

Supporting Information

Spectroscopic properties of $\text{LaGaO}_3\text{:V}$, Nd^{3+} nanocrystals as a potential luminescent thermometer

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KEYWORDS LaGaO_3 nanocrystals, vanadium, neodymium, luminescent thermometry

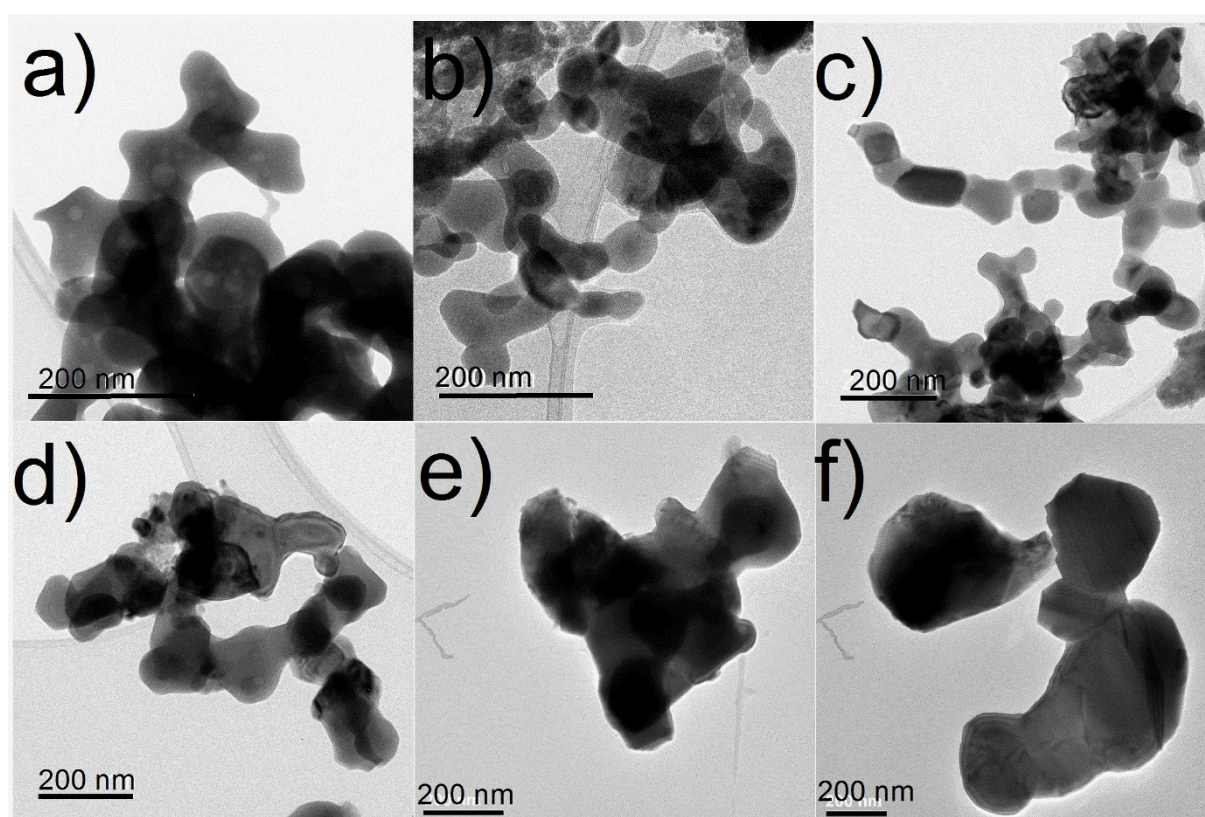


Fig. S1. Representative TEM images of $\text{LaGaO}_3\text{:V}$ nanocrystals annealed at 600°C- a), 700°C –b), 800°C- c), 1000°C – d) and 1100°C –e);

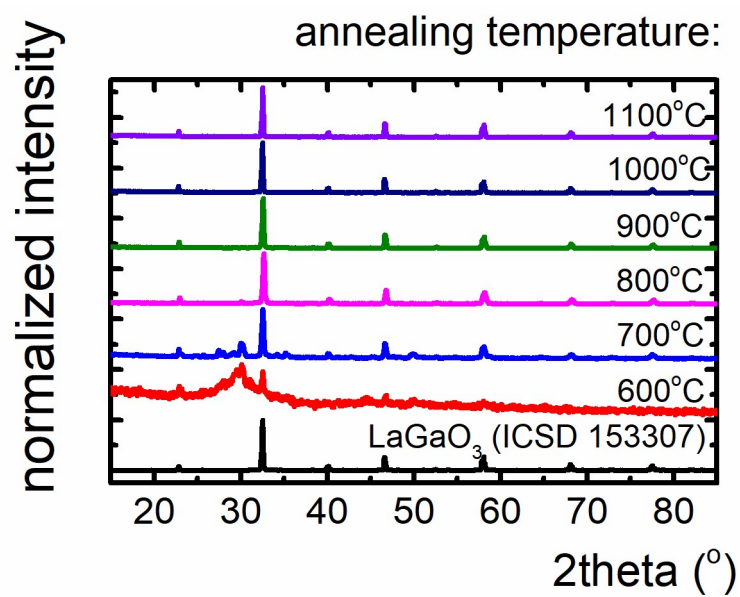


Fig. S2. XRD patterns of LaGaO₃:1%V nanocrystals annealed at different temperatures.

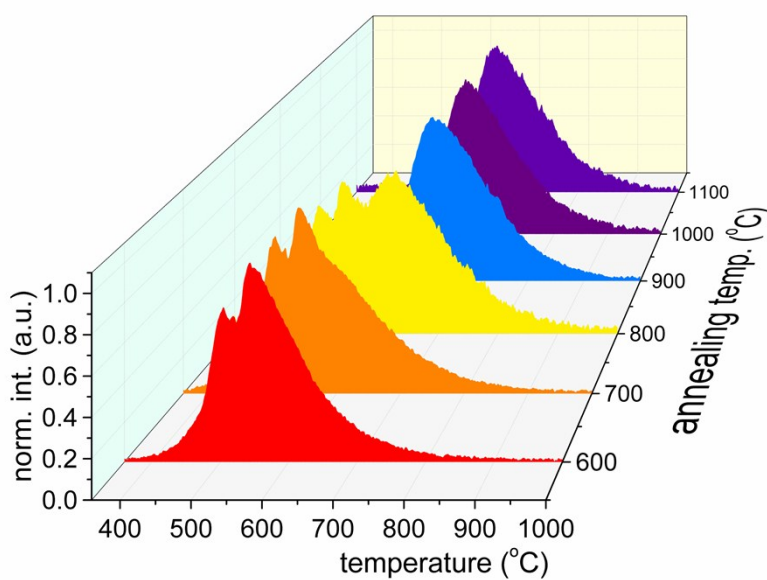


Fig.S3. Normalized emission spectra of LaGaO₃:1% nanocrystals annealed at different temperatures and measured at -150°C.

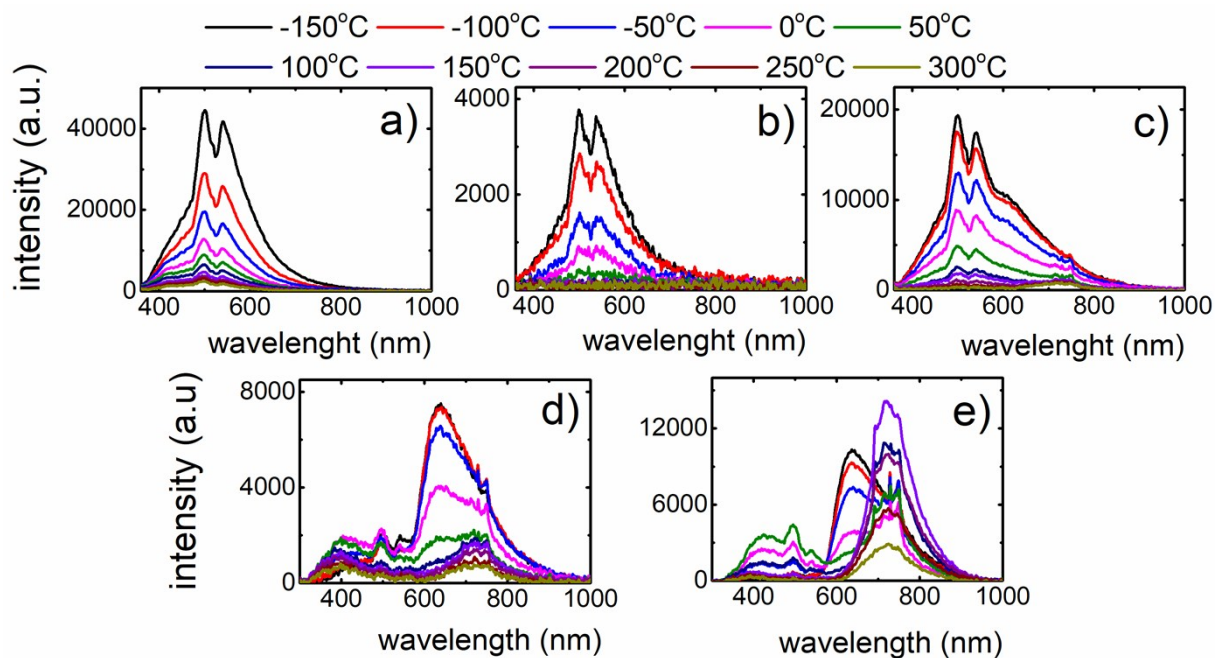


Fig. S4. Emission spectra of $\text{LaGaO}_3:0.1\%\text{V}$ nanocrystals annealed at 600°C- a), 700°C -b), 800°C- c), 1000°C – d) and 1100°C –e) measured at the temperature range from -300°C to 150°C.

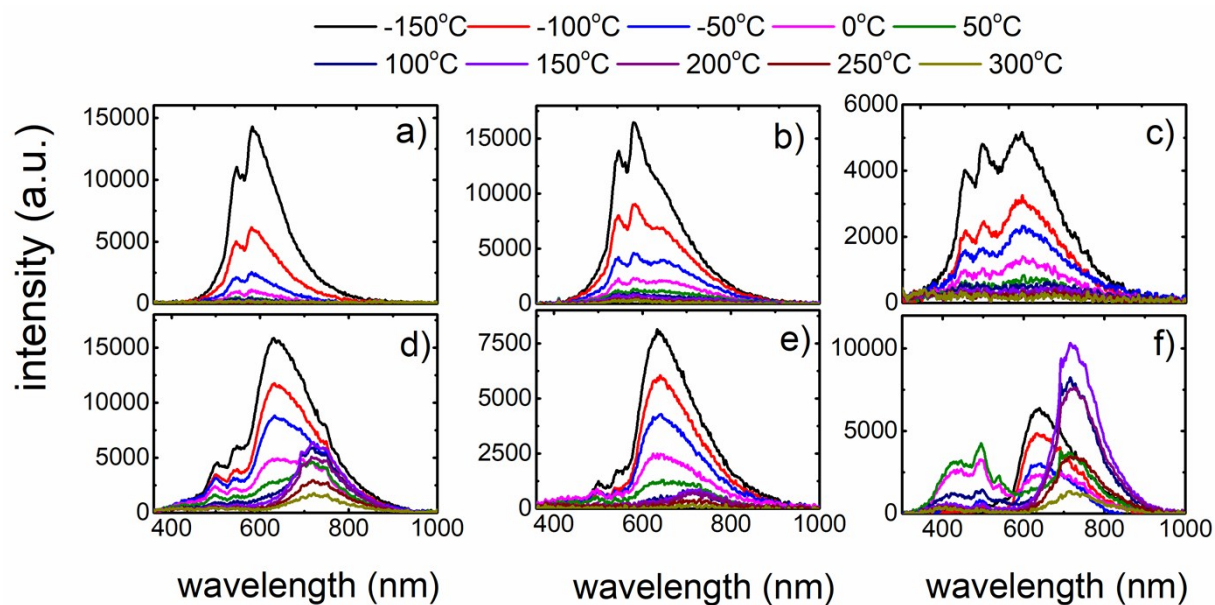


Fig. S5. Emission spectra of $\text{LaGaO}_3:1\%\text{V}$ nanocrystals annealed at 600°C- a), 700°C –b), 800°C- c), 900°C – d), 1000°C and 1100°C –f) measured at the temperature range from -300°C to 150°C.

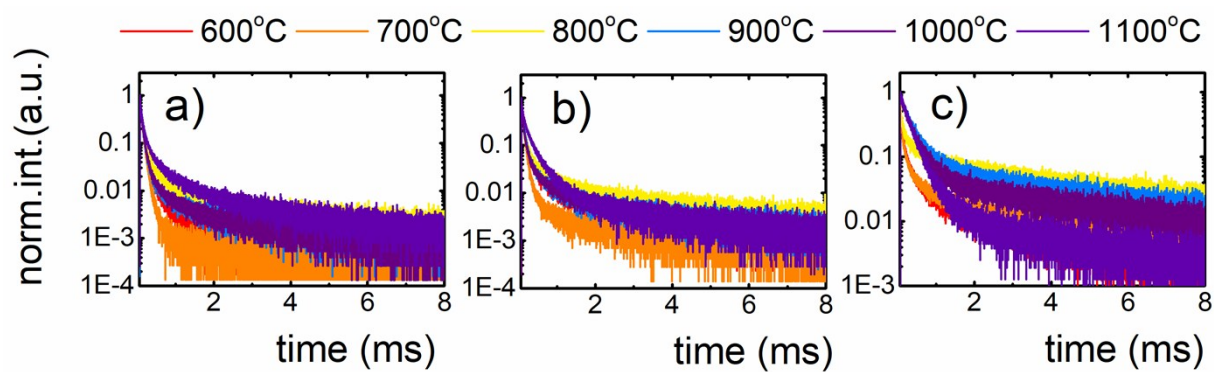


Fig. S6. The luminescent decay of V^{5+} - a), V^{4+} -b) and V^{3+} ions -c) in $LaGaO_3:0.1\% V$ nanocrystals annealed at different temperatures.

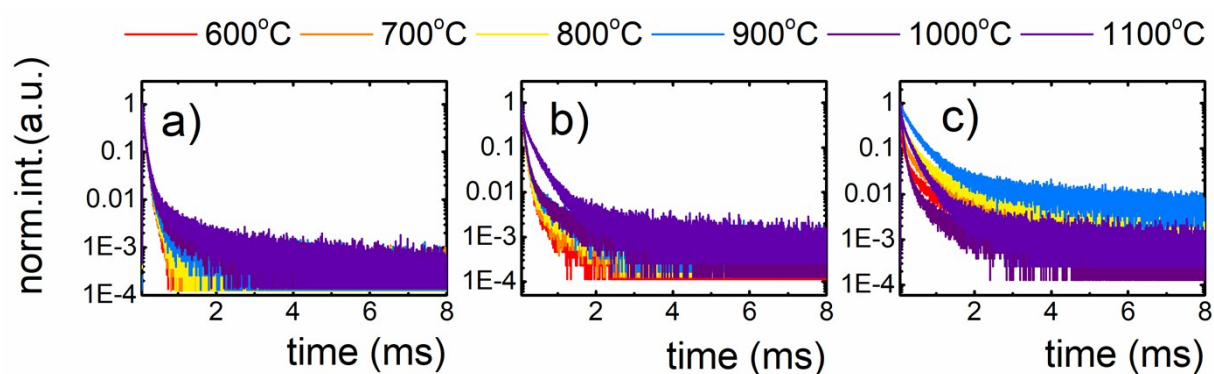


Fig. S7. The luminescent decay of V^{5+} - a), V^{4+} -b) and V^{3+} ions -c) in $LaGaO_3:1\% V$ nanocrystals annealed at different temperatures.