

Supporting Information to

Insights into structure and dynamics of (Mn,Fe)O_x-promoted Rh nanoparticles

Maria Dimitrakopoulou,^a Xing Huang,^a Jutta Kröhnert,^a Detre Teschner,^{a,b}
Sebastian Praetz,^c Christopher Schlesiger,^c Wolfgang Malzer,^c
Christiane Janke,^d Ekkehard Schwab,^d Frank Rosowski,^{d,e} Harry Kaiser,^f Stephan Schunk,^f Robert Schlögl,^{a,b}
Annette Trunschke^{*a}

^aFritz-Haber-Institut der Max-Planck-Gesellschaft, Faradayweg 4-6, 14195 Berlin, Germany

^bMax Planck Institute for Chemical Energy Conversion, Stiftstr. 34-36, 45470 Mülheim, Germany

^cTechnical University of Berlin, Institute of Optics and Atomic Physics, Hardenbergstraße 36, D-10587 Berlin, Germany

^dBASF SE, Process Research and Chemical Engineering, Heterogeneous Catalysis, Carl-Bosch-Straße 38, 67056, Ludwigshafen, Germany

^eBasCat, UniCat BASF JointLab, Technische Universität Berlin, Hardenbergstraße 36, 10623 Berlin, Germany

^fhte GmbH, Kurpfalzring 104, 69123 Heidelberg, Germany

* Correspondence author: trunschke@fhi-berlin.mpg.de.

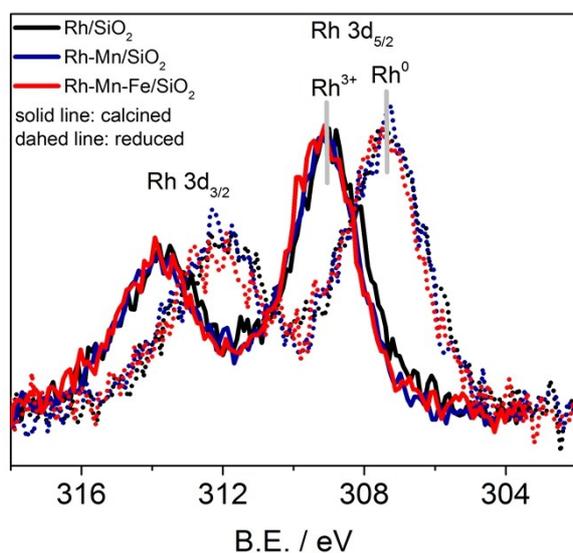


Figure S 1. Rh 3d XPS spectra of the catalysts as indicated in the legend after calcination (solid lines) and after reduction in hydrogen at 623 K (dotted lines).

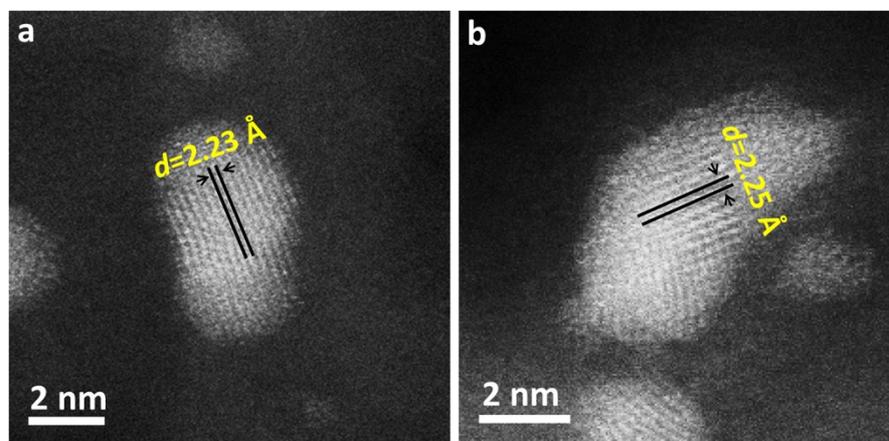


Figure S2. HAADF-STEM images of (a) reduced Rh/SiO₂ and (b) reduced Rh-Mn-Fe/SiO₂.

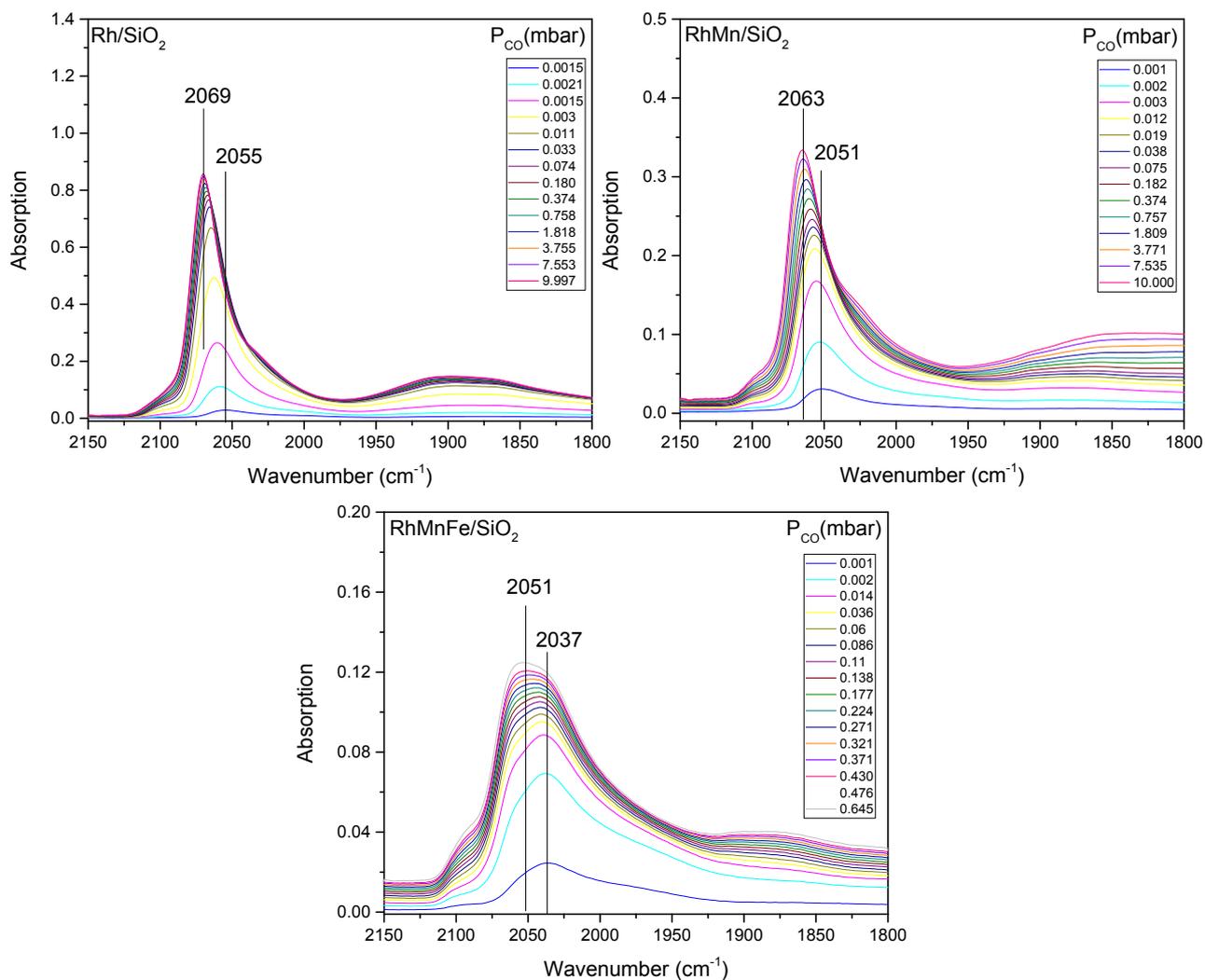


Figure S3. FTIR spectra of adsorbed CO on Rh/SiO₂, Rh-Mn/SiO₂ and Rh-Mn-Fe/SiO₂, recorded at beam temperature with increasing CO pressure.

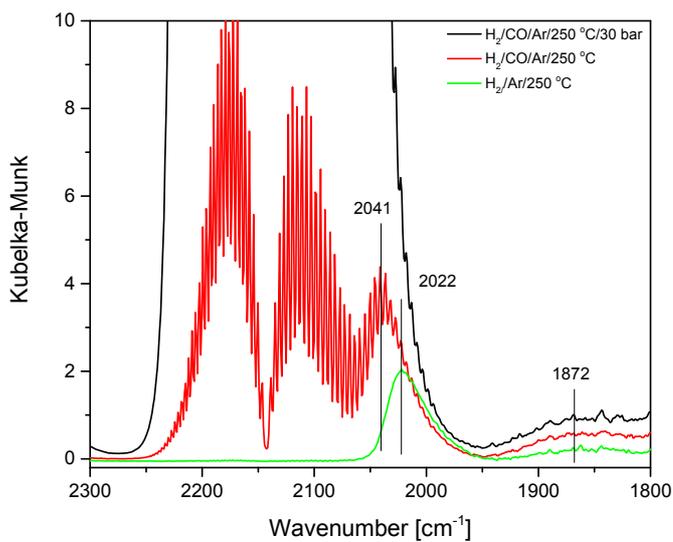


Figure S4. DRIFTS spectra of the Rh-Mn-Fe/SiO₂ catalyst. The spectra were taken during exposure to H₂/CO/Ar (67.5%:22.5%:10%) at 523 K and 30 bar (black curve), H₂/CO/Ar at 523 K (red curve) and H₂/Ar at 523 K.