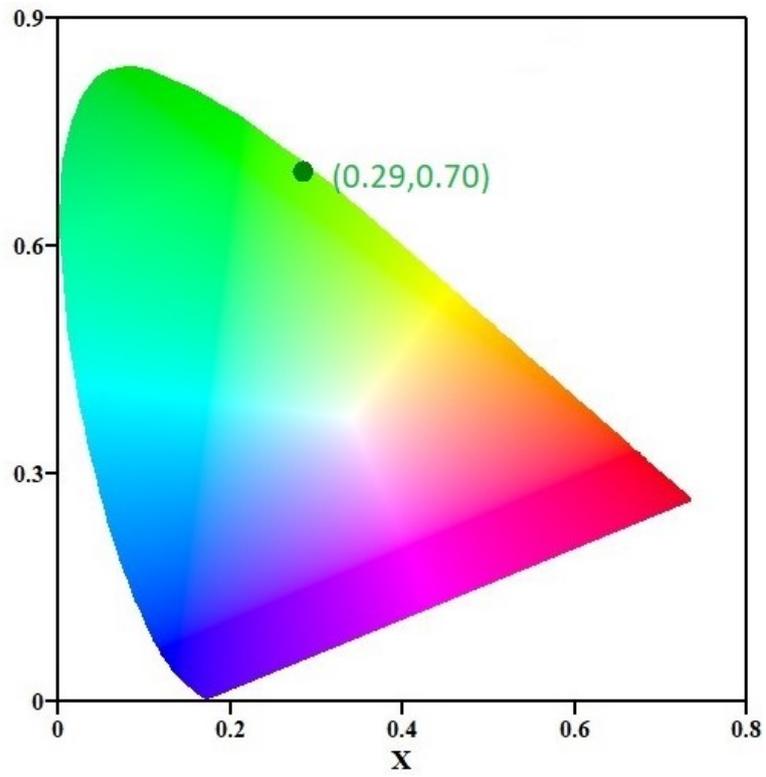


Fig. S4. The CIE chromaticity diagram for $\text{Sc}_{0.98}\text{Er}_{0.02}\text{AlO}_3$ compound.

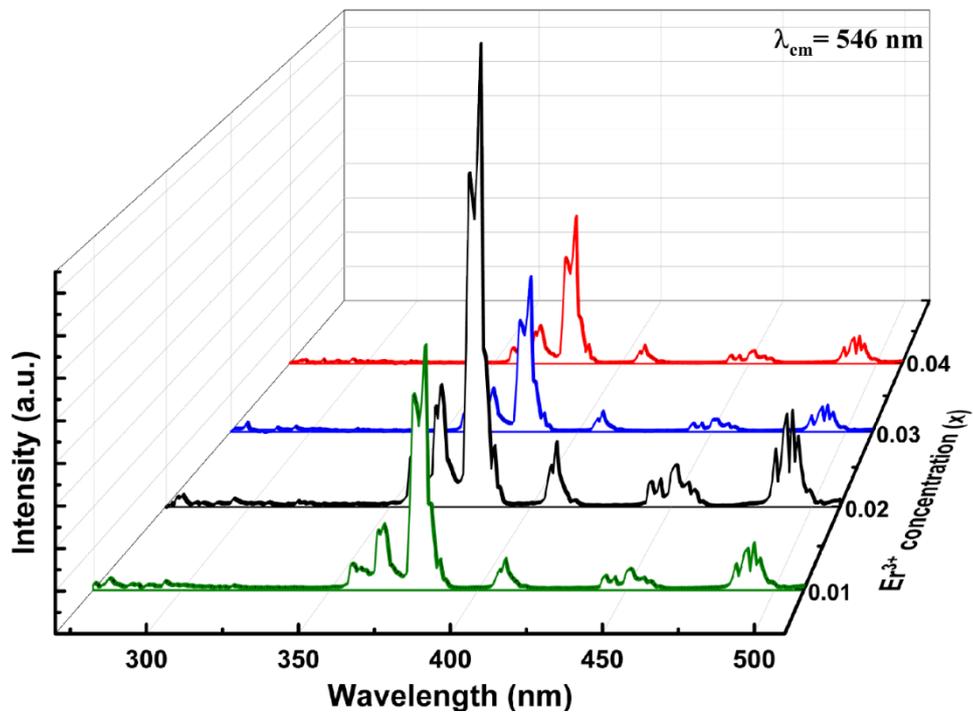


Fig. S5. The PLE spectra of $\text{Sc}_{1-x}\text{Er}_x\text{AlO}_3$ ($0.01 \leq x \leq 0.04$) compound.

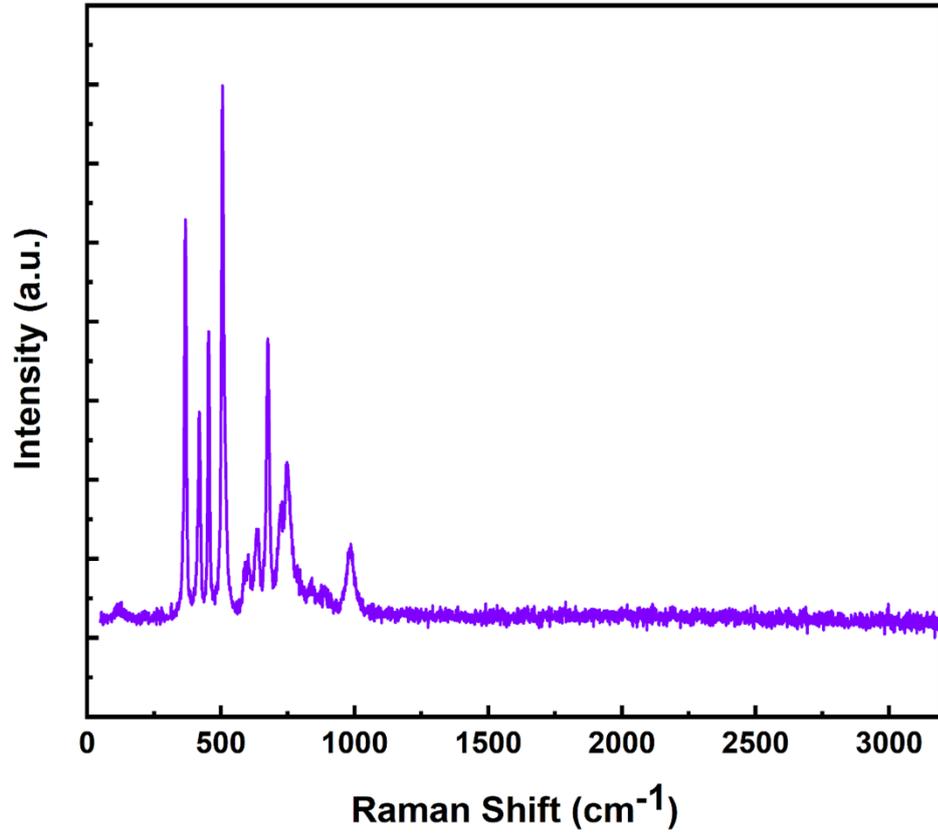


Fig. S6. Raman spectrum of $\text{Sc}_{0.98}\text{Er}_{0.02}\text{AlO}_3$ compound under excitation of 532 nm.

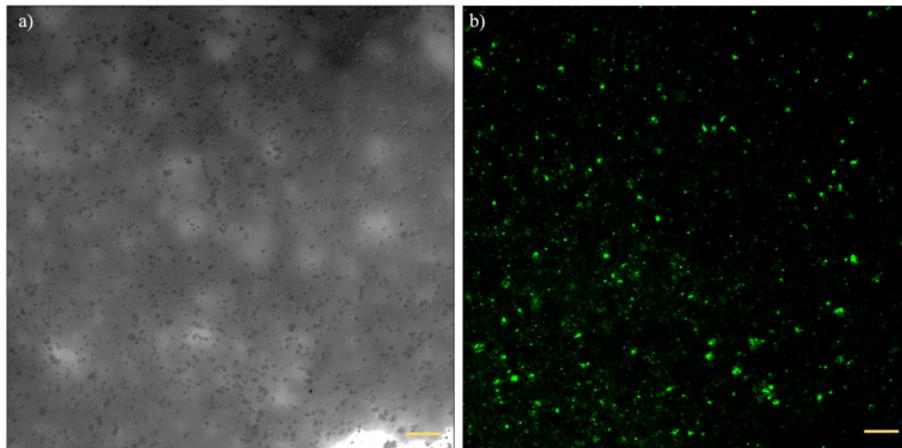


Fig. S7. Two-photon microscopy images of $\text{Sc}_{0.98}\text{Er}_{0.02}\text{AlO}_3$ dispersed in water. Scale 100 μm . (a) DIC and (b) $\text{Sc}_{0.98}\text{Er}_{0.02}\text{AlO}_3$ photoluminescent compound.

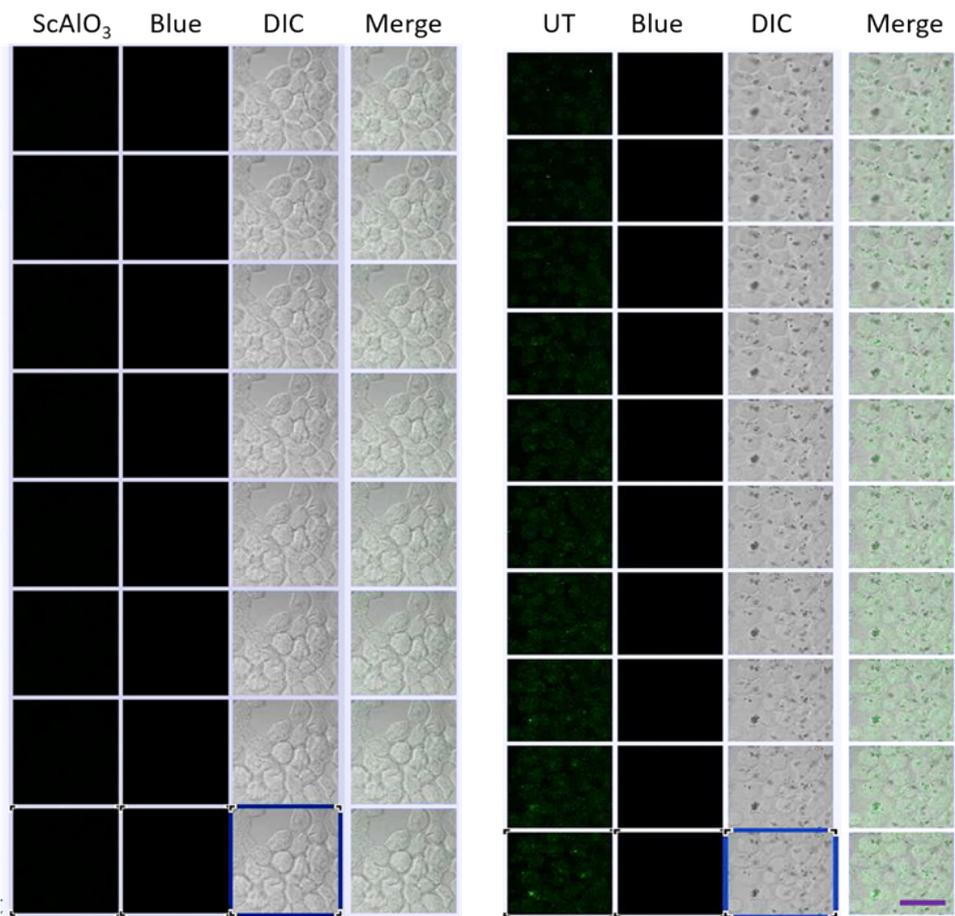


Fig. S8. Two photon Z-scan image of $\text{Sc}_{0.98}\text{Er}_{0.02}\text{AlO}_3$ incubated with HEK293 cells. (A) HEK293 treated cells and (B) HEK293 control cells. Scale 50 μm .

Table S1. The atomic percentage obtained from EDX measurement.

	<i>O</i>	<i>Al</i>	<i>Sc</i>	<i>Er</i>
$\text{Sc}_{0.98}\text{Er}_{0.02}\text{AlO}_3$	60.26	20.28	19.07	0.39