Electronic supplementary information

Ultralow pressure sensing and luminescence thermometry based on emissions of Er^{3+}/ Yb^{3+} codoped Y$_2$Mo$_4$O$_{15}$ phosphors.

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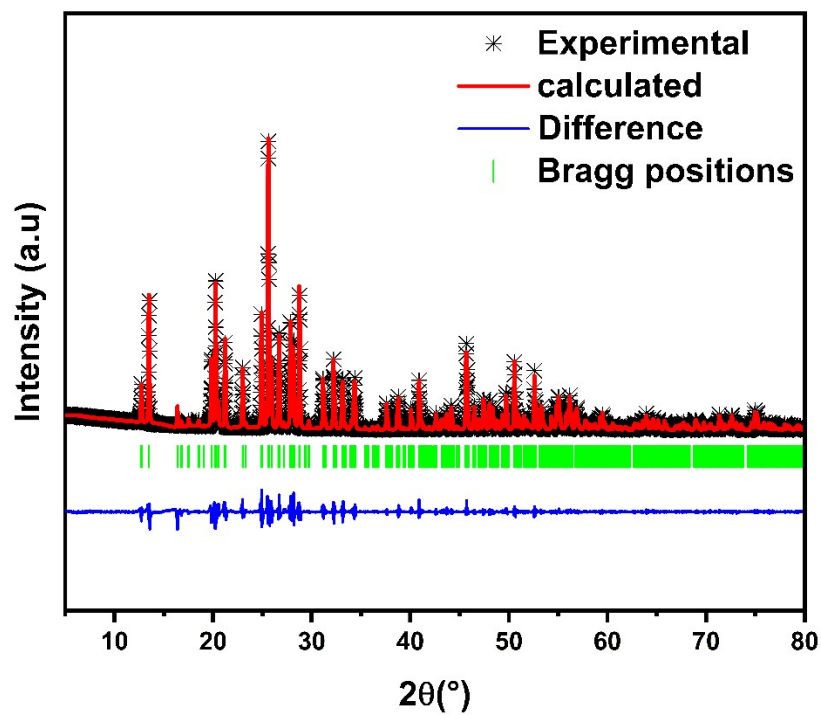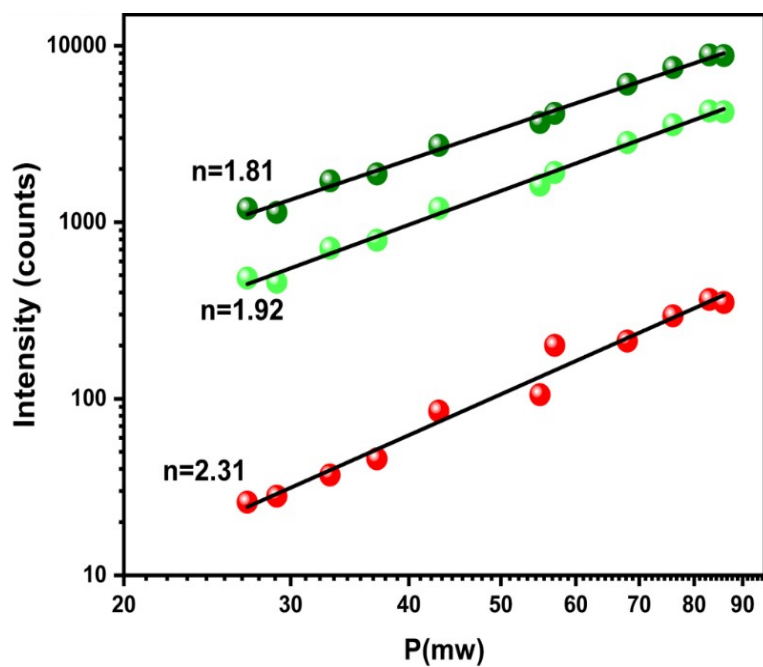
Figure S1. XRD Rietveld refinement of YMO.

Figure S2. (a) Relationship of Er^{3+} emission in YMO: 2% Er^{3+}/ 20% Yb^{3+} when pump power is increased.
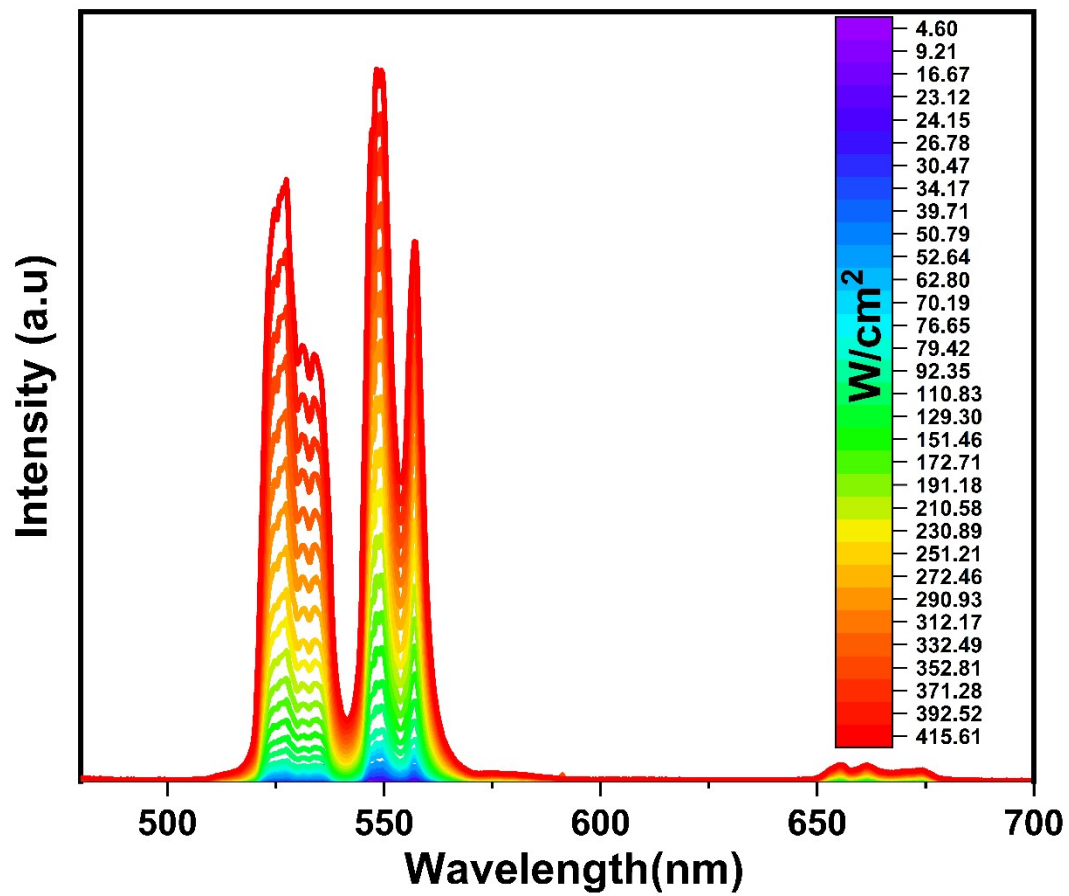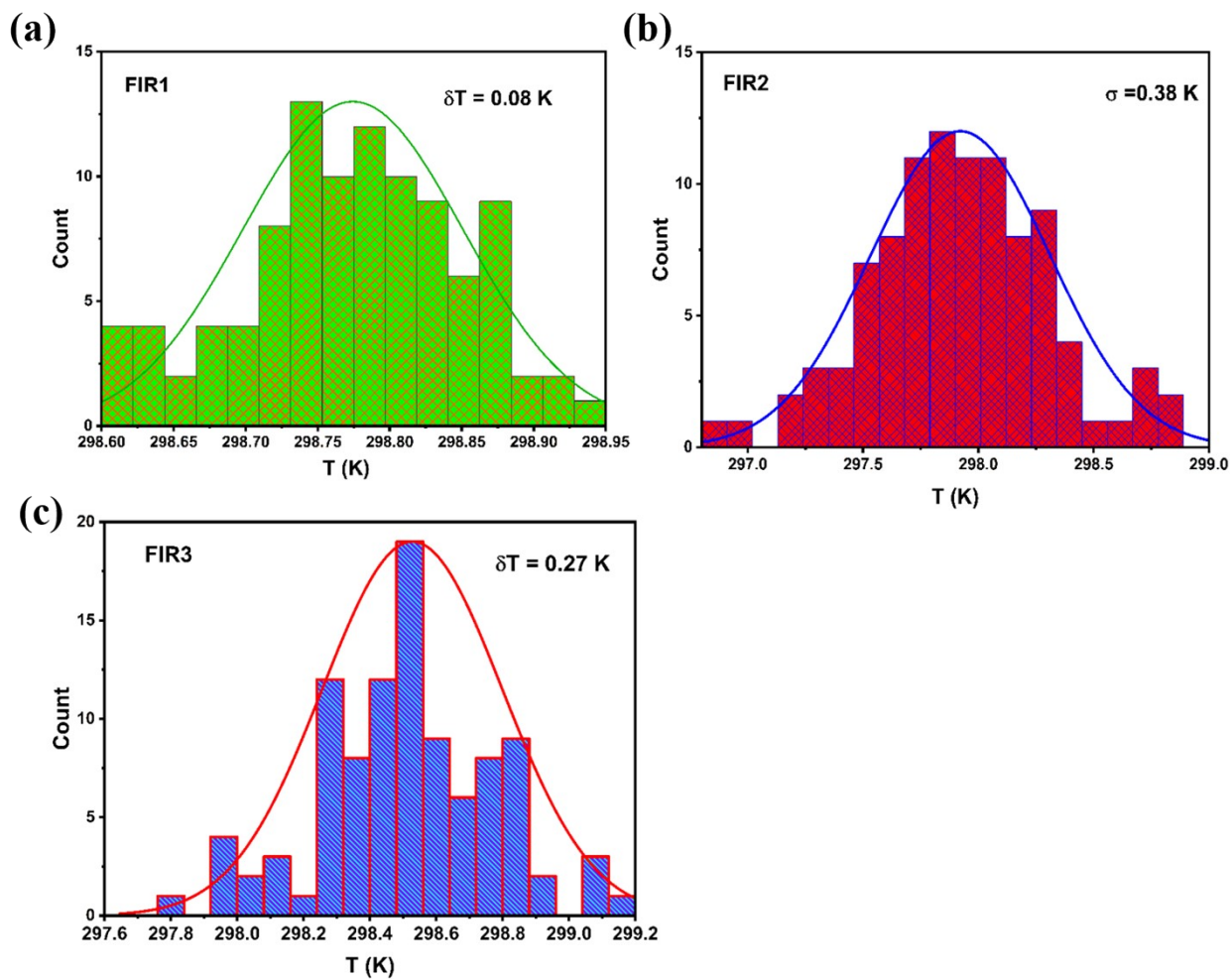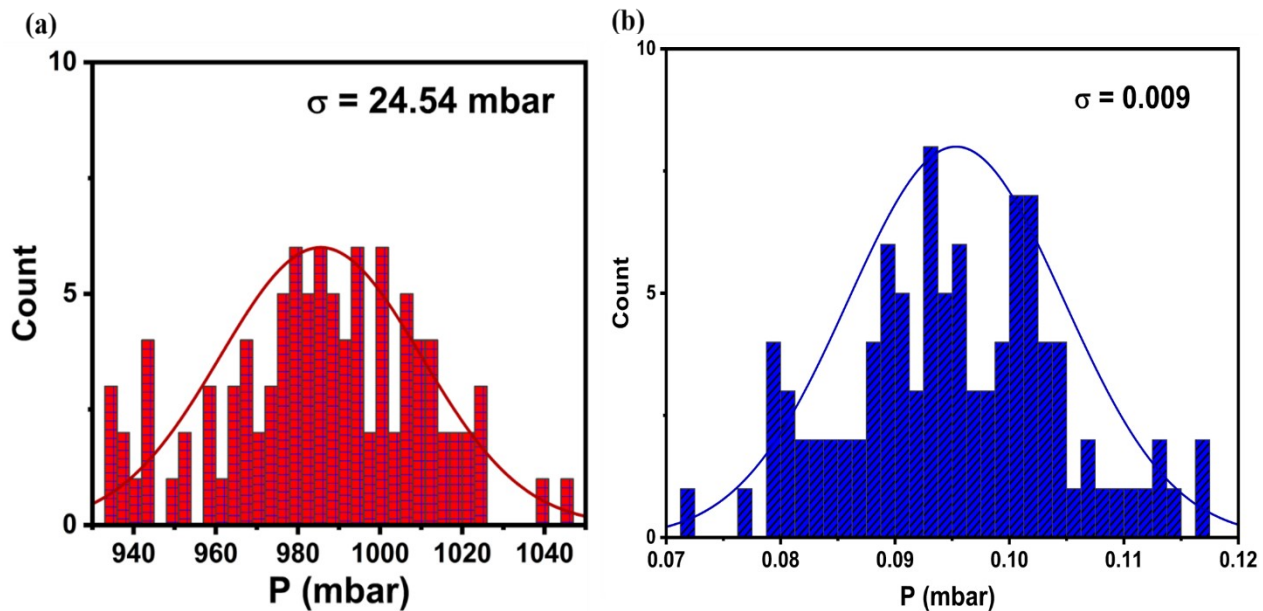
Figure S3. UC spectra of YMO under different pumping powers at room temperature.

Figure S4. Standard deviations at RT for (a) FIR1 ,(b) FIR2 and FIR3 (c) obtained using 100 measurements at 298 K.

Figure S5. Standard deviations for the FIR at (a) 1000 mbar and 0.1 mbar (b) obtained using 100 measurements.

TableS1: Refined parameters obtained from fitting of diffractograms YMO.

Cryst syst: monoclinic Z= 2 Space group P2$_1$/c a = 6.8111 Å b= 9.5716 Å c= 10.5100Å α=90° β = 105.5252 ° γ=90° V= 660.1960 Å^3

TableS2: the parameters of the fitting and the maximum value of the Sa and Sr.

	FIR2	FIR3
The parameters of the fitting	A= 19.22 B= -0.18 C= 5.89 E-4 D= -4.99 E-7	A= 0.07 B= -2.50 E-4 C= -1.60 E-7 D= 1.34 E-9
S_{rmax} (%K^{-1})	0.8	1
S_{amax}	0.05	0.67