Supplementary information

Sulphur tolerance of Au-modified Ni/GDC during catalytic methane steam reforming

F.M. Sapountzi[1], C. Zhao[1], A. Boréave[1], L. Retailleau-Mevel[1], D. Niakolas[2], C. Neofytides[2], P. Vernoux[1,*]

[1] Université de Lyon, Institut de Recherches sur la Catalyse et l'Environnement de Lyon, UMR 5256, CNRS, Université Claude Bernard Lyon 1, 2 avenue A. Einstein, 69626 Villeurbanne, France

[2]Foundation for Research and Technology, Institute of Chemical Engineering Sciences (FORTH/ICE-HT), Rion Patras, GR 26405, Greece

**corresponding author:philippe.vernoux@ircelyon.univ-lyon1.fr*

Table 1S. The binding energies of the peaks corresponding to Ce3d5/2, Ni2p3/2 and Gd4d, Au4f7/2

Catalysts	Reduction	Ce3d5/2 / eV	Ni2p3/2 / eV	Gd4d / eV	Au4f7/2 / eV
NiO/GDC	Non reduced	881.5	853.3	140.9	
Ni/GDC	800 °C	881.6	854.7	140.0	
Ni/GDC-1100	800 °C	881.7	855.2	140.3	
Au-NiO/GDC-1100	Non reduced	881.5	853.6	141.7	84.0
Au-Ni/GDC-600	800 °C	881.6	855.5	140.3	83.4
Au-Ni/GDC-1100	800 °C	881.7	855.5	140.1	83.6

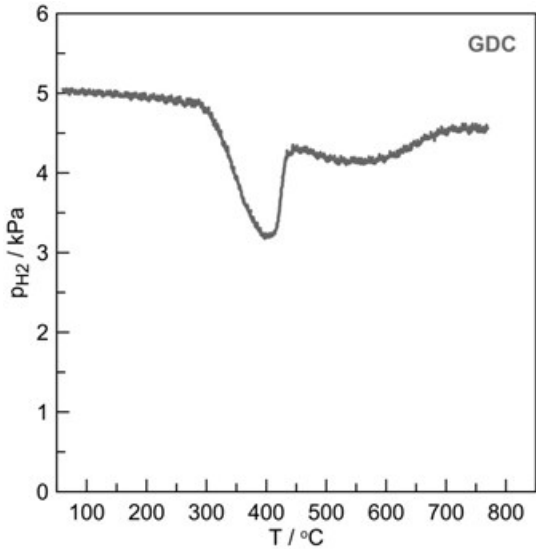

Figure 1S. Hydrogen concentration profile as a function of temperature during TPR experiment on GDC.

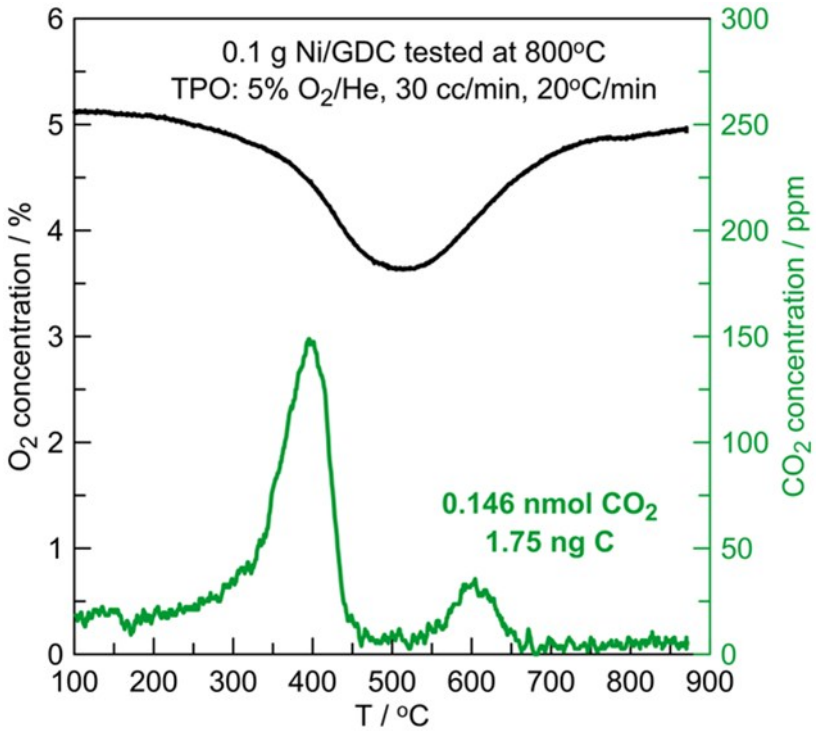

Figure 2S. Consumption of oxygen and production of CO_2 as a function of temperature during TPO experiment on Ni/GDC previously tested for methane steam reforming at 800°C.

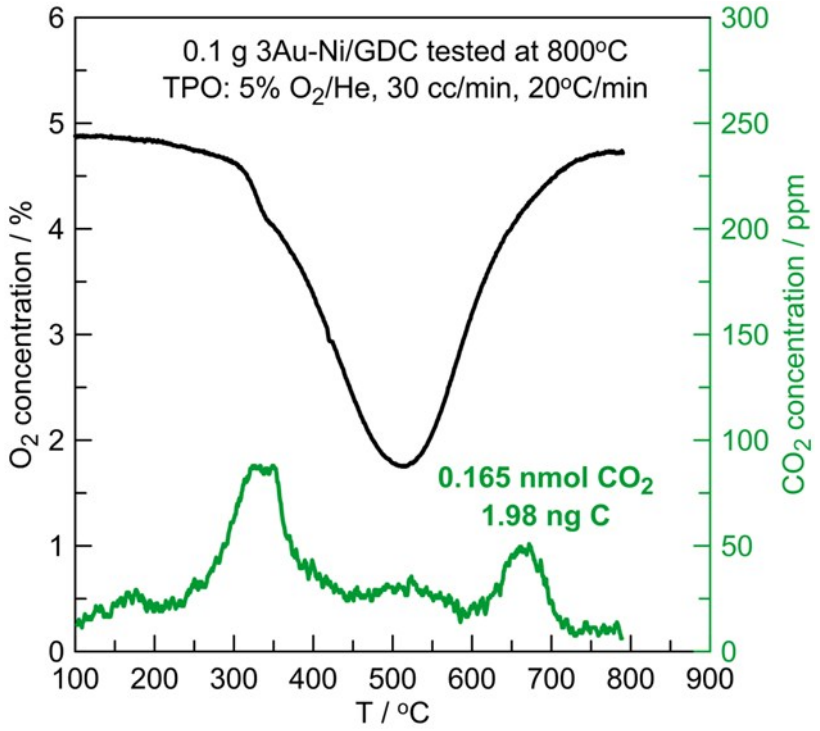

Figure 3S. Consumption of oxygen and production of CO_2 as a function of temperature during TPO experiment on Ni-Au/GDC previously tested for methane steam reforming at 800°C.