

Supplementary information

Effect of Zr- substitution for Ce in $\text{BaCe}_{0.8}\text{Gd}_{0.15}\text{Pr}_{0.05}\text{O}_{3-\delta}$ on their chemical stability in CO_2 and water, and electrical conductivity

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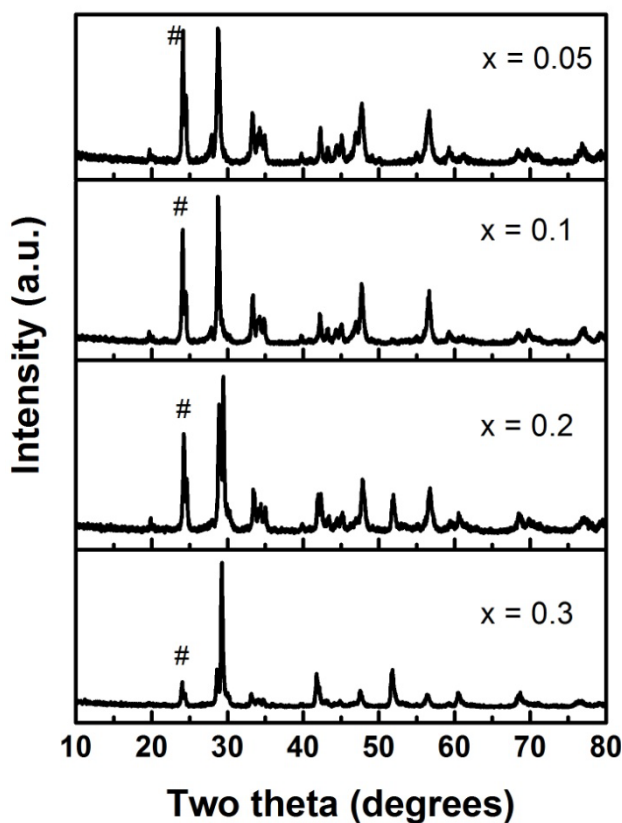


Fig. S1 PXRD patterns obtained for $\text{BaCe}_{0.8-x}\text{Zr}_x\text{Gd}_{0.15}\text{Pr}_{0.05}\text{O}_{3-\delta}$ (BCZGP) ($x = 0.01, 0.05, 0.1, 0.2$ and 0.3) samples after chemical stability measurements under pure CO_2 at 800°C for 24 h. (# indicate peaks corresponding to the formation of BaCO_3 (JCPDS Card number: 5-378).)



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Fig. S2 Appearance of the BCZGP $x=0.1$ sample (a) as-prepared (b) after exposure to pure CO_2 at 600 °C for 24 h (c) after exposure to H_2O vapour treatment for 24 h at ~90 °C.