Supplementary Materials

UDC: 546.65, 548.3, 548.736.5

Crystal chemistry and topology of simple rare-earth element sulfates: synthesis, crystal structures, and spectroscopy of crystals with the general formula $Ln_2(SO_4)_3 \cdot 8H_2O$

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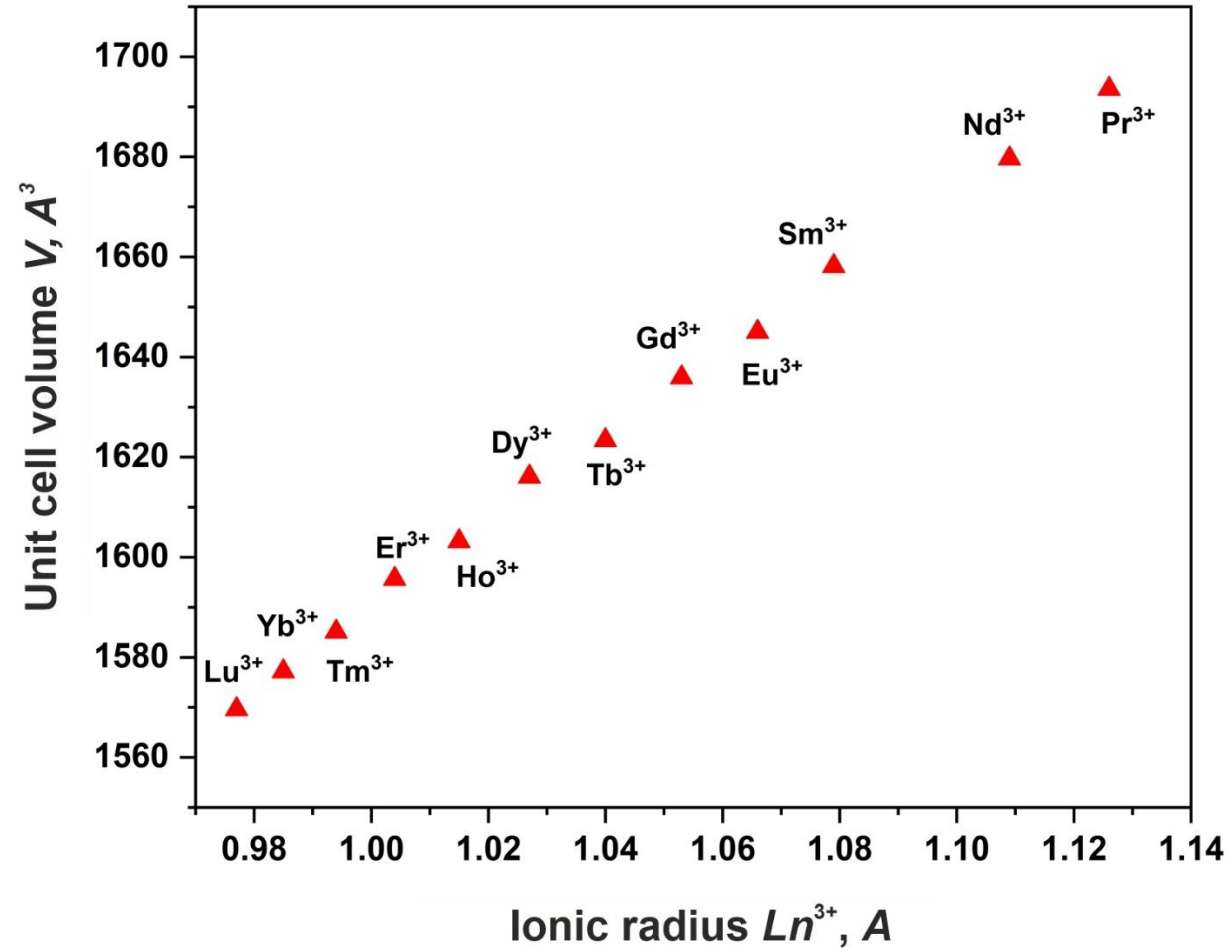

Fig. 1. Dependence of the unit cell volume of $Ln_2^{3+}(SO_4)_2 \cdot 8H_2O$ on the ionic radius of the rare-earth element.

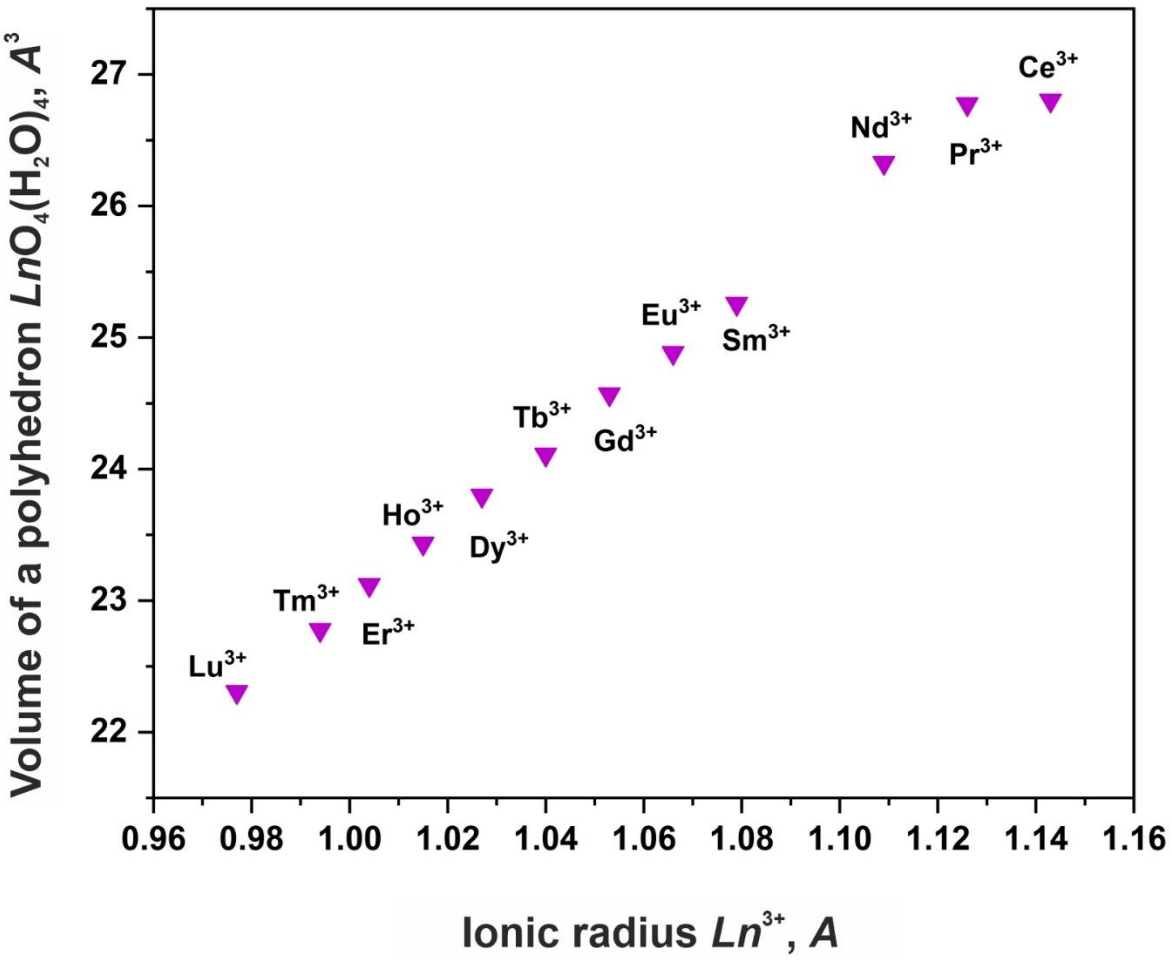

Fig. 2. Volume of the $LnO_4(H_2O)_4$ coordination polyhedron as a function of the rare-earth element ionic radius.

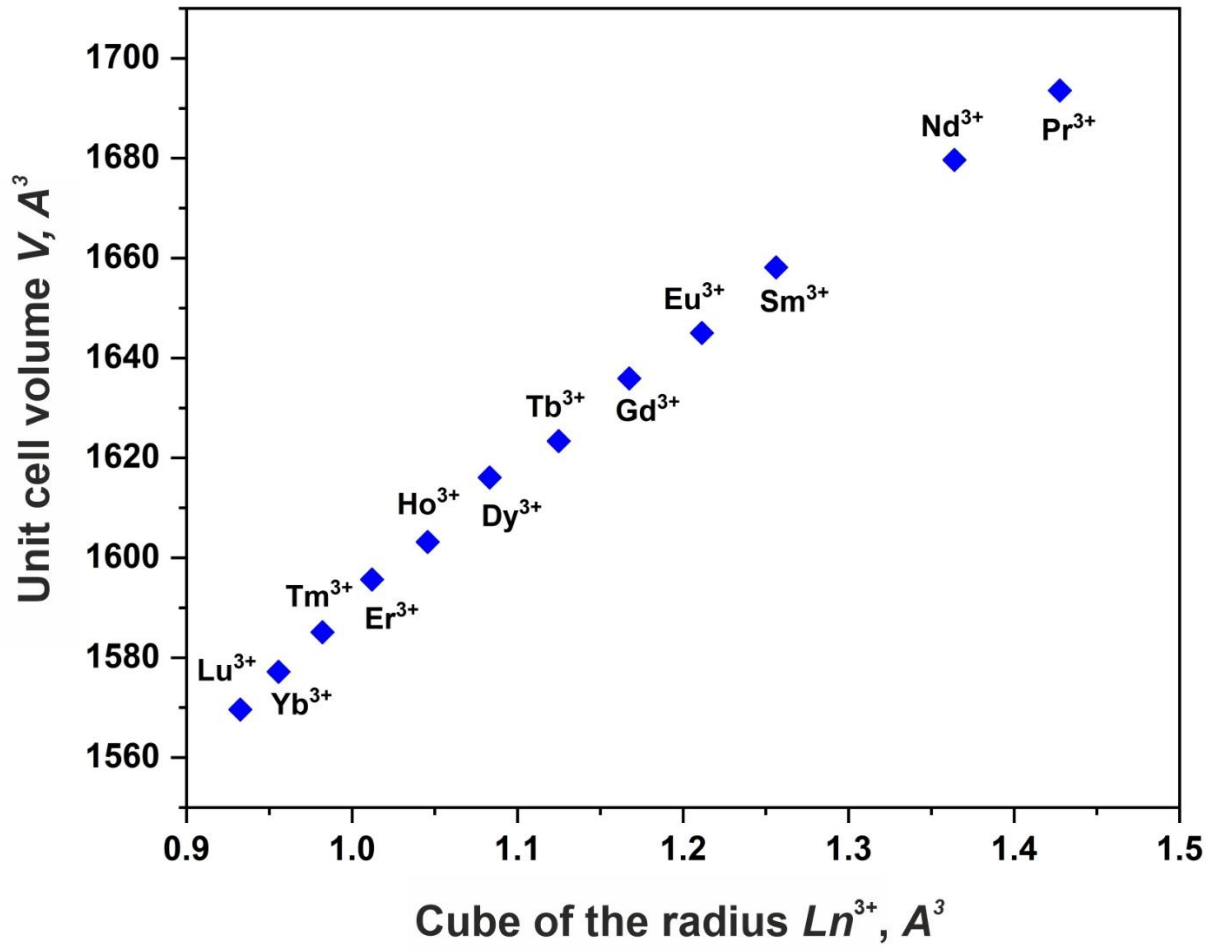

Fig. 3. Unit cell volume of $Ln_2^{3+}(SO_4)_2 \cdot 8H_2O$ as a function of the cube of the rare-earth element ionic radius.

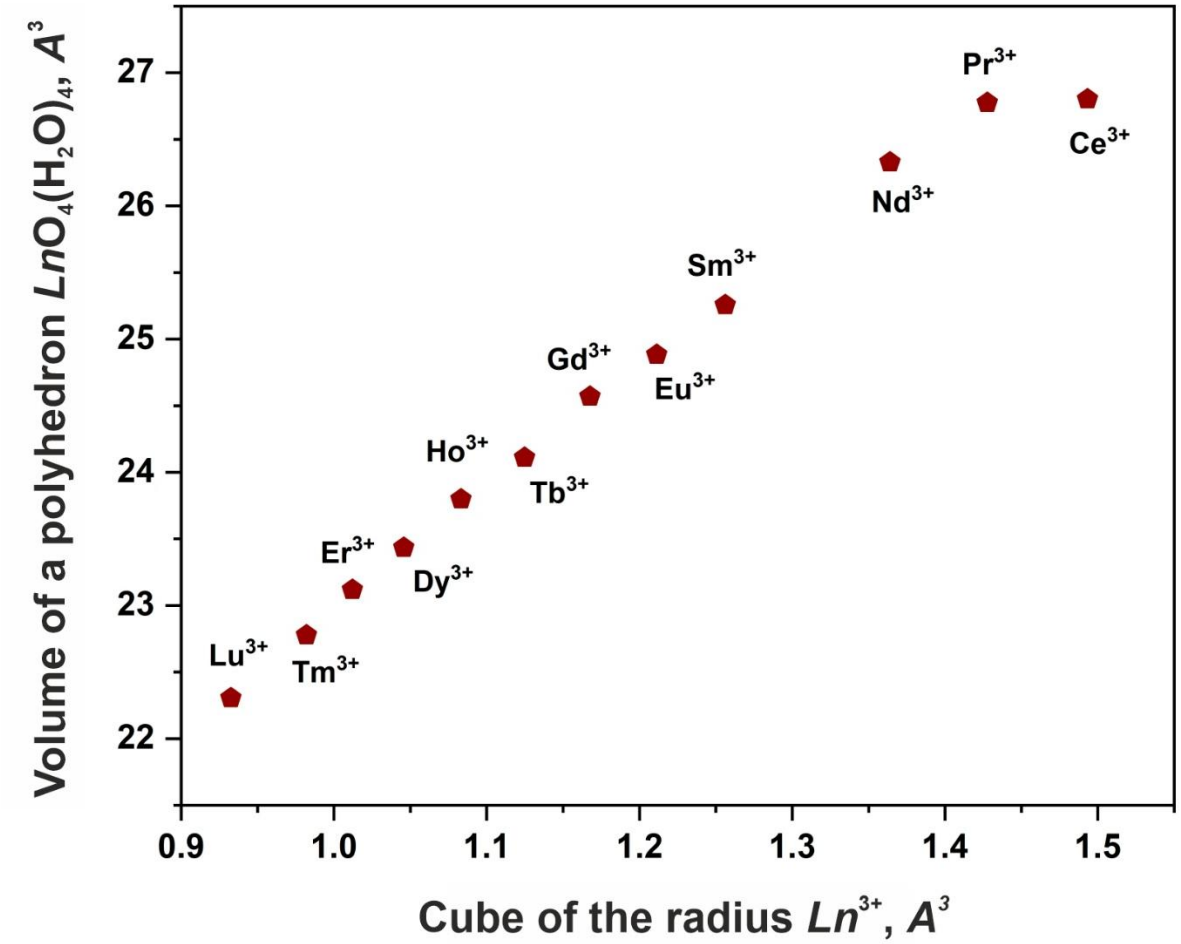

Fig. 4. Volume of $LnO_4(H_2O)_4$ polyhedron as a function of the cube of the rare-earth element ionic radius.

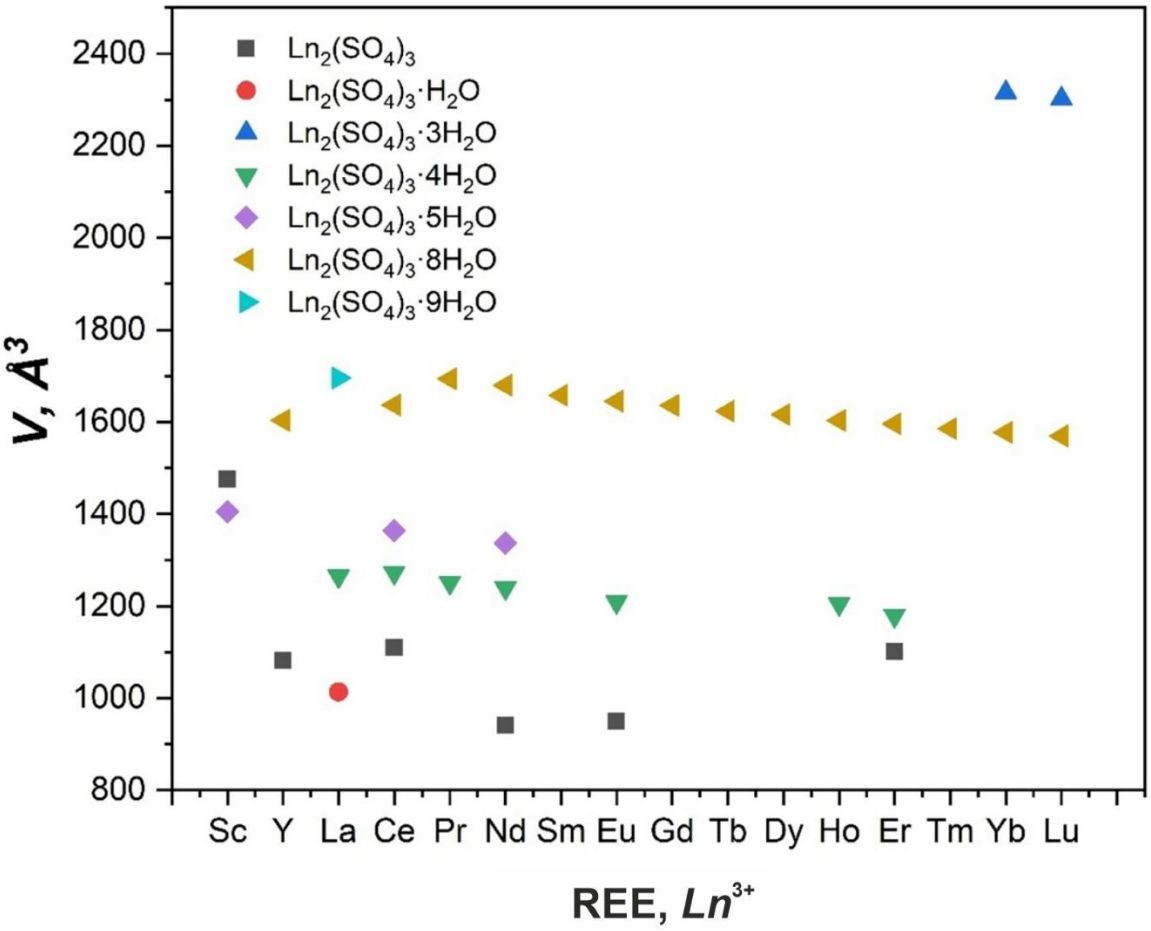

Fig. 5. Decrease in the unit cell volume V (Å^3) of rare-earth sulfates with the general formula $Ln_2(SO_4)_3 \cdot nH_2O$ with increasing atomic number of the rare-earth element.

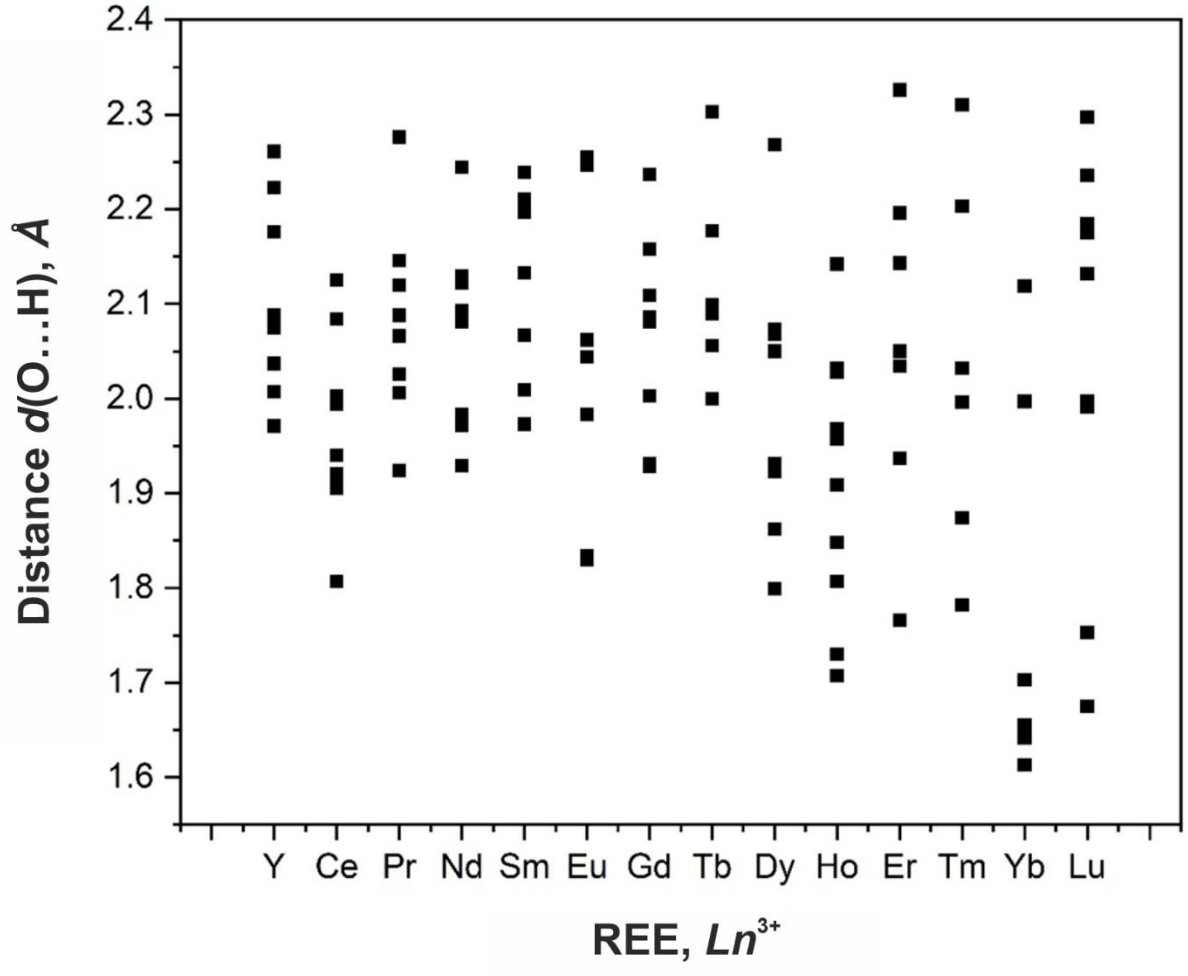

Fig. 6. The O···H distance (Å) in the range of 1.576 – 2.3152 Å for compounds of the composition $Ln_2(SO_4)_3 \cdot 8H_2O$ (*Ln* = Ce–Nd and Sm–Lu, Y).