

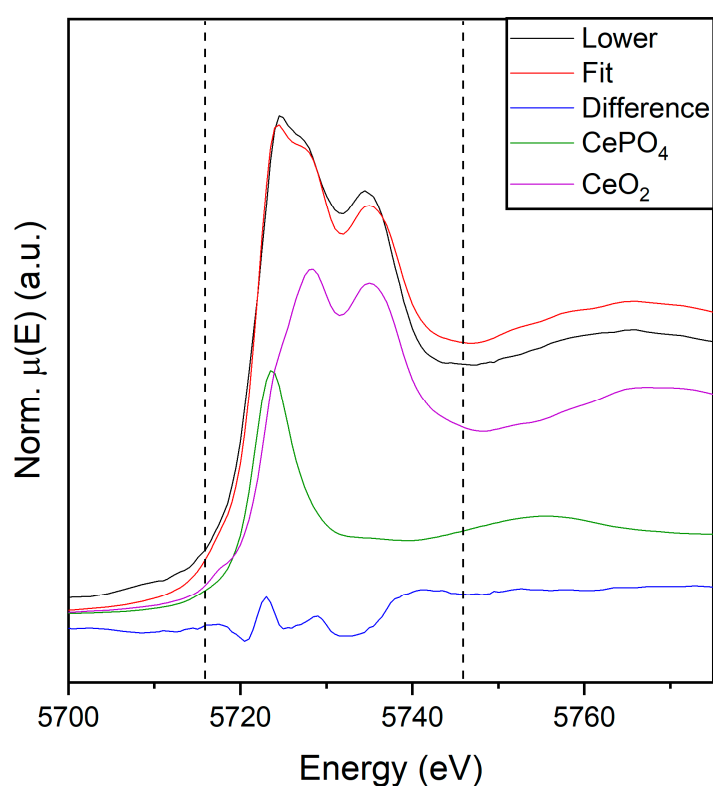
Supplementary Information

Characterisation of a complex $\text{CaZr}_{0.9}\text{Ce}_{0.1}\text{Ti}_2\text{O}_7$ glass-ceramic produced by Hot Isostatic Pressing

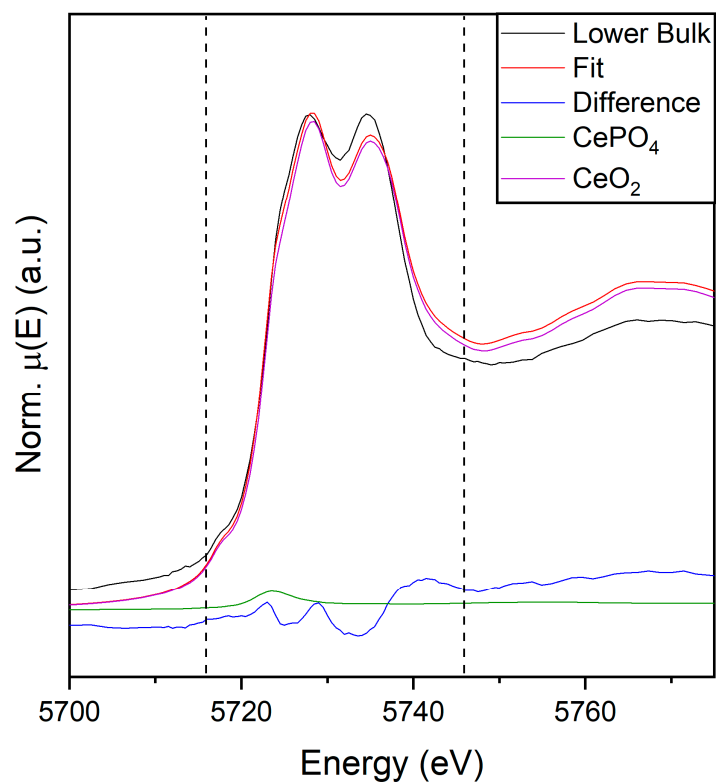
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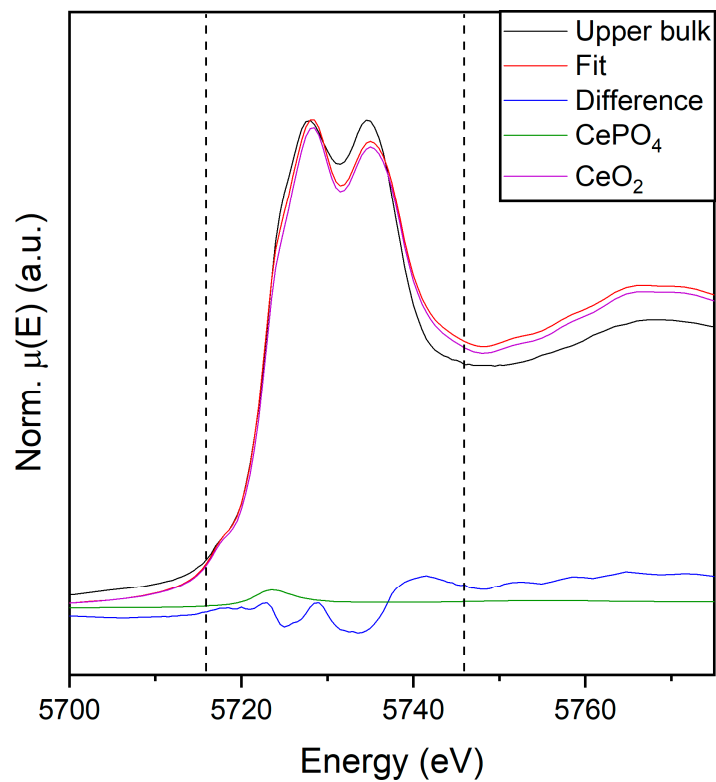
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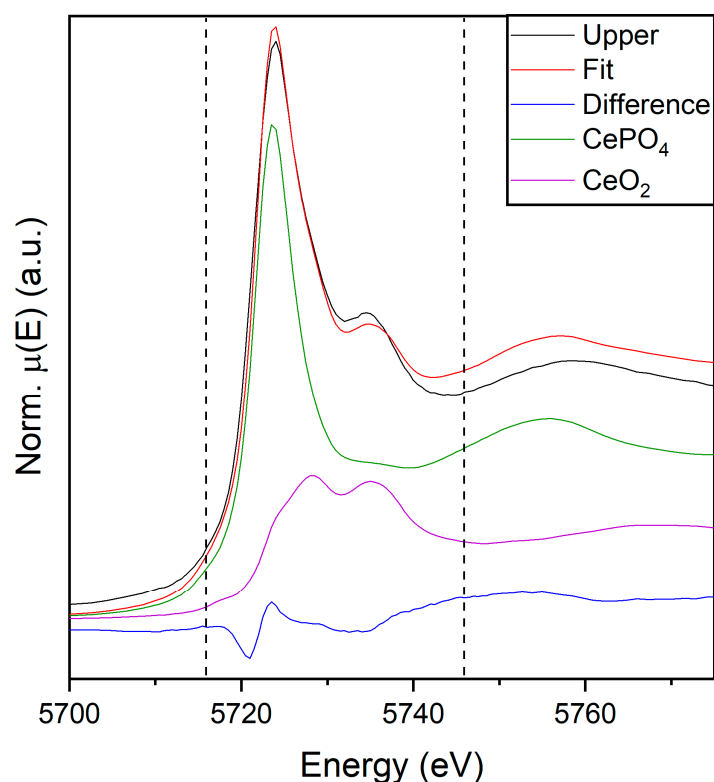
Supplementary Figure S1: Linear combination fit of the Ce L₃-edge XANES spectrum of the lower region of a HIPed glass-ceramic targeting 30 wt.% $\text{CaZr}_{0.9}\text{Ce}_{0.1}\text{Ti}_2\text{O}_7$ in 70 wt.% $\text{Na}_2\text{Al}_2\text{Si}_6\text{O}_{16}$ glass. The calculated Ce oxidation state was 3.7(1) and the fit R factor was 0.0187.



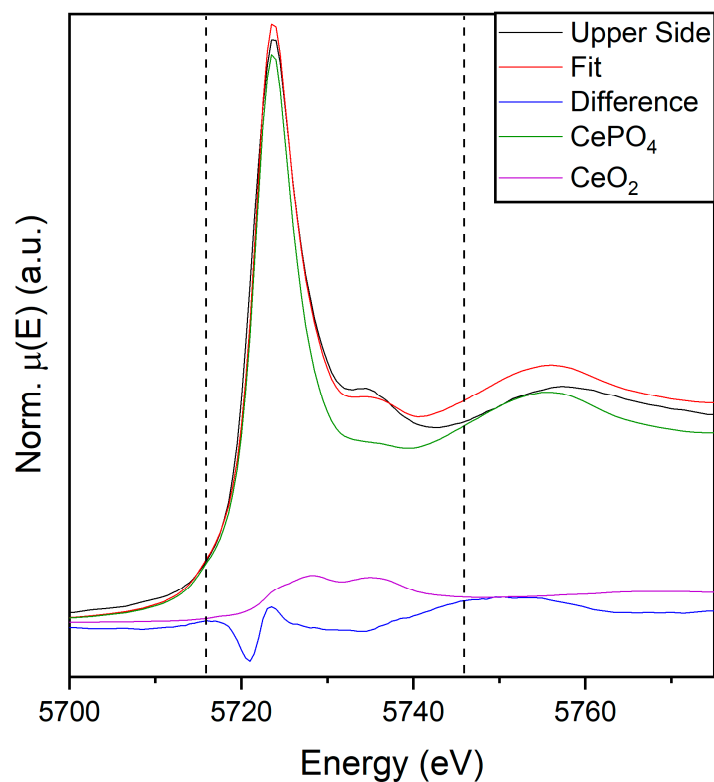
Supplementary Figure S2: Linear combination fit of the Ce L₃-edge XANES spectrum of the lower bulk region of a HIPed glass-ceramic targeting 30 wt.% CaZr_{0.9}Ce_{0.1}Ti₂O₇ in 70 wt.% Na₂Al₂Si₆O₁₆ glass. The calculated Ce oxidation state was 4.0(1)+, and the fit R factor was 0.0149.



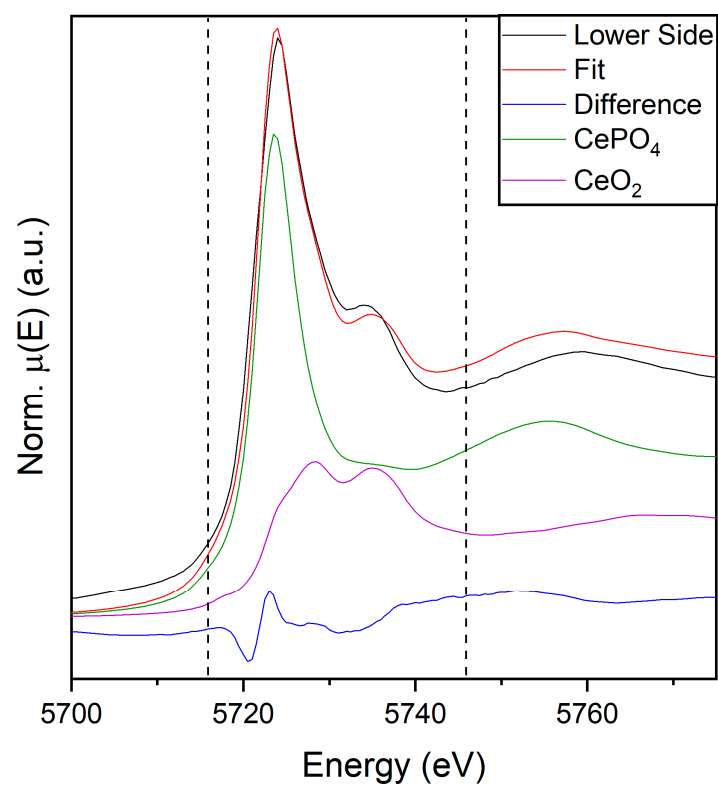
Supplementary Figure S3: Linear combination fit of the Ce L₃-edge XANES spectrum of the upper bulk region of a HIPed glass-ceramic targeting 30 wt.% CaZr_{0.9}Ce_{0.1}Ti₂O₇ in 70 wt.% Na₂Al₂Si₆O₁₆ glass. The calculated Ce oxidation state was 4.0(1)+, and the fit R factor was 0.0154.



Supplementary Figure S4: Linear combination fit of the Ce L₃-edge XANES spectrum of the upper region of a HIPed glass-ceramic targeting 30 wt.% CaZr_{0.9}Ce_{0.1}Ti₂O₇ in 70 wt.% Na₂Al₂Si₆O₁₆ glass. The calculated Ce oxidation state was 3.3(1)+, and the fit R factor was 0.0127.



Supplementary Figure S5: Linear combination fit of the Ce L₃-edge XANES spectrum of the upper side region of a HIPed glass-ceramic targeting 30 wt.% CaZr_{0.9}Ce_{0.1}Ti₂O₇ in 70 wt.% Na₂Al₂Si₆O₁₆ glass. The calculated Ce oxidation state was 3.1(1)+, and the fit R factor was 0.0095.



Supplementary Figure S6: Linear combination fit of the Ce L₃-edge XANES spectrum of the lower side region of a HIPed glass-ceramic targeting 30 wt.% CaZr_{0.9}Ce_{0.1}Ti₂O₇ in 70 wt.% Na₂Al₂Si₆O₁₆ glass. The calculated Ce oxidation state was 3.4(1)⁺, and the fit R factor was 0.0182.