Supporting Information

Spatiotemporal insights into forced dynamic reactor operation for fast light-off of Pd-based methane oxidation catalysts

Supporting Information

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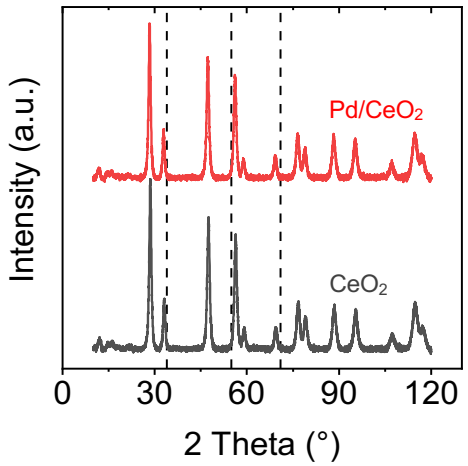

Fig. S1: Powder XRD of the Pd/CeO_2 catalyst (red) and the support material CeO_2 (black). Dashed lines indicate the position of potential reflexes caused by PdO-species.

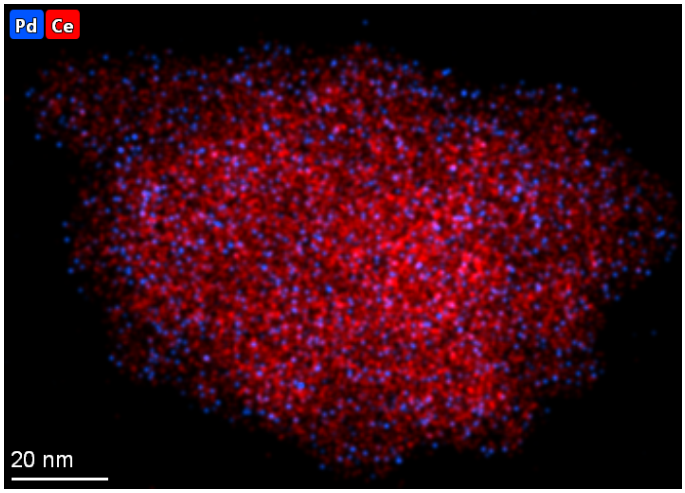

Fig S2: STEM EDXS image of the Pd/CeO_2 catalyst.

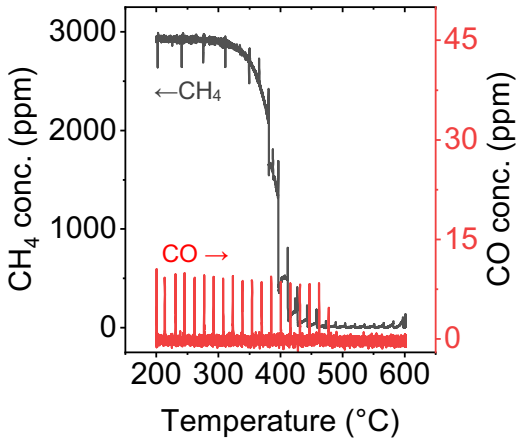

Fig. S3: CH_4 (black) and CO (red) concentration profile during a light-off measurement while SRPs are applied. Operation at a GHSV of 20 000 h^{-1} in 3200 ppm CH_4, 10 vol.-% O_2, 10 vol.-% H_2O and balance N_2.

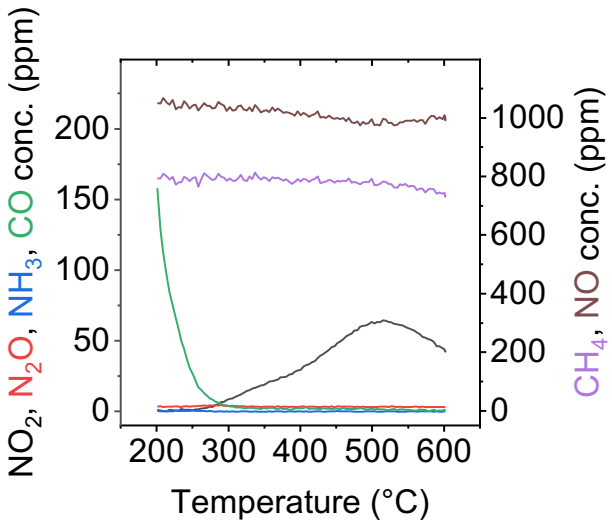

Fig. S4: Concentration of different species during the light-off measurement in simulated exhaust gas in static mode; operation at a GHSV of 60 000 h^{-1} in the lean gas composition listed in Tab. 2 in the main manuscript.

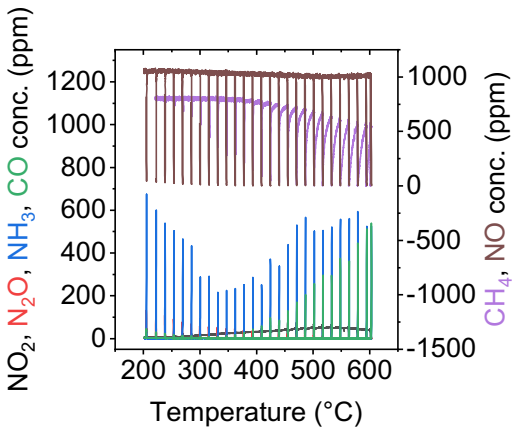

Fig. S5: Concentration of different species during the light-off measurement in simulated exhaust gas in dynamic operation (SRP mode); operation at a GHSV of 60 000 h^{-1} in the gas compositions listed in Tab. 2 in the main manuscript.

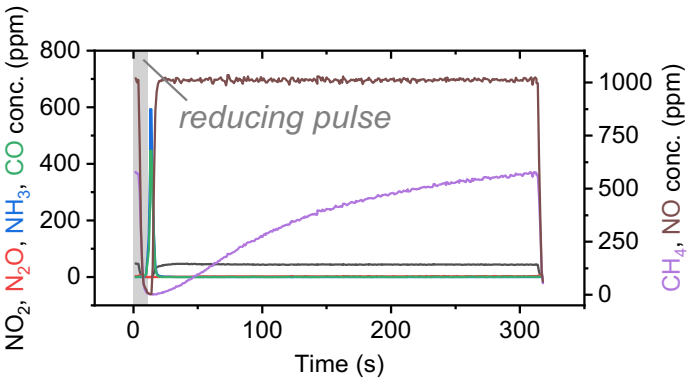

Fig. S6: Temporal evolution of the species concentration after applying a short reducing pulse (SRP) at time = 0 s for 10 s during a light-off test in a simulated exhaust gas composition in SRP mode (c.f. Fig. S5) between 577 °C and 592 °C.