

PaGe_006_ThermalTreatment_MgO-C_BiomassPellets_1000°C

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Tags: MgOC ThermalTreatment

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Category: Processing

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Objective:

- Thermal treatment (hardening and coking) of pressed bar-shaped samples from [PaGe_005_Pressing_MgO-C_BiomassPellets_120MPa](#)

Experimental setup:

- The samples were hardened by a three-step thermal treatment with a maximum temperature of 180 °C in [Device - TR120 Nabertherm Left \(DryingFurnace\)](#) and carbonised in the electrically heated furnace [Device - N 20/14 Nabertherm F12 \(ChamberFurnace\)](#) at 1000 °C for 5 h using a coke bed.

Procedure:

- Put the samples in the drying furnace and run the following hardening procedure: heating up for 20 minutes to 85 °C, holding this temperature for 90 minutes, heating up for 30 minutes to 120 °C, holding this temperature for 120 minutes, and heating up for 150 minutes to 180 °C, holding this temperature for 90 minutes
- Put the hardened bars into a steel retort and embed them in [Material - PetroleumCoke_Grit_0.2-2.0mm_Müco](#)
- Set and start the heating program (coking): heating up from room temperature to 1000 °C with a heating rate of 1.67 K/min, 5 hours dwelling time, free cooling to room temperature
- Take the samples out of the coke bed by using a coke vacuum cleaner

Results:

- Coked samples for further characterisation

elabExperiment Metadata - Contextualize data (storage structure, formats, and how the stored data correspond to experimental activities)

Format

Format of the generated raw, (processing) meta, processed and result data

none

Coverage

Fraction/part of the experiment contained in the generated raw and result data

none

Description

Brief description to understand and navigate the generated raw, processed, meta and result data of the conducted experiment

Thermal treatment of pressed raw materials for further characterisation

Contributors

Persons who contributed to data generation (forename name; forename name; etc.)

Patrick Gehre; Magzhan Kapessov

Linked experiments

- [PaGe_005_Pressing_MgO-C_BiomassPellets_120MPa](#)

Processing - [XiWu_001_Mixing_C-SiC_DV-0](#)

Processing - [XiWu_014_Pressing_C-SiC_DV-0-1T](#)

Processing - [XiWu_016_Drying_C-SiC_DV-0](#)

Processing - [XiWu_017_Pressing_C-SiC_DV-0-40T](#)

Processing - [XiWu_002_Mixing_C-SiC_XW-0](#)

Processing - [XiWu_003_Mixing_C-SiC_XW-P1](#)

Processing - [XiWu_015_Pressing_C-SiC_DV-0-8T](#)

Processing - [XiWu_018_Coking_C-SiC_DV-0_650°C](#)

Processing - [XiWu_019_Coking_C-SiC_DV-0_XW-0_950°C](#)

Processing - [XiWu_004_Mixing_C-SiC_XW-P2](#)

Processing - [XiWu_005_Mixing_C-SiC_XW-P3](#)

Processing - [XiWu_006_Mixing_C-SiC_XW-P4](#)

Processing - [XiWu_007_Mixing_C-SiC_XW-P5](#)

Processing - [XiWu_008_Mixing_C-SiC_XW-P6](#)

Processing - [XiWu_009_Mixing_C-SiC_XW-P7](#)

Processing - [XiWu_010_Mixing_C-SiC_XW-P8](#)

Processing - [XiWu_011_Mixing_C-SiC_XW-P9](#)

Processing - [XiWu_012_Mixing_C-SiC_XW-P10](#)

Processing - [XiWu_013_Mixing_C-SiC_XW-P11](#)

Linked resources

Device - [RV02 Eirich \(IntensiveMixer\)](#)

Device - [LH 15/14 Nabertherm F5b \(ChamberFurnace\)](#)

Device - [LH 15/14 Nabertherm F6b \(ChamberFurnace\)](#)

Device - [HT 04/16 Nabertherm F1 \(HighTemperatureChamberFurnace\)](#)

Device - [N 20/14 Nabertherm F12 \(ChamberFurnace\)](#)

Device - [HT 276/17 Nabertherm FT2 \(HighTemperatureChamberFurnace\)](#)

Device - [TR120 Nabertherm Left \(DryingFurnace\)](#)

Instrument - [RUCKS KV 270 \(UniaxialPress\)](#)

Material - [PetroleumCoke_Grit_0.2-2.0mm_Müco](#)



Unique eLabID: 20260803-e12bcb6337c9a21055df9da3551f71986df94630

Link: <http://elabftw.chemie.tu-freiberg.de/experiments.php?mode=view&id=6249>