Supporting Information

Selective hydrogen production from formic acid decomposition over Mo carbides supported on carbon materials

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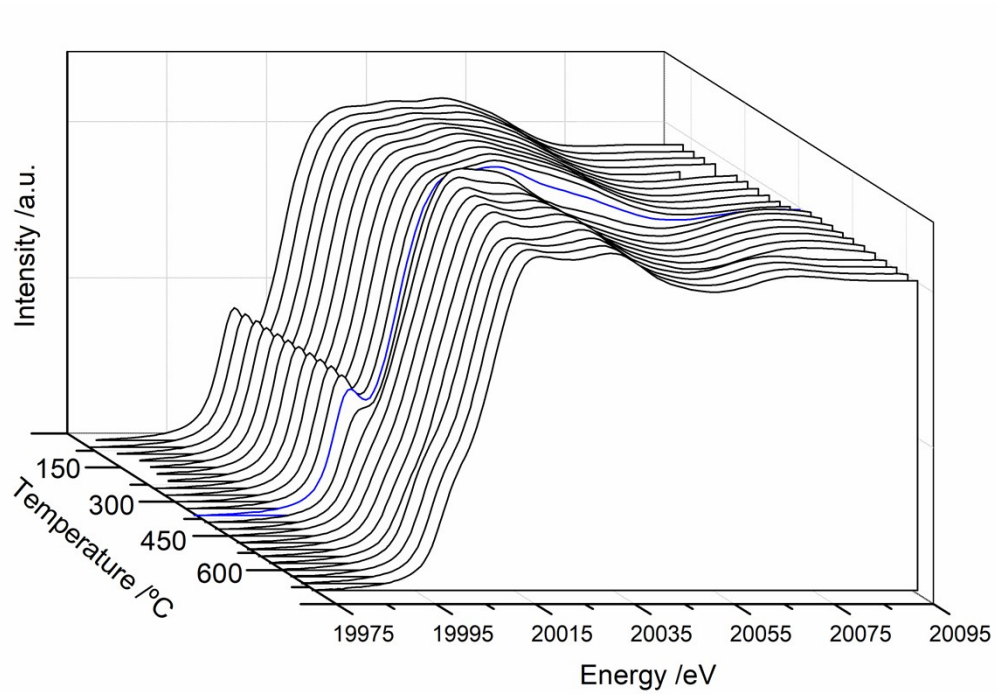

Figure SI1. In situ Mo K-edge XANES spectra obtained during the CH4/H2/He treatment of 10Mo/H400 as a function of temperature.

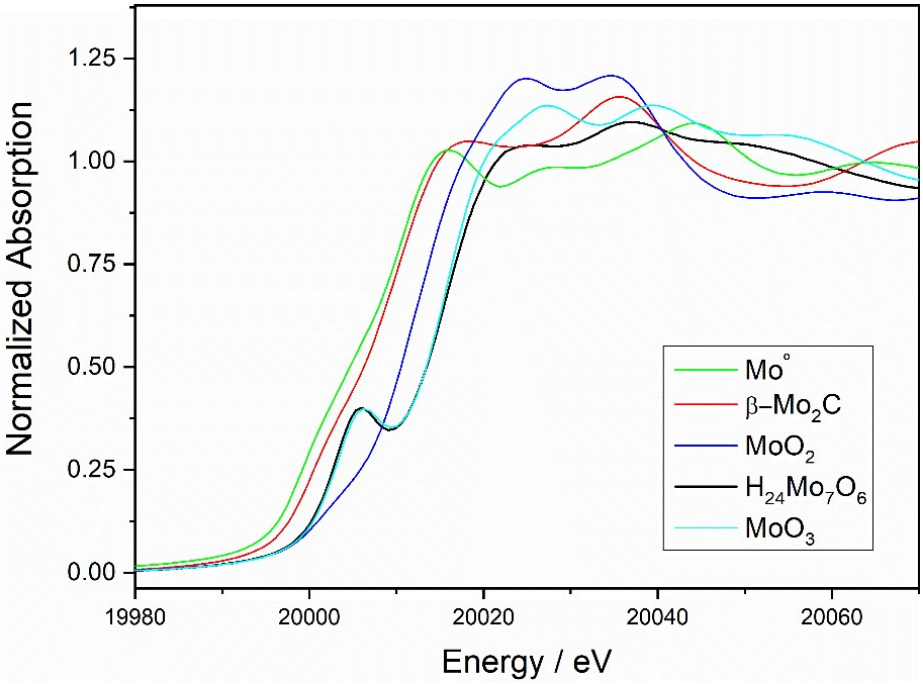

Figure SI2. Mo K-edge XANES spectra of the used references.

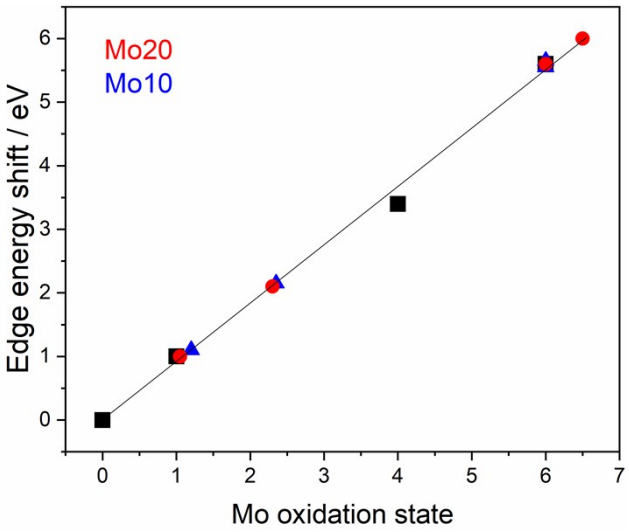

Figure SI3. Correlation plot of the absorption Mo K-edge position and average formal oxidation state for Mo. AHM, MoO_3, β-Mo_2C and Mo foil references (!) were used to obtain the calibration curve. Interpolation of the absorption Mo K-edge energy of the different species observed during the experiments for 10Mo/H400 (7) and 20Mo/H400 (,).

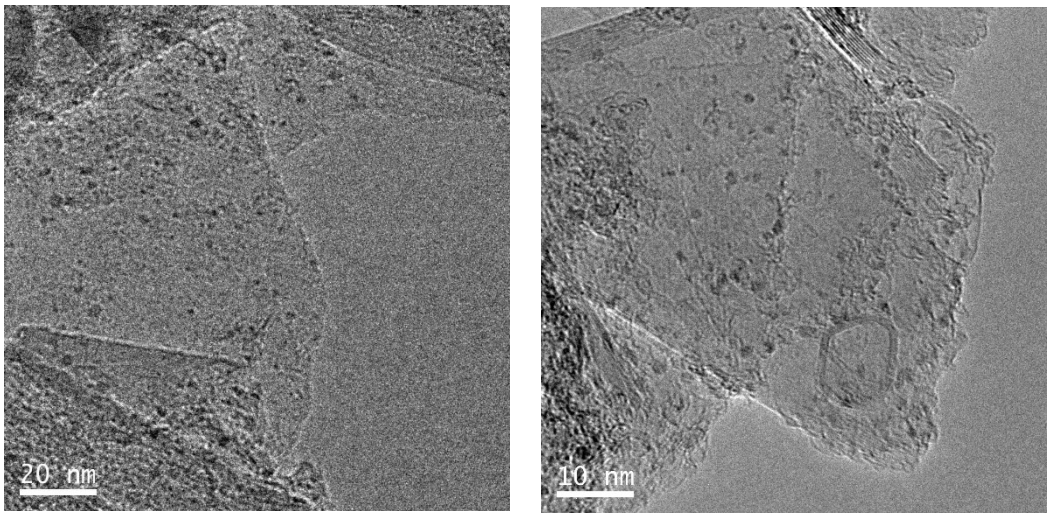

Figure. SI4. Representative 10Mo/H_{400} TEM images

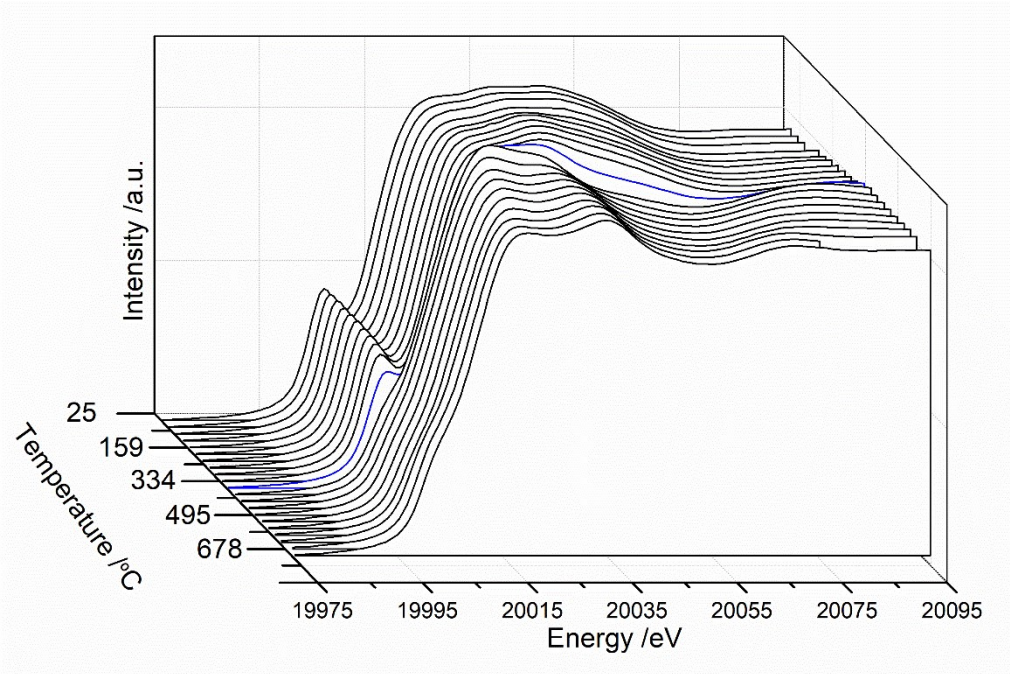

Figure SI5. In situ Mo K-edge XANES spectra obtained during the H2/He treatment of 20Mo/H400 as a function of temperature.

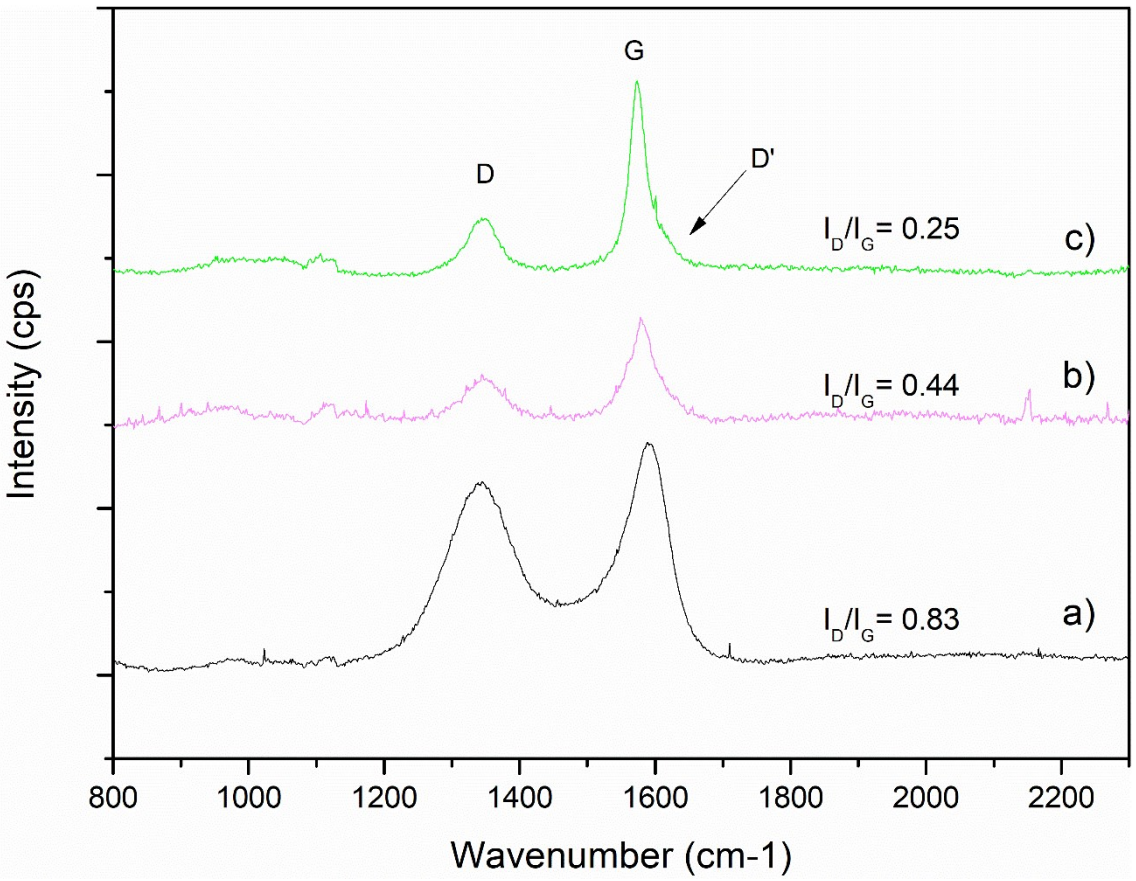

Fig. SI6. Raman spectra of the supports a) AC, b) H400 and c) H200 and their I_D/I_G ratio.

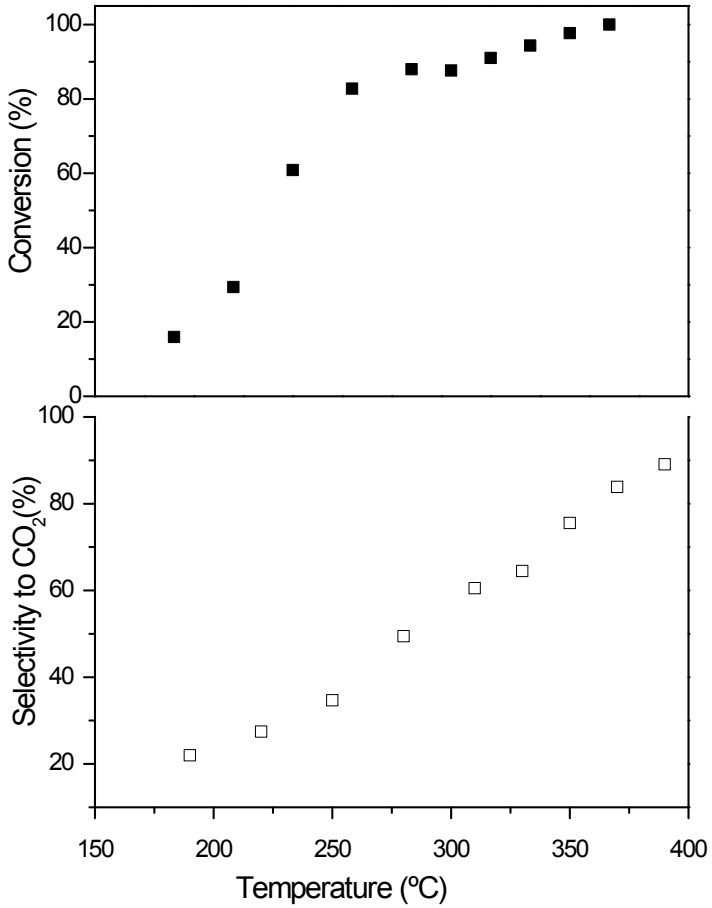

Fig. SI7. Conversion and Selectivity to CO_2 vs temperature on formic acid decomposition for MoO_x/H400.