Ceria Cleaned with O2 at High Temperatures and Exposed to CO at 1 Atm

Date: 2023-02-15
Tags: DRIFTS | CO | CeO2 powder | High temperature | Cleaned
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Goal :

To repeat earlier experiments that were cleaned in O2 prior to CO exposure, however, this time the pure CO is used.

Procedure :

New sample, heated overnight 225 °C

LC0040.0 - in Ar atmosphere
Flush for 5 additional minutes to remove residual CO gas
LC0040.0000-0002

LC0040.1 - in O_2 atmosphere

Heat sample to 1000 °C, 2 hours, start time 09:36, reached temp (764 °C) at 09:45
Cool down start at 11:45

Final temp 24 °C
Second background used --> Use background from before heating to stay consistent with 20230215

Switch off oxygen and flow through CO - LC0040.0003-502

LC0040.0503-612, 256 scans

water trap warm, change to Argon, 50 ml/min

LC0040.0613 at 256 scans

Results :

Data collected was the same as collected earlier when the ceria sample is cleaned in O2, the experimental procedure is reproducible and now a subtraction method is required.

(Data saved - DRIFTS PC; Folder – Data --> L Caulfield; File name - 20230215_CeO2-HightT_O2_pressure_1bar)

Unique eLabID: 20230704-d91787b5d698d920488621646365d1bf8f7b079f
Link: https://ifgselabftw.ifg.kit.edu/experiments.php?mode=view&id=2269