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## Evaluation of surrogate-models for the incorporation of tetravalent actinides in monazite phases

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Monazite is being investigated as a host for long-term storage of radioactive waste, especially actinides. While trivalent cations can easily be incorporated via a simple substitution reaction the incorporation of tetravalent ions has proven difficult. Synthesis of the solid solution  $\text{LaPO}_4 - \text{Ca}_{0.5}\text{Ce}_{0.5}\text{PO}_4$  has been attempted resulting in an unexpected non-linear change of lattice parameters. Possible causes for this behavior will be investigated via various analytical techniques.

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