
[EE] Evening Poster | B (Biogeosciences) | B-PT Paleontology

[B-PT04] Biomineralization and the Geochemistry of Proxies

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Sun. May 20, 2018 5:15 PM - 6:30 PM Poster Hall (International Exhibition Hall7, Makuhari Messe)

Biomineralization and the Geochemistry of Proxies - Biology, laboratory culture-experiments and their applications to the paleo-research -

In order to reconstruct the Earth climate system, marine paleoclimatologists resort to transfer functions or geochemical proxies, which are produced or affected by organisms. The relationships used for reconstructions are generally based on field calibrations or derived from laboratory experiments. The danger of these so-called empirical relationships is that they may be valid only within the restricted parameter space of their calibration. Application of proxy relationships to very different environmental settings (e.g. high vs. low latitude or glacial vs. interglacial) requires a mechanistic understanding of these relationships. Much progress can be expected by a better understanding of the biomineralization mechanisms and the incorporation of proxy signals.

In this session we facilitate contributions related to the biomineralization, calibration and validation of marine proxies from field study, laboratory culture experiment and paleo-environmental reconstruction.

[BPT04-P06] Test density of *Ammonia* sp. under variable pH

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Keywords: foraminifera, calcification, computer tomography

Foraminifera is major calcium carbonate producer in the sea (Langer et al., 1992, 1997? Sciebel et al., 2002). Ocean acidification is a threat on the marine organisms. The influence of ocean acidification on the calcareous foraminifera is the interesting topic for marine science community. Here, we try to measure test density (i.e. CT value) of cultured benthic foraminifera by micro x-ray computer tomography (MXCT). The individuals are grown under different pH settings. The CT value shows relatively lesser variability among experimental settings. It is not statistically significant the chamber size variability nor its increase among variable pH setting, although we also compare the chamber volume and its increase among the condition. Generally, the size of chamber is increasing with growth at any conditions. The second chamber is smaller than the initial chamber with all individuals. Even the size of chamber increasing with growth from second added chamber, somewhat smaller chamber are added at the beginning of new whole of spiral. When new whole is starting, the older chamber is occupy some part of new chamber even though the outline of the chamber smoothly connected from older one-earlier chamber. This point is different from previous study with planktonic species (Fig. 5 of Sasaki et al., 2016).