

Supplement to: "Adsorption and Decomposition of Ethene and Propene on Co(0001): the Surface Chemistry of Fischer-Tropsch Chain Growth Intermediates"

C.J. Weststrate*, I.M. Ciobîcă, J. van de Loosdrecht, J.W. Niemantsverdriet

c.j.weststrate@syngaschem.com

Uptake experiments: XPS spectra

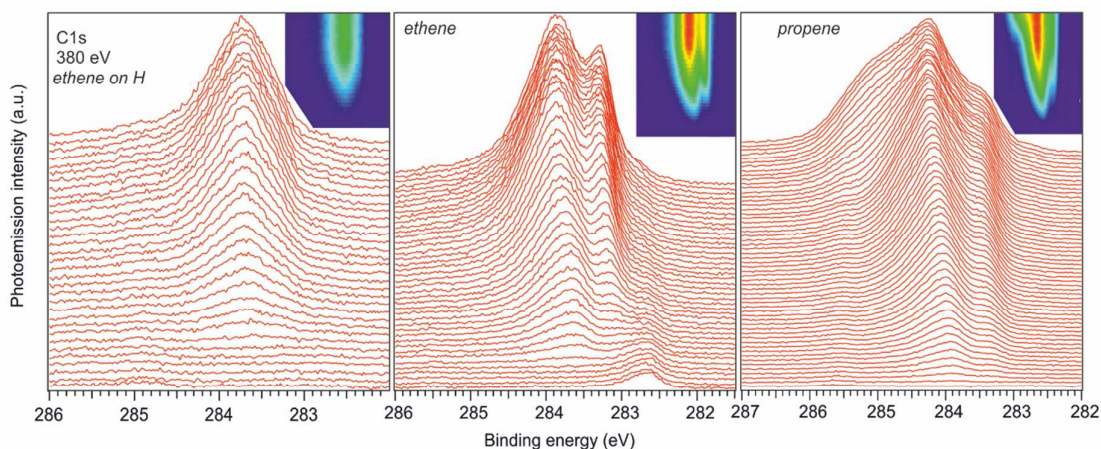


Figure S1: Development of the C1s spectral region during the uptake experiments described in the main article.

Figure S1 shows a series of C1s spectra obtained during exposure of the Co(0001) surface to ethene (center) or propene (right), as well as during exposure of the 0.5 ML H_{ad} -covered surface to ethene (left). A top view of the spectra is included as well. Note that for the ethene experiment the small peak at 282.7 eV is due to a small carbon contamination.

Heating of propene-saturated Co(0001)

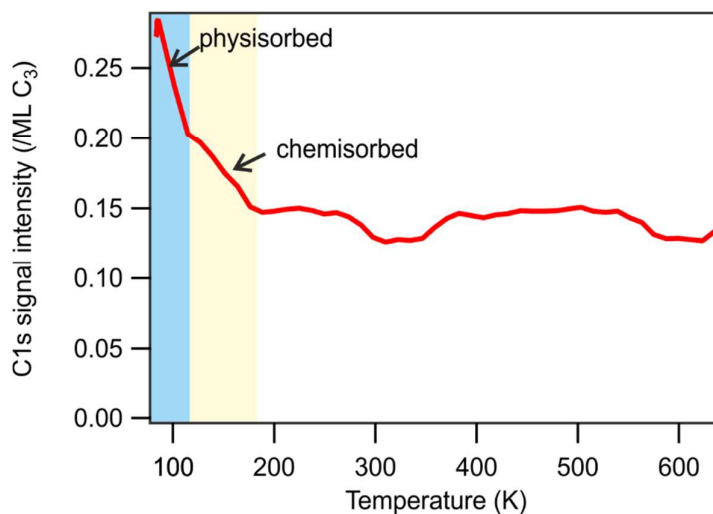


Figure S2: Normalized C1s signal intensity (in propene ML equivalent) during heating of a saturated propene layer, corresponding to the data shown in figure 9(a) in the manuscript.

Figure S2 shows how the C1s signal intensity changes when the saturated propene surface is heated. The first decrease, around 100 K, is attributed to the desorption of a 2nd physisorbed layer and coincides with a desorption peak of propene at this temperature in the mass spectrometer data shown in figure 8(a). The 2nd decrease of the signal, around 150 K, is attributed to the desorption of chemisorbed propene.