Supporting Information

Figure S0 XPS of Ce(3d) core level spectra in (a) CeO₂; (b) Ce₂O₃ and (c) Ce(3d) core level spectrum obtained by the addition of CeO₂ and Ce₂O₃ in the ratio of 60:40.
Fig. S1 TEM image of CeO$_2$ showing the cubic crystallites of CeO$_2$. Particle size ranges from 25-30 nm. Details are given in the manuscript text on page 5 and 6.

Fig. S2 TEM image of Ce$_{0.98}$Pd$_{0.02}$O$_{2-δ}$ showing the cubic crystallites of CeO$_2$ and no separated Pd metal particles are seen. Particle size ranges from 30-40 nm. Details are given in the manuscript text on page 5 and 6.
Fig. S3 XRD pattern of CeO$_2$.

Fig. S4 XRD pattern of Ce$_{0.98}$Pd$_{0.02}$O$_{2-\delta}$ which does not show any peak related to Pd metal and PdO.