Electronic Supplementary Material (ESI) for Catalysis Science & Technology.

Infrared Spectroscopic Study of Dimethyl Ether Carbonylation Catalysed by TiO_2-Supported Rhodium Carbonyls.

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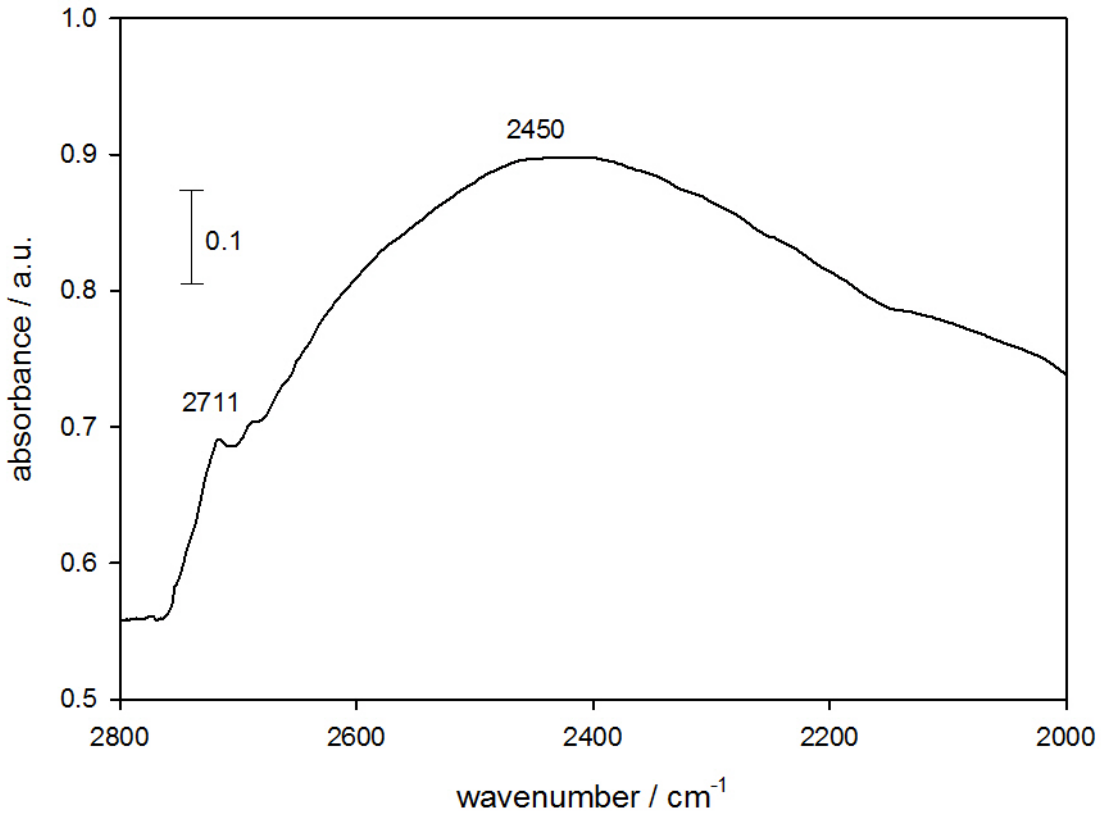

Figure 1S. IR spectra at the ν_{OD} region characterizing the bare TiO_2 support as it was treated in a flowing mixture of He and D_2O vapours at room temperature for 120 min.

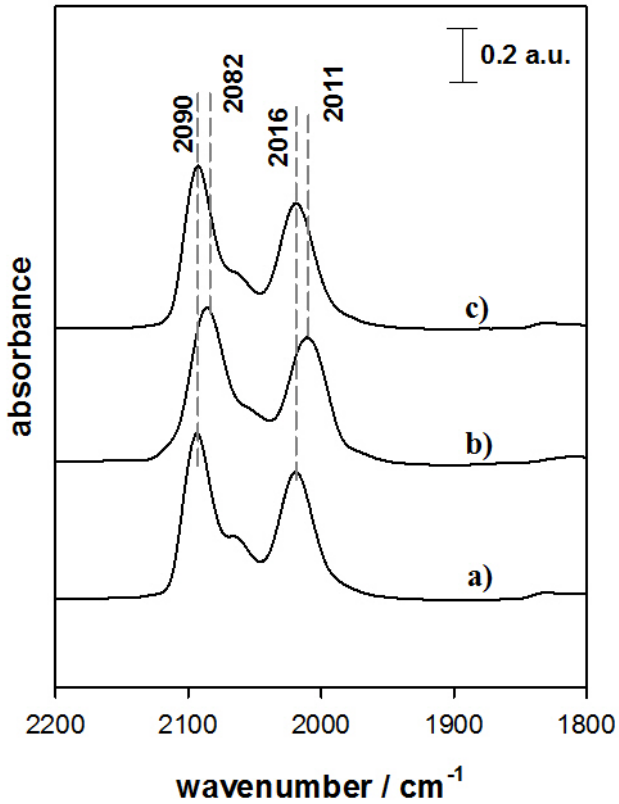

Figure 2S. ν_{CO} spectra characterizing the TiO_2-supported Rh sample as it was treated (a) in flowing He, (b) in a flowing mixture of DME and He and (c) in flowing He after DME adsorption at room temperature.

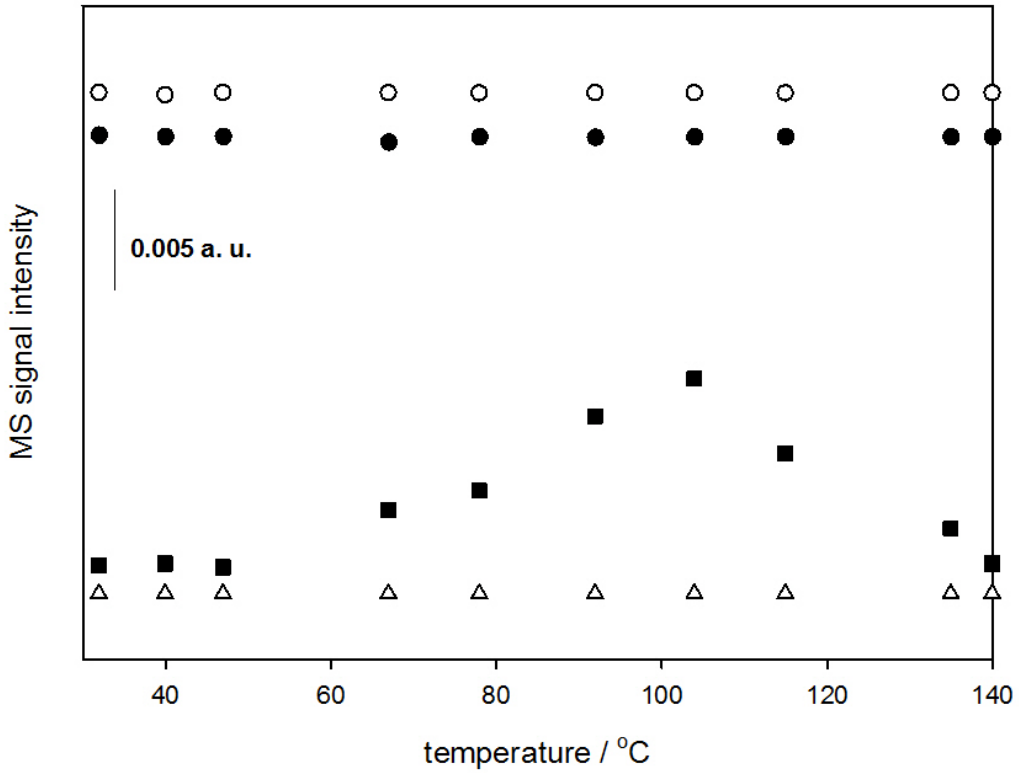

Figure 3S. Mass spectral signals of the effluent gases from flow reactor DRIFT/cell as the bare TiO_2 was exposed to the flowing mixture of CO/DME/CH_3I/He at increasing temperature. (●) CO (*m*/*e* =28), (○) DME (*m*/*e* = 46), (Δ) methyl acetate (*m*/*e* = 74) and (■) water.

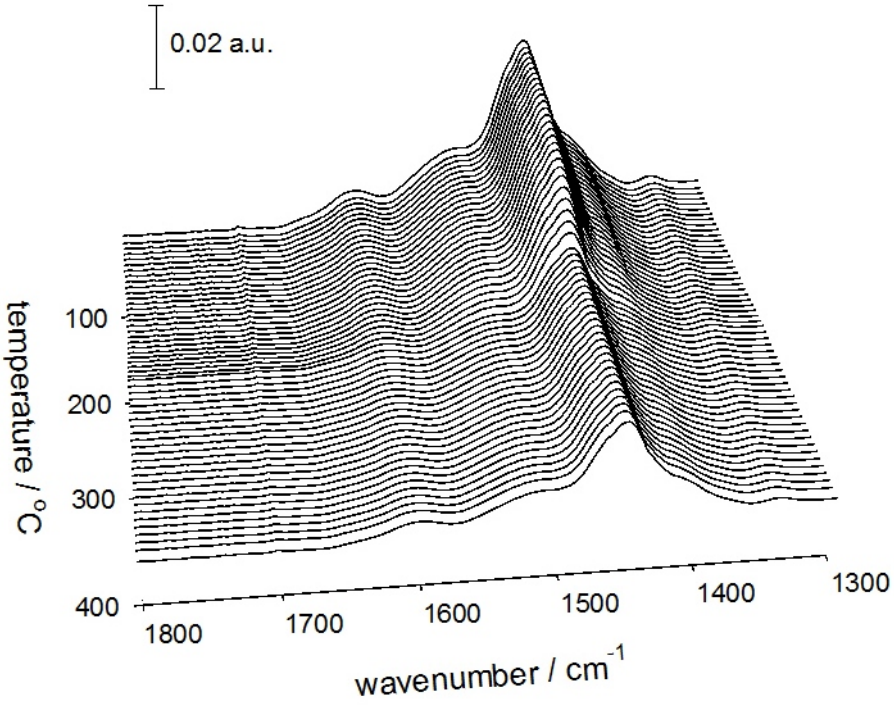

Figure 4S. IR subtraction spectra as a function of temperature characterizing the bare TiO_2 as it was treated in the flowing reactive mixture of DME/CO/CH_3I/He.