Reduction of Ceria at Room Temperature and 150 °C in a CO Atmosphere

Date: 2023-04-14
Tags: DRIFTS | CO | room temperature | CeO2 powder | High temperature
Created by: Lachlan Caulfield

Goal :

To see the effect CO has on the bands when going from room temperature to 150 °C in a CO atmosphere.

Procedure :

Background run in O_2 at room temperature before heating - LC0064.0

Remove excess CO
LC0064.1-2

Heat sample in O_2 for 2 hours 550 °C (Start 09:30)
Cool down to 150 °C

Run background at 150 °C - LC0064.3
Introduce CO - In flow
LC0064.0000-0705

Change samples

Before heating in O_2 background - LC0065.0
Heat for 2 hours in O_2
Cool to rt before CO
Measure a background after heating in O2 - LC0065.4
LC0065.0000-0300

switch to 2ml/min CO

Results :

Data was collected for both room temperature and 150 °C and can be used for subtraction.

(Data saved - DRIFTS PC; Folder – Data --> L Caulfield; File name - 20231304_CeO2_rt_150)

Unique eLabID: 20230706-e27d5975efc1497393ce043a2805ec29c3ec4ed5
Link: https://ifgselabftw.ifg.kit.edu/experiments.php?mode=view&id=2305