KBr and Ceria Measurmetns for Subtraction (Batch)

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Tags: Reference DRIFTS CO KBr
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Goal :

To measure both CeO2 and KBr for several pressures under batch conditions for subtraction.

Procedure :

Cleaned KBr overnight in overnight 225 °C
Background is run before heating of KBr in DRIFTS - LC0045.0

Sample is then heated to 225 °C inside reaction crucible for 2 hours in O2 atmosphere
Heating started at - 09:15
Cooling started at - 11:15 (35 °C)

Additional background is run after heating and will be used for the KBr section of the experiment LC045.1

KBr rt measurements in 0.5 bar of CO:
LC0045.0000-0099

KBr rt measurements in 1.0 bar of CO:
LC0045.0100-0199

Heat KBr sample to 125 °C

KBr 100 °C measurements in 1.0 bar of CO:
LC0045.0200-0299

Cool KBr sample down to rt (35 °C)

KBr rt measurements after heating - 1.0 bar of CO:
LC0045.0300-0399

KBr rt measurements after heating - 0.5 bar of CO:
LC0045.0400-0499

Switch samples to CeO_2
CeO2 treated in oven overnight at 225 °C
Initial background is run in O2 atmosphere LC0045.2

CeO2 sample is heated to 750 °C for 2 hours in an O_2 atmosphere

Heating started at - 13:00
Heating finished at - 15:00

Additional background is run after heating and will be used for the CeO_2 section of the experiment LC0045.3

CeO2 rt measurements in 0.5 bar of CO:
LC0045.0500-0599

CeO2 rt measurements in 1.0 bar of CO:
LC0045.0600-0699

Heat CeO2 sample to 125 °C

CeO2 100 °C measurements in 1.0 bar of CO:
LC0045.0700-0799

Cool CeO2 sample down to rt

CeO2 rt measurements after heating - 1.0 bar of CO:
LC0045.0800-0899

CeO2 rt measurements after heating - 0.5 bar of CO:
LC0045.0900-0999

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determination of reduced band -> 2176 or 2167 -> should increase during heating in CO 125 °C, 1 bar, batch, recool everything.
LC0045.1000-1499

LC0045.1500 - next day 256 scans
LC0045.1501 - rt

Results :

Data works well for subtraction.

Unique eLabID: 20230704-a75aa10dbe2a190bb1a7a7212b6951cc9f41e177
Link: https://ifgselabftw.ifg.kit.edu/experiments.php?mode=view&id=2278