

EGU2020-19671

<https://doi.org/10.5194/egusphere-egu2020-19671>

EGU General Assembly 2020

© Author(s) 2022. This work is distributed under the Creative Commons Attribution 4.0 License.



Assessing the reactivity of magnesium oxide calcinated at different temperatures for understanding its role in degradation processes

Tobias Bader and Anja Diekamp

Unit of Material Technology, University of Innsbruck, Innsbruck, Austria (tobias.bader@uibk.ac.at)

In Tyrol, Austria, dolomite rock was commonly used as raw material for historic mortars and plasters. During calcination of dolomite rock, almost equal amounts of calcium oxide and magnesium oxide are produced. While the reactivity of calcium oxide is well known, the reactivity of magnesium oxide is still not completely understood. Within this study, the reactivity of magnesium oxide obtained from calcination at different temperatures (600 - 1000 °C) will be examined. For this purpose, natural magnesite (Hochfilzen, Tyrol) will be used instead of natural dolomite rock in order to minimise the influence of calcium oxide on the wet slaking curves. Both, calcination and slaking of magnesite will be studied with the help of X-ray diffraction analysis and thermogravimetric analysis. The gained knowledge is believed to be beneficial for improving the understanding of degradation processes. The study was performed within the Interreg V-A Italy-Austria project named DOLOMIA (ITAT 2036) with the funding by INTERact and the European Regional Development Fund (ERDF) being grateful acknowledged.