**Fig. ESI1:** Temperature dependence of the electrical resistance of the micro-heater employed to determine the TCR. A linear relationship between resistance and temperature is measured.

\[
\frac{R}{R_{ref}} = 1 + 1.3 \times 10^{-7} (T - T_{ref})^2
\]

- \( \chi^2 = 0.9996 \)
- STD = 6.7 \times 10^{-6}

**Fig. ESI2:** Distribution of temperature in steady-state when a power of 6.5 W is applied to the thin film heater and the micro-reformer is under vacuum (i.e. without fuel flowing). The holey structure reaches a homogeneous temperature of 915 °C, whereas a temperature of 504 °C is obtained in the bulk frame.