

Supporting Information

Synthesis, Structure and Near Infrared Photoluminescence of Hexanitratoneodymate Ionic Liquids

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Figure S1. Packing Diagram of **1** Viewed down the *b*-axis.

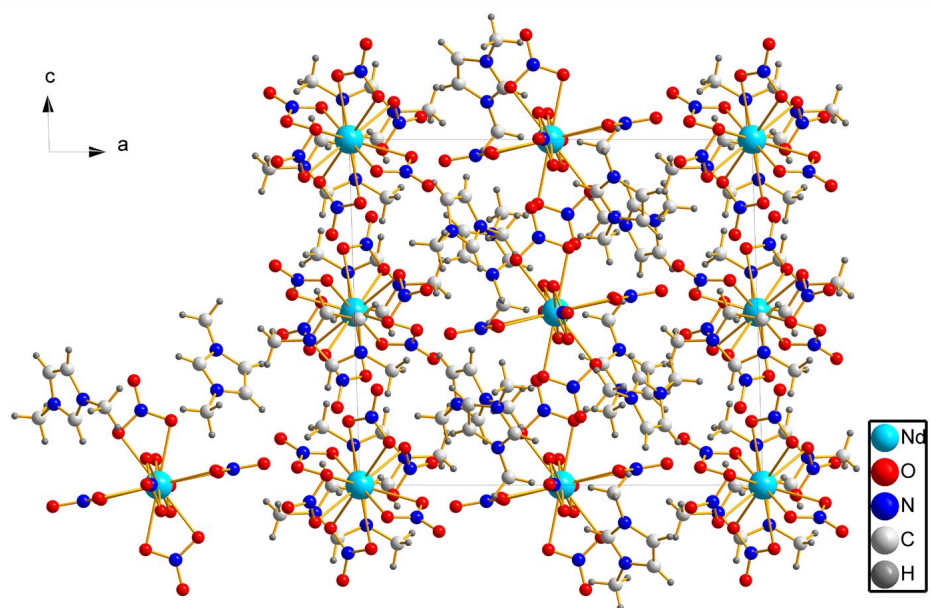


Figure S2. Packing Diagram of **1** Viewed down the *c*-axis.

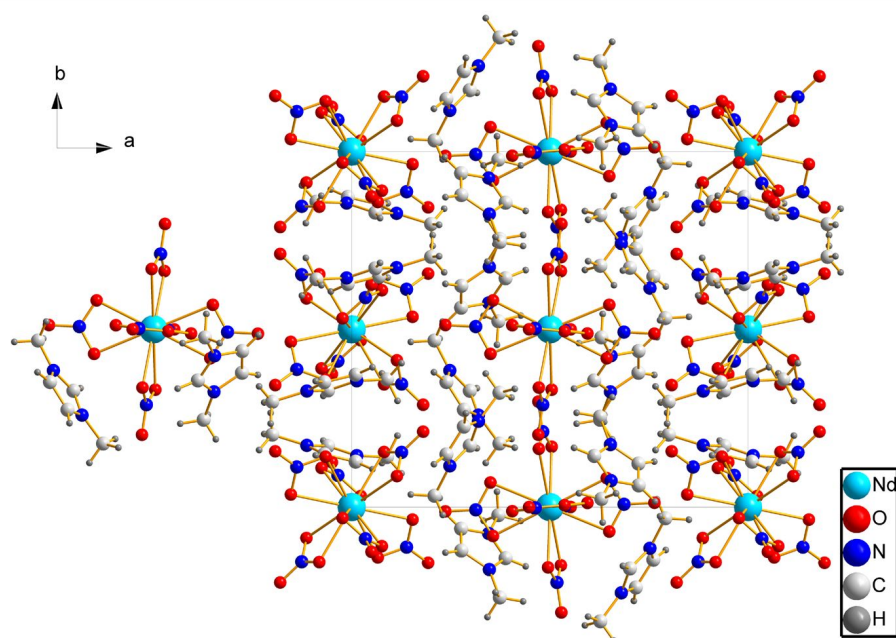


Figure S3. ^1H NMR Spectrum of Tri(1,3-dimethylimidazolium) Hexanitratoneodymate, $[\text{C}_1\text{mim}]_3[\text{Nd}(\text{NO}_3)_6]$, (**1**).

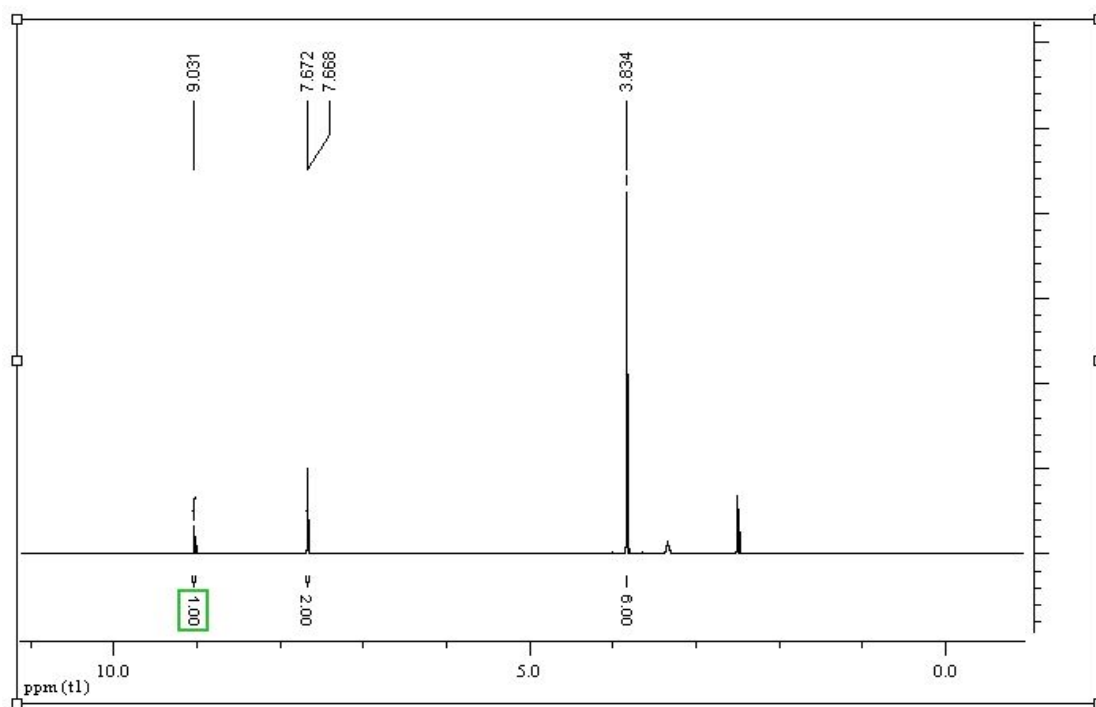


Figure S4. ^{13}C NMR Spectrum of Tri(1,3-dimethylimidazolium) Hexanitratoneodymate, $[\text{C}_1\text{mim}]_3[\text{Nd}(\text{NO}_3)_6]$, (**1**).

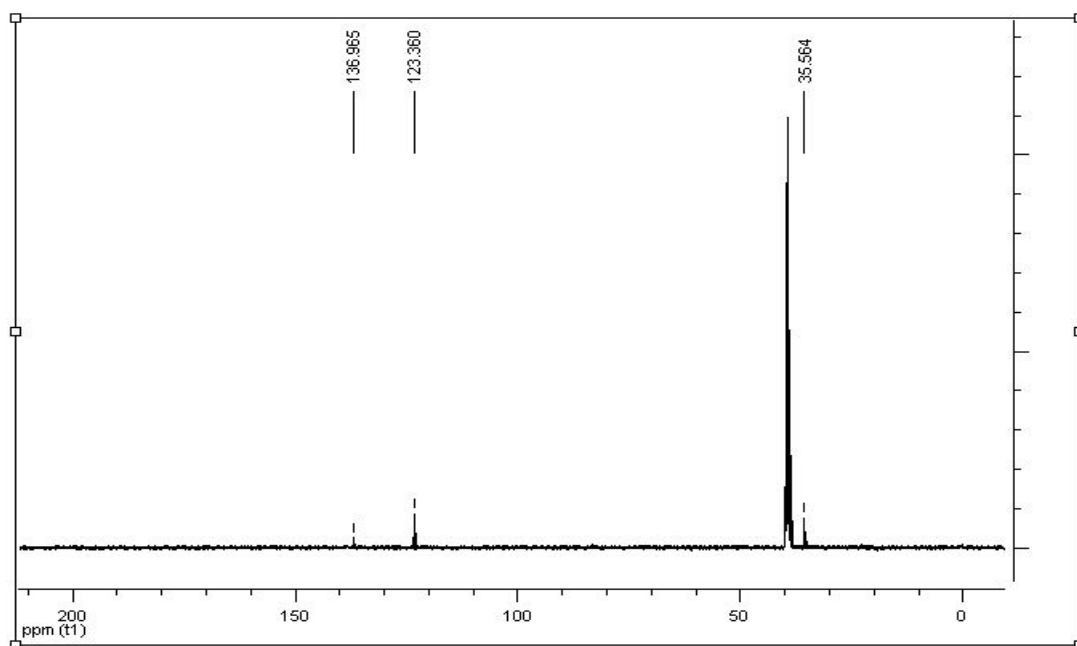


Figure S5. ^1H NMR Spectrum of Tri(1-ethyl-3-methylimidazolium) Hexanitratoneodymate, $[\text{C}_2\text{mim}]_3[\text{Nd}(\text{NO}_3)_6]$, (**2**).

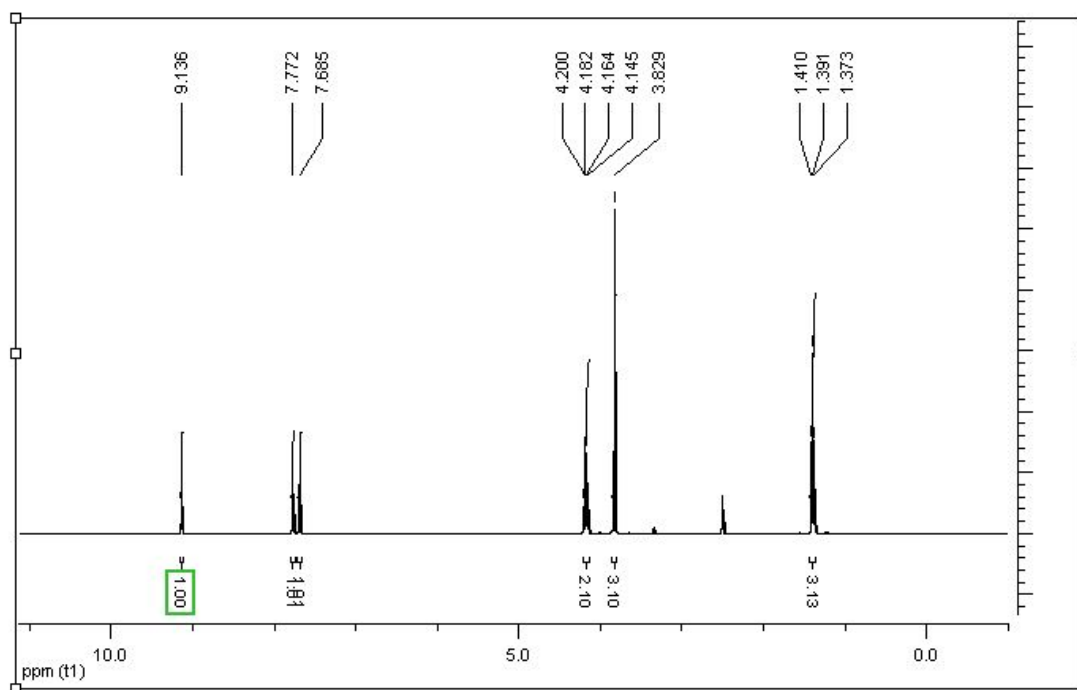


Figure S6. ^{13}C NMR Spectrum of Tri(1-ethyl-3-methylimidazolium) Hexanitratoneodymate, $[\text{C}_2\text{mim}]_3[\text{Nd}(\text{NO}_3)_6]$, (**2**).

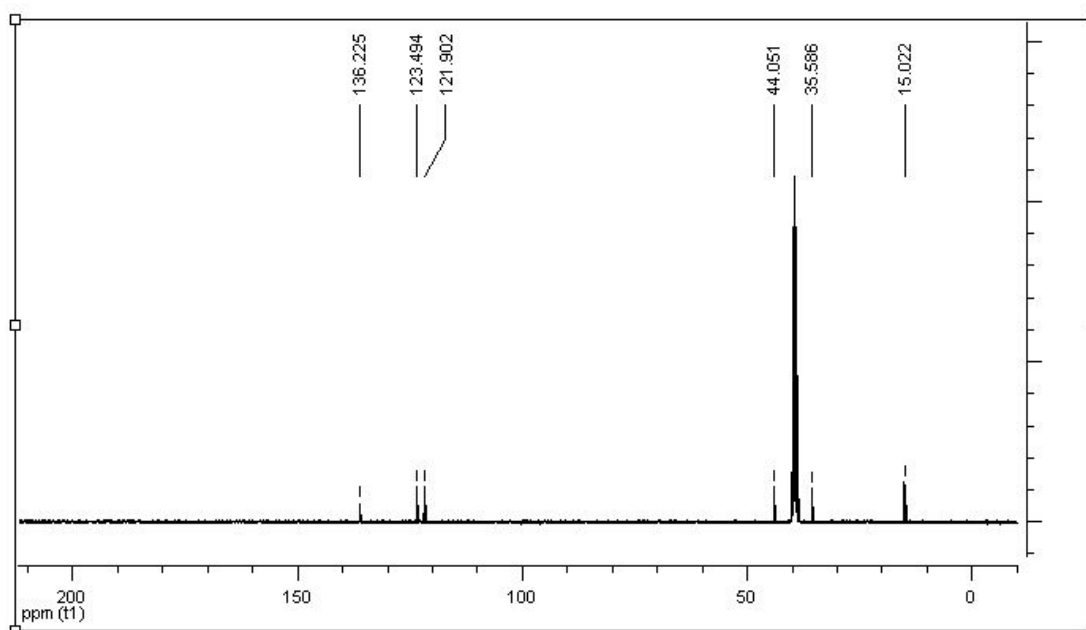


Figure S9. ^1H NMR Spectrum of Tri(1-hexyl-3-methylimidazolium) Hexanitratoneodymate, $[\text{C}_6\text{mim}]_3[\text{Nd}(\text{NO}_3)_6]$, (**4**).

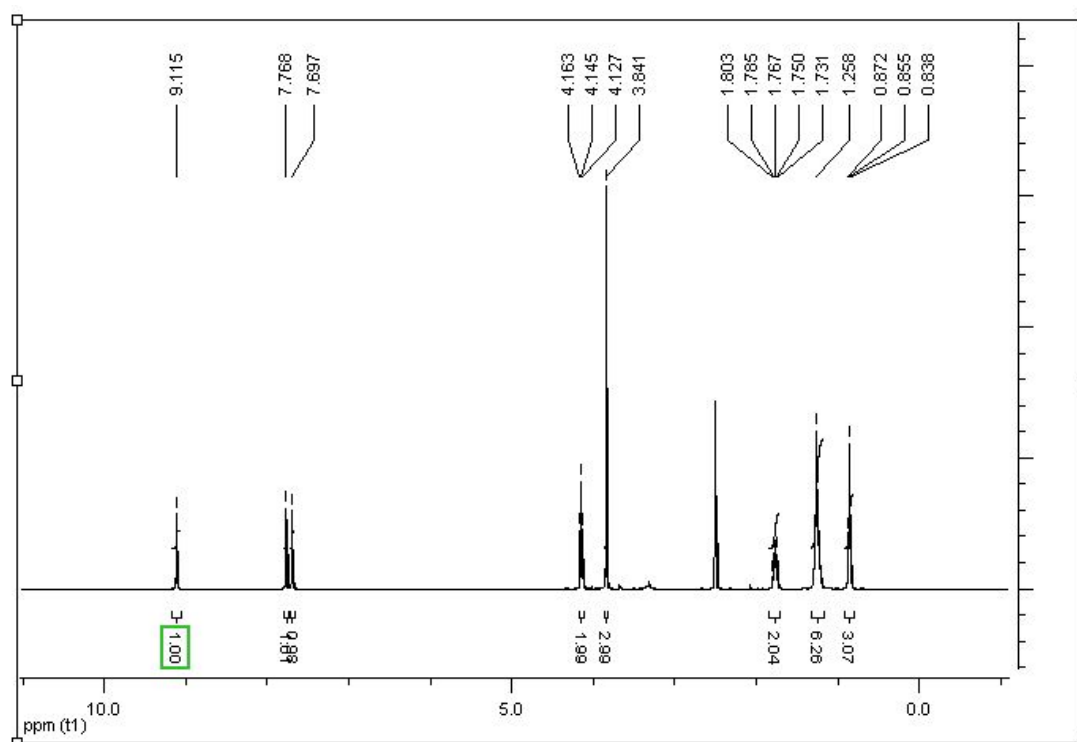


Figure S10. ^{13}C NMR Spectrum of Tri(1-hexyl-3-methylimidazolium) Hexanitratoneodymate, $[\text{C}_6\text{mim}]_3[\text{Nd}(\text{NO}_3)_6]$, (**4**).

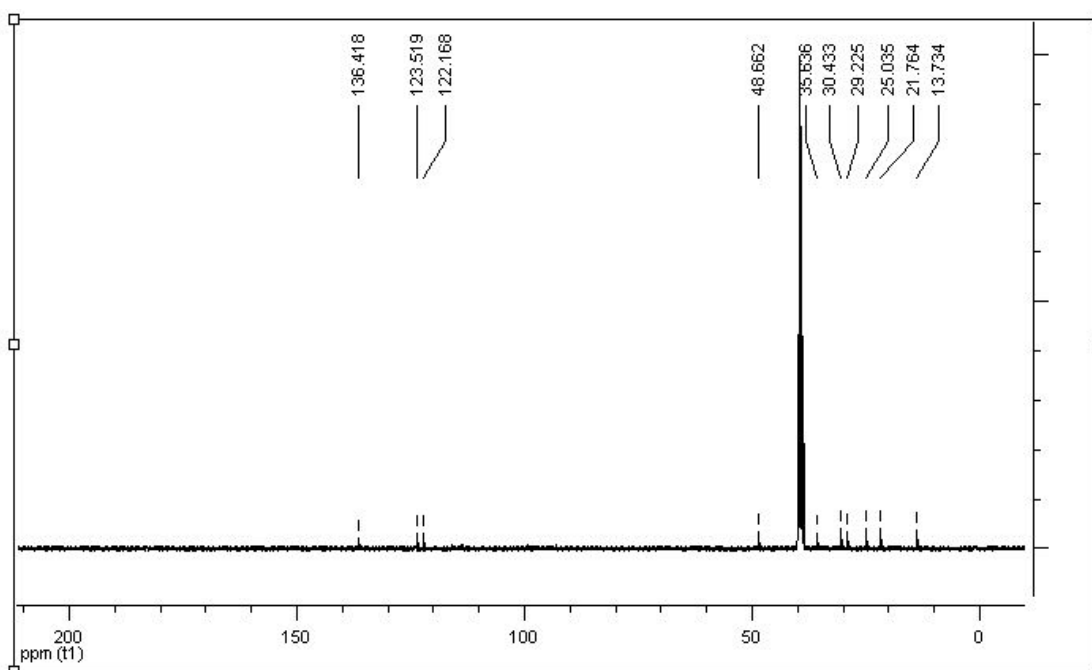


Figure S11. ^1H NMR Spectrum of Tri(1-methyl-3-octylimidazolium) Hexanitratoneodymate, $[\text{C}_8\text{mim}]_3[\text{Nd}(\text{NO}_3)_6]$, (**5**).

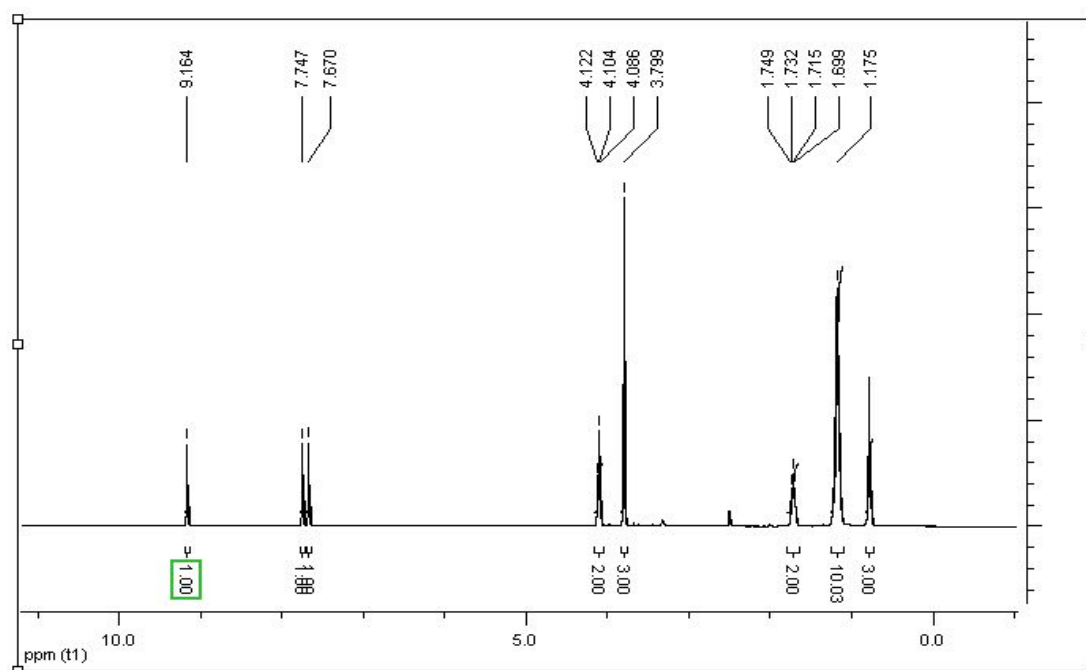


Figure S12. ^{13}C NMR Spectrum of Tri(1-methyl-3-octylimidazolium) Hexanitratoneodymate, $[\text{C}_8\text{mim}]_3[\text{Nd}(\text{NO}_3)_6]$, (**5**).

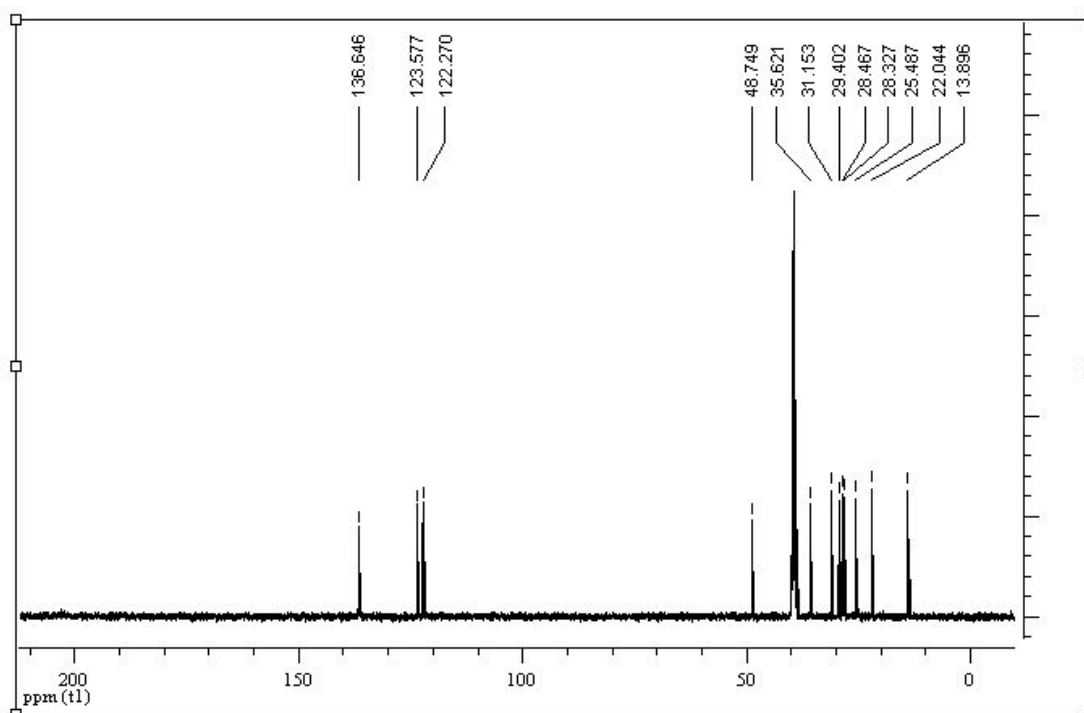


Figure S13. IR Spectra of **1**, **1 + 1 wt% H₂O**, and **Nd(NO₃)₃·6H₂O**.

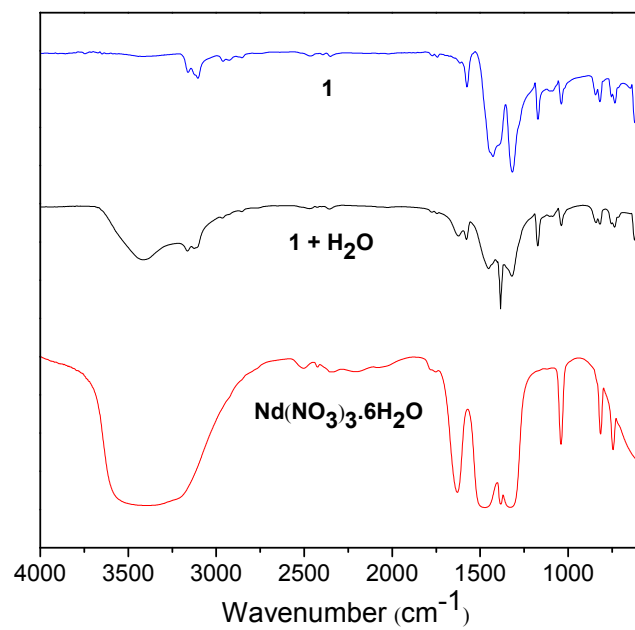


Figure S14. Excitation Spectrum of **3**.

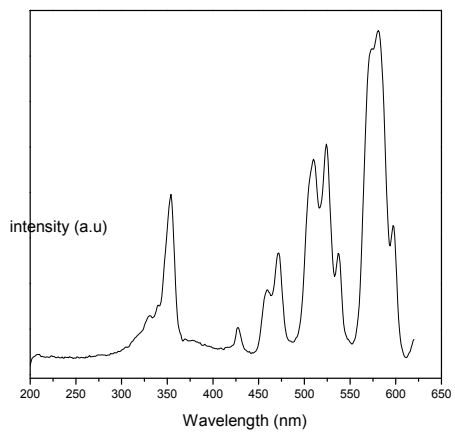


Figure S15. Excitation Spectrum of **4**.

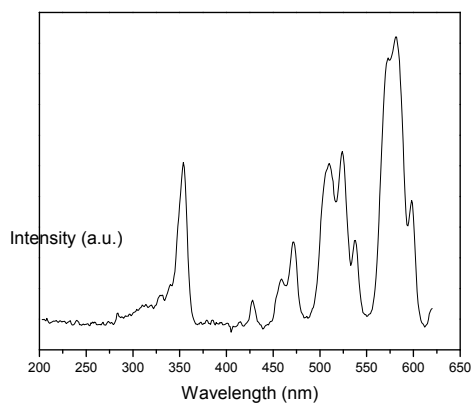


Figure S16. Excitation Spectrum of **5**.

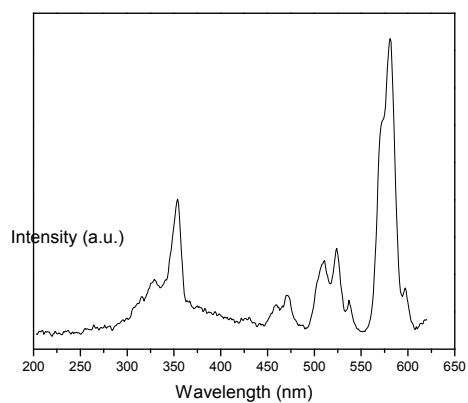


Figure S17. Emission Spectrum of **3**.

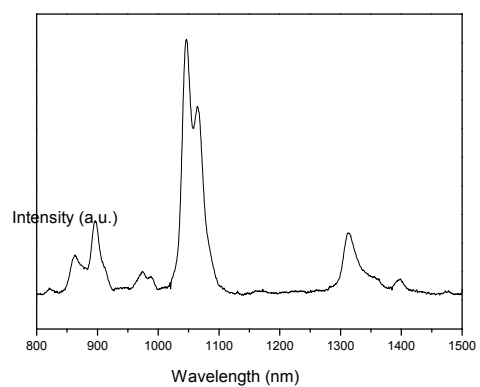


Figure S18. Emission Spectrum of **4**.

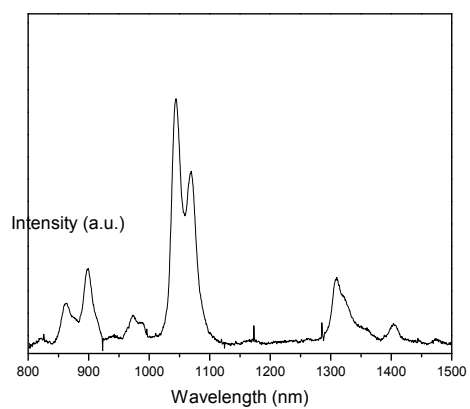


Figure S19. Emission Spectrum of **5**.

