

PaGe_019_LightMicroscopy_MgO-C_BiomassPellets

Date: 2026-08-06

Tags: MgOC GRK2802_DFG_461482547

LightMicroscope BioCokeMgOCMSTS

Category: Testing & Analysis

Status: Success

Created by: Patrick Gehre

Team: Institute of Ceramics, Refractories
and Composite Materials

Objective:

- Visual analysis of pressed / thermally treated MgO-C samples with 1.1 wt.-% graphite, wood pellets, or sunflower seed hull pellets.

Experimental setup:

- Pressed samples were obtained from [Processing - PaGe_005_Pressing_MgO-C_BiomassPellets-120MPa](#), whereas thermally treated samples were obtained from [Processing - PaGe_006_ThermalTreatment_MgO-C_BiomassPellets-1000degC](#)
- Light microscope images were taken using the [Instrument - VHX-2000D I Keyence \(DigitalMicroscope\)](#) equipped with the [Tool - VH-Z20R/W I \(ZoomLens\)](#)

Procedure :

1. Position the sample on the object table.
2. Adjust proper settings.
3. Take several pictures at 20-, 50-, 100-, and 200-times magnification.

Results:

- 1600x1200 pictures in JPG format

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

JPG, TIF; The data are stored in four subfolders: 0_Documentation/ (additional documentation) 1_RawData/ (direct experimental output), 2_ProcessedData/ (data derived from raw), and 3_EssentialData/ (features derived from processed). Generation metadata are included in the raw data file.

Coverage

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

The generated raw data covers all resulting JPG images. The files 4795C_x200_1, 4795P_x200_2, 4796C_x200_3, 4796P_x200_3, RefC_x200_2, and RefP_x200_2 were reconstructed to a processed / essential data, saved as TIF.

Description

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

The generated raw data contains the resulting JPG images taken using the VHX-2000D I Keyence (DigitalMicroscope). Selected images were reconstructed to a processed / essential data image, saved as TIF.

Contributors

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

Patrick Gehre, Magzhan Kapessov

Linked experiments

Processing - [PaGe_005_Pressing_MgO-C_BiomassPellets-120MPa](#)

Processing - [PaGe_006_ThermalTreatment_MgO-C_BiomassPellets-1000degC](#)

Linked resources

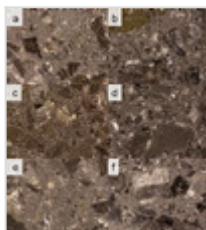
Instrument - [VHX-2000D I Keyence \(DigitalMicroscope\)](#)

Tool - [VH-Z20R/W I \(ZoomLens\)](#)

Attached file

Fig. 1.tif

sha256: 23ce28c067ddb414a51e762dc30d3fcc77e726aeb3904164c8ce55e322495890



Unique eLabID: 20260806-3898d09eda67749b042db35f9bc81836cdb21044

Link: <http://elabftw.chemie.tu-freiberg.de/experiments.php?mode=view&id=6308>