Supporting Information

Elucidating Active CO-Au Species on Au/CeO_2(111): A Combined Modulation Excitation DRIFTS and Density Functional Theory Study

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ME-DRIFTS

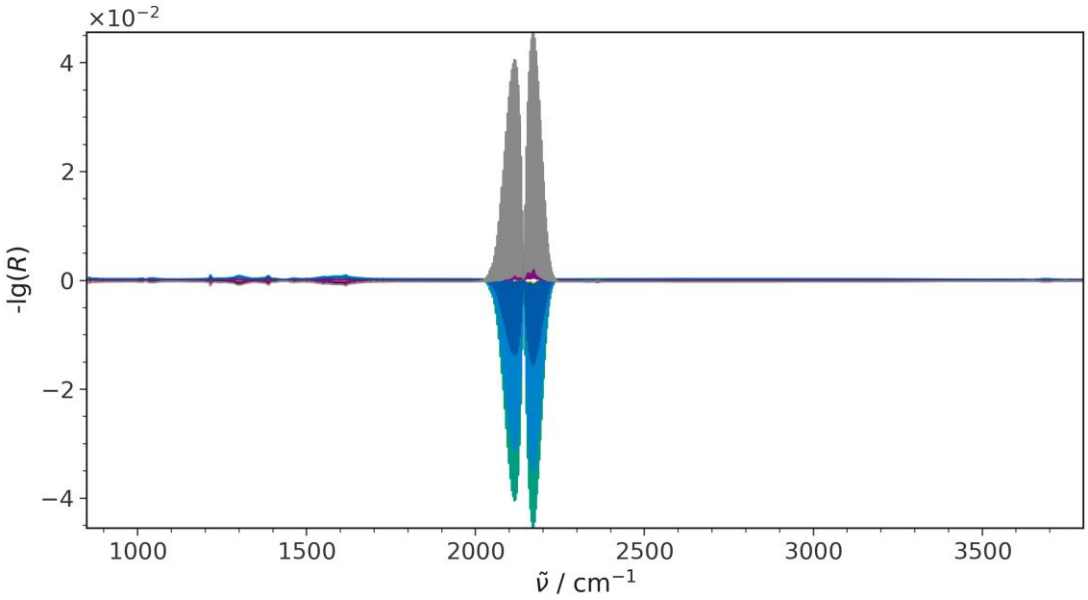

Fig. S1: PSD spectra of the entire spectral range of CeO_2 sheets.

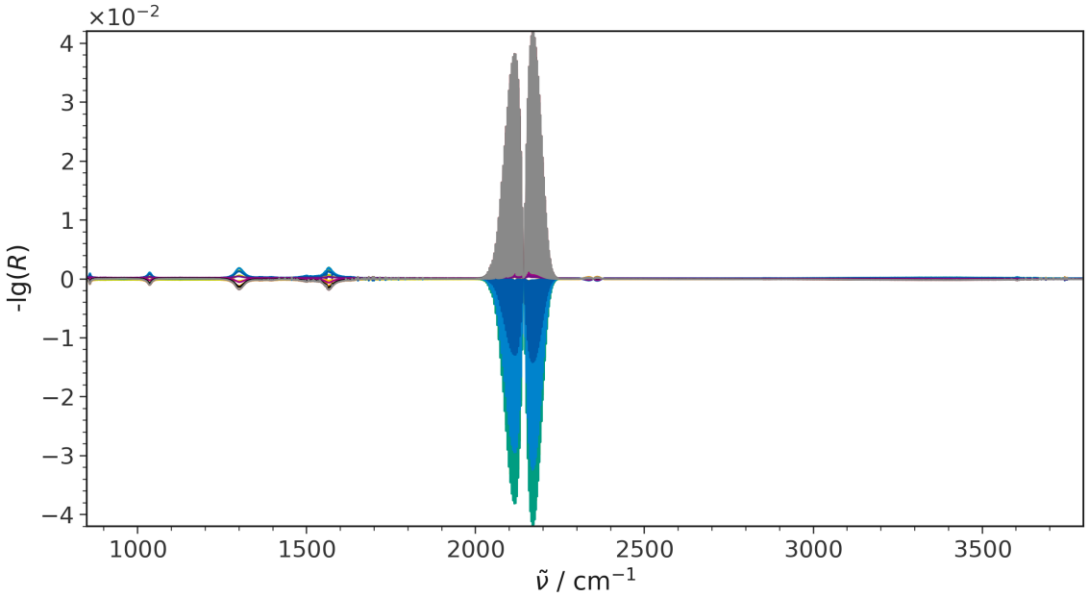

Fig. S2: PSD spectra of the entire spectral range of CeO_2 polyhedra.

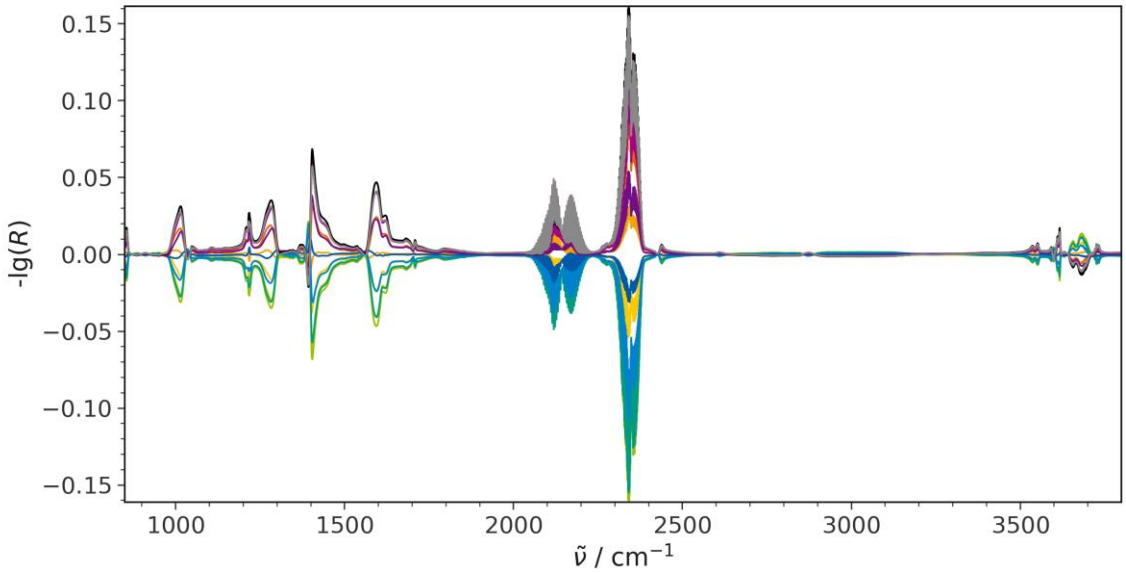

Fig. S3: PSD spectra of the entire spectral range of Au/CeO_2 sheets.

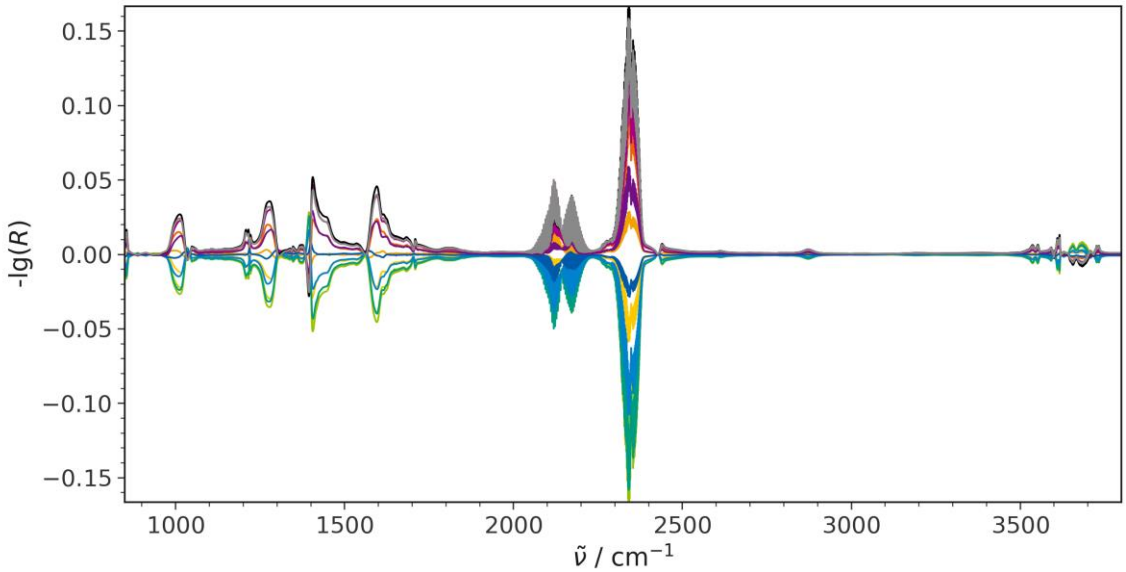

Fig. S4: PSD spectra of the entire spectral range of Au/CeO_2 polyhedra.

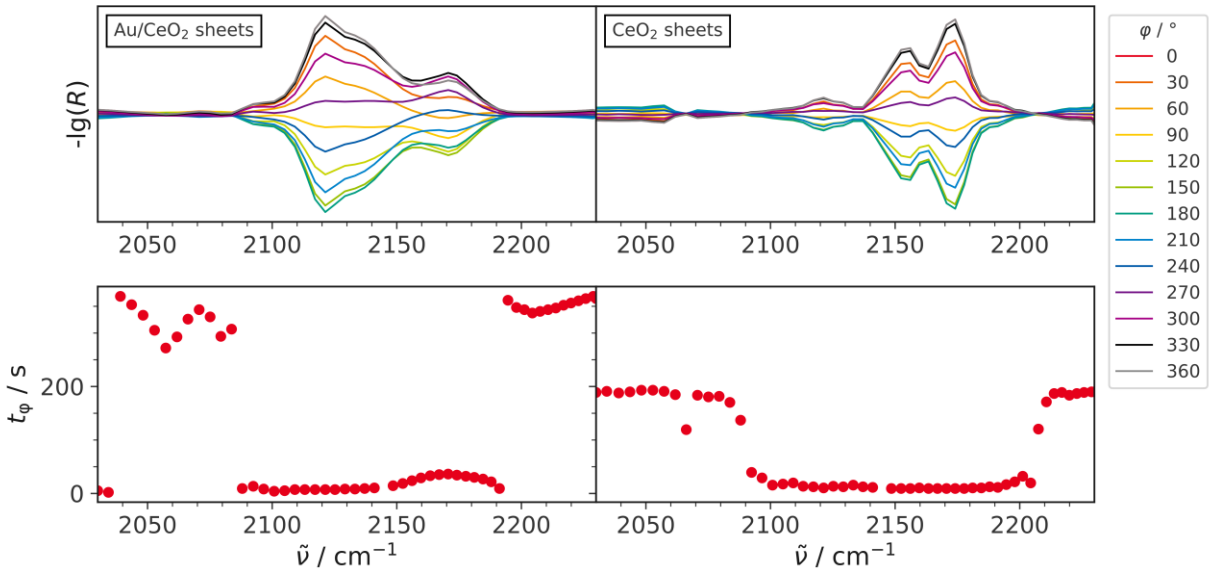

Fig. S5: Top: PSD spectra of the CO region of Au/CeO_2 (left) and CeO_2 (right) sheets after removal of gas-phase contributions. **Bottom:** Corresponding time shifts of individual spectral positions.

Table S1: Observed signals and their time values for gold-loaded ceria polyhedra. The same experiment has been executed three times and the maximum deviation Δ_{max} for each signal is given in s.

$\tilde{\nu}$/ cm^{-1}	t(Au/CeO$_2$ I) / s	t(Au/CeO$_2$ II) / s	t(Au/CeO$_2$ III) / s	Δ_{max} / s
2092	18	21	21	3
2122	8	9	9	1
2133	9	11	11	2
2156	26	27	27	1
2171	42	43	42	1
2359	21	23	23	2

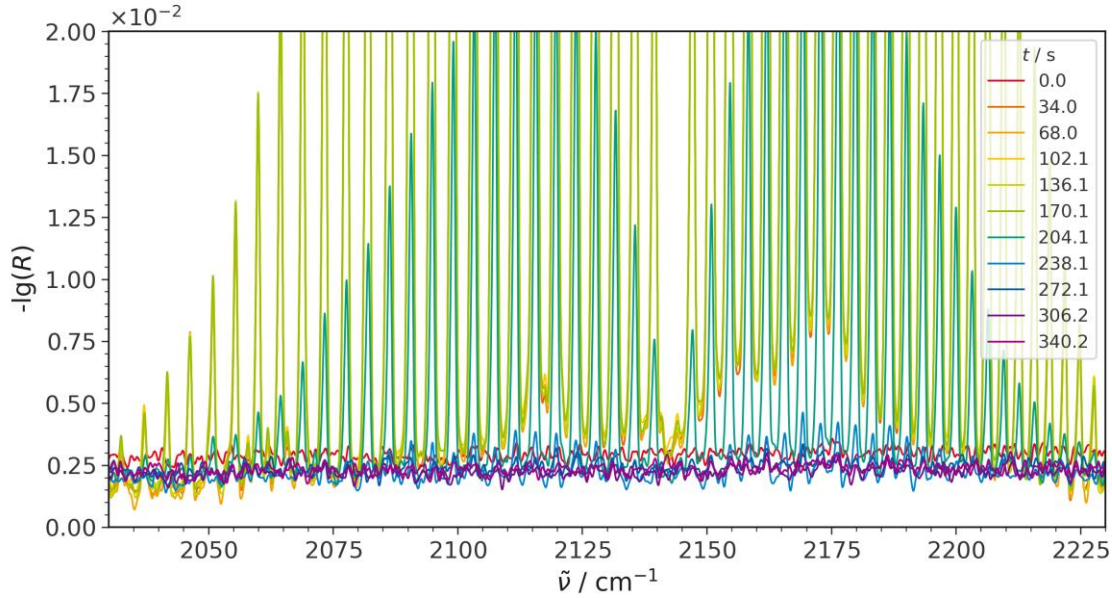

Fig. S6: Time-resolved spectra of the CO region of CeO_2 sheets.

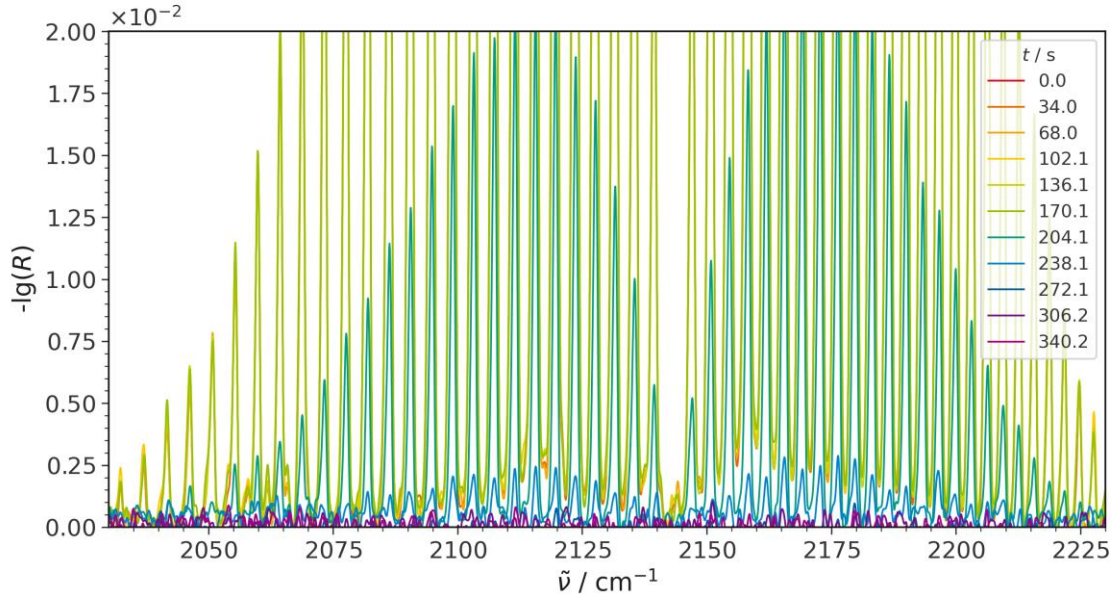

Fig. S7: Time-resolved spectra of the CO region of Au/CeO_2 polyhedra.

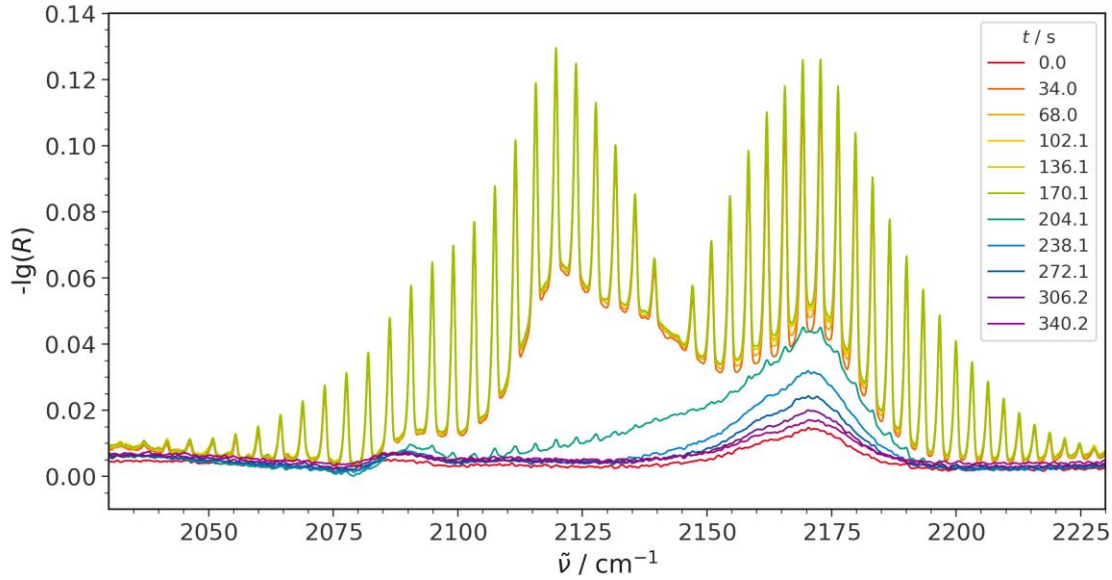

Fig. S8: Time-resolved spectra of the CO region of Au/CeO_2 sheets.

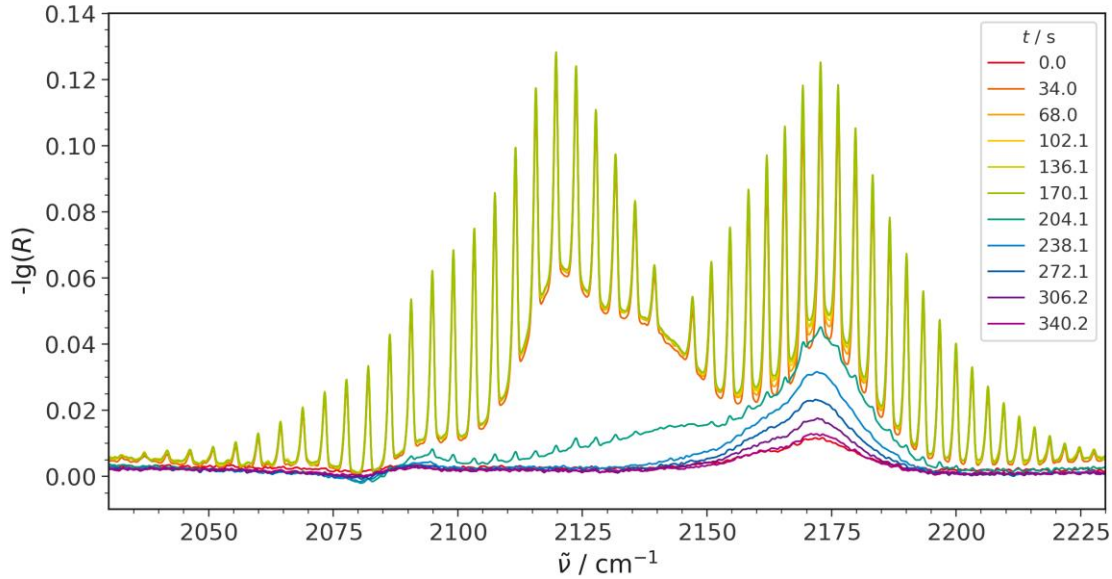

Fig. S9: Time-resolved spectra of the CO region of Au/CeO_2 polyhedra.