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## Upconversion luminescence and temperature sensor based on $Yb^{3+}\!/Er^{3+}$ co-doped $GdSr_2AlO_5$

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Figure S1 SEM image of  $GdSr_2AlO_5$  host

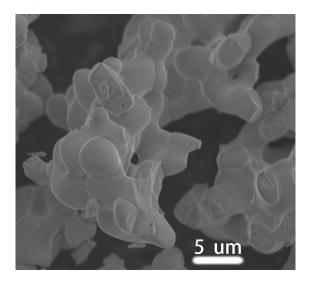


Figure S2 UC spectra of  $GdSr_2AlO_5$ :  $Yb^{3+}$ ,  $Er^{3+}$  crystals with different  $Yb^{3+}$  and  $Er^{3+}$  doping conditions under the excitation of 980 nm laser.

