

Supplement

Stability of alkalinity in Ocean Alkalinity Enhancement (OAE) approaches - consequences for durability of CO₂ storage

Jens Hartmann^{1*)}, Niels Suitner^{1*)}, Carl Lim²⁾, Julieta Schneider³⁾, Laura Marín-Samper⁴⁾, Javier Arístegui⁴⁾, Phil Renforth⁵⁾, Jan Taucher³⁾, Ulf Riebesell³⁾

1) Institute for Geology, Universität Hamburg, Bundesstrasse 55, D-20146 Hamburg, Germany

2) Faculty of Physics/Electrical Engineering, Universität Bremen, Otto-Hahn-Allee 1, 28359 Bremen, Germany

3) Geomar Helmholtz Centre for Ocean Research Kiel, Kiel, Germany

4) Instituto de Oceanografía y Cambio Global, Universidad de Las Palmas de Gran Canaria, Las Palmas, Spain

5) School of Engineering and Physical Sciences, Heriot-Watt University, Edinburgh, EH14 4AS, UK

*) These authors contributed equally

Correspondence to: Jens Hartmann (geo@hattes.de), Niels Suitner (niels.suitner@uni-hamburg.de)

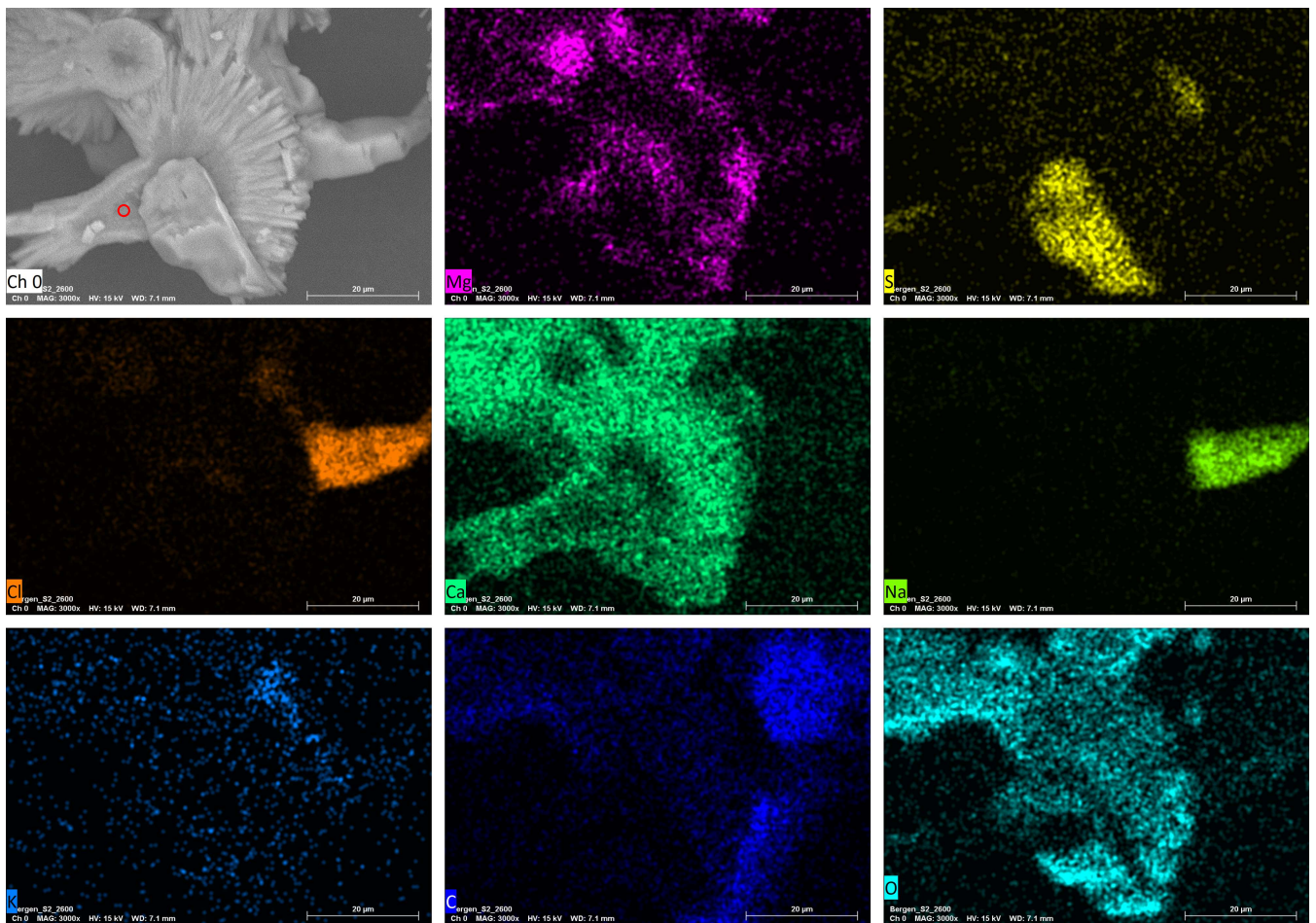


Figure S1: EDX-mapping of particle γ (Fig.9c – IV), showing the spatial elemental distribution of magnesium (Mg), sulfur (S), chlorine (Cl), calcium (Ca), sodium (Na), potassium (K), carbon (C) and oxygen (O); particle (γ) is rich in calcium, magnesium and oxygen (carbon mapping due to carbonic composition of the background material invalid), indicating the formation of Ca-Mg-carbonate minerals during precipitation; the central part of (γ) is covered by a gypsum crystal (Ca-S-O rich) which is, together with the NaCl salt crystal to the right, most likely a relic of the filtration process.

Table S1: Results of EDX-analysis of particle γ (Fig.9c – IV), location of analysis is shown in Fig.S1 (red circle - upper-left panel)

Element	Mass [%]	Mass norm. [%]	Atom [%]	Abs. error [%]	Rel. Error [%]
O	26.53	39.22	46.03	8.15	30.72
C	14.11	20.87	32.63	4.95	35.05
Ca	18.95	28.01	13.12	0.80	4.21
Mg	5.38	7.96	6.15	0.50	9.36
Cl	2.63	3.88	2.06	0.21	8.09
Os	0.04	0.06	0.01	0.03	66.73
Sum	67.64	100.00	100.00		