Supporting information
to
A *quasi in situ* TEM grid reactor for decoupling catalytic gas phase reactions and analysis

Liudmyla Masliuk[1,‡], Manfred Swoboda[1], Gerardo Algara-Siller[1], Robert Schlögl[1,2], Thomas Lunkenbein,[1,‡,*]

[1]Department of Inorganic Chemistry, Fritz-Haber-Institut der Max-Planck-Gesellschaft, Berlin, Germany

[2]Max-Planck-Institute of Chemical Energy Conversion, Mülheim, Germany

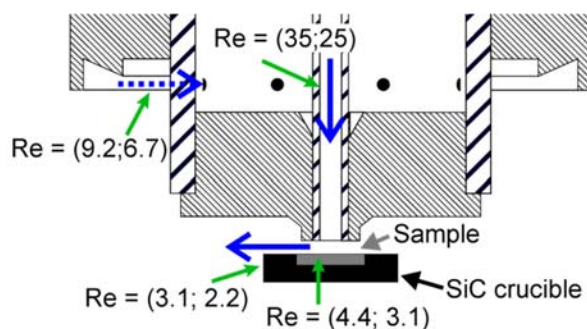*E-mail: lunkenbein@fhi-berlin.mpg.de

Figure S1. Schematic drawing of the calculations of the Reynolds number for the area in close vicinity of the sample (see also Figure 2) using the following assumptions: flow=20 ml/min; p=1bar; medium: air. Reynolds number is determined as $R_e = {vL}/{v}$, where v is a flow rate, L is a characteristic length and v is a kinematic viscosity. Here, in the range from 2 to 35 a laminar flow can be expected. The first and second values of a specific spot, which are given in brackets, correspond to 25°C and 200°C respectively.
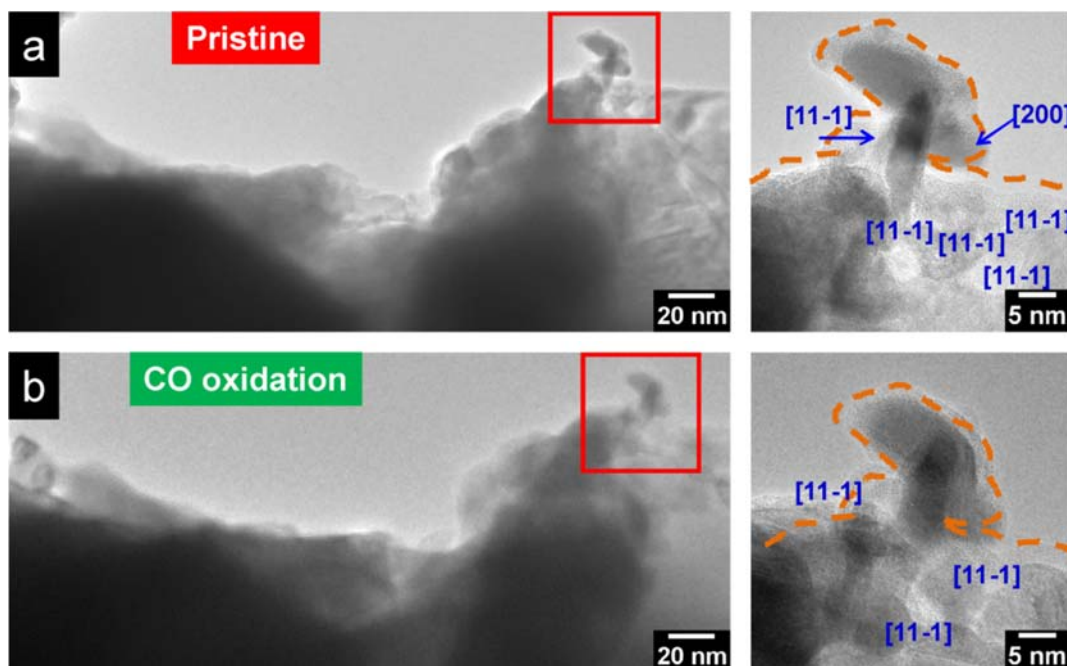
Figure S2. Medium (left) and high resolution (right) identical location images of the polycrystalline platinum foil before (a) and after CO oxidation (b) (see Figure 4) that indicate the occurrence of the structural changes. Conditions: N_2: 13.62 ml/min, O_2: 1.15 ml/min, CO: 0.23 ml/min, heating rate: 10°C/min, cooling rate: 2°C/min.
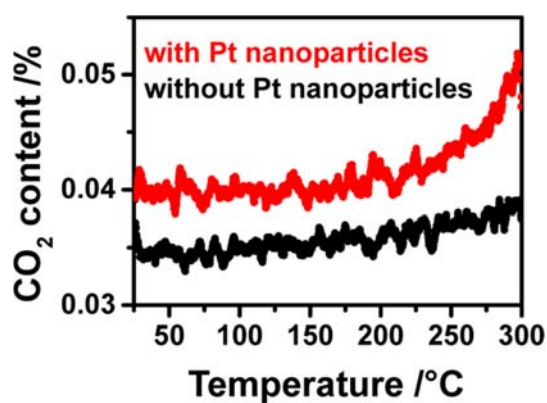

Figure S3. CO_2 content during CO oxidation reaction in the presence (red) and in the absence (black) of Pt nanoparticles corresponding to Figure 6a-c. Conditions: $CO:O_2:N_2$=2:1:60, heating rate: 10°C/min, flow: 15 ml/min. Low CO_2 content during the catalytic reaction indicates low catalytic conversion.