

Supporting Information

Effect of bulk pH and supersaturation on the growth behavior of silica biomorphs in alkaline solutions

*Josef Eiblmeier^a, Matthias Kellermeier^{a,b}, Doris Rengstl^a, Juan Manuel García-Ruiz^{*c}, and
Werner Kunz^{a*}*

^aInstitute of Physical and Theoretical Chemistry, University of Regensburg,
Universitätsstrasse 31, D-93040 Regensburg, Germany

^bPresent address: Physical Chemistry, University of Konstanz, Universitätsstrasse 10,
D-78457 Konstanz, Germany

^cLaboratorio de Estudios Cristalográficos, IACT (CSIC-UGR), Avda. del Conocimiento s/n,
P.T. Ciencias de la Salud, E-18100 Armilla, Spain

Additional Figures

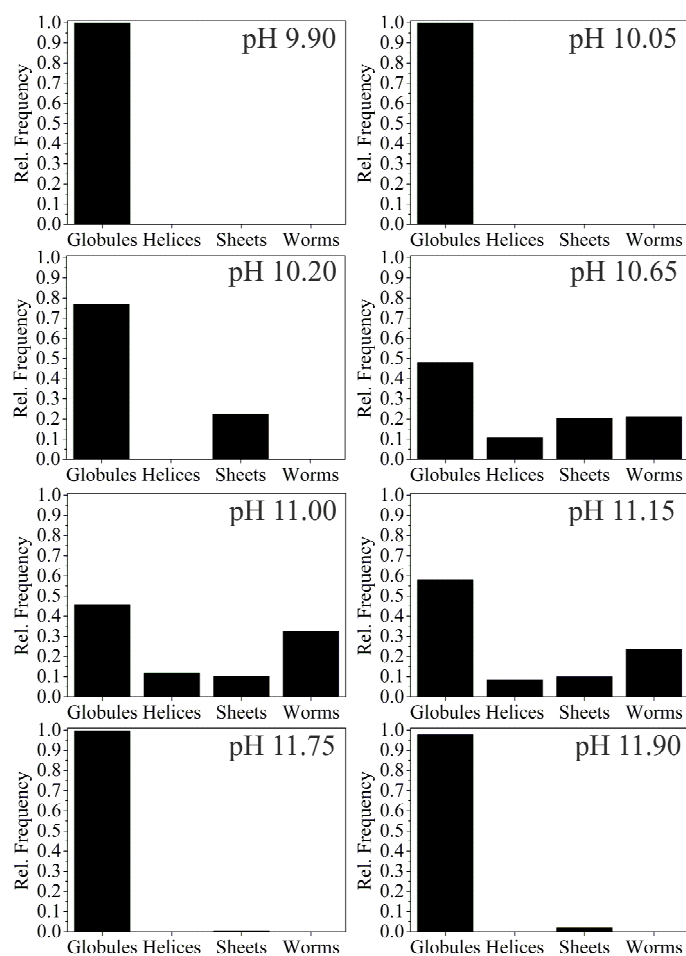


Figure S1: Normalized relative frequencies of globules, helices, sheets, and worms observed in experiments performed at different initial pH levels (as indicated). Values were obtained by counting particles on a defined area of the glass substrate. It is evident that significant amounts of characteristic polycrystalline morphologies are only present if the starting pH is adjusted to values between 10.30 and 11.15.

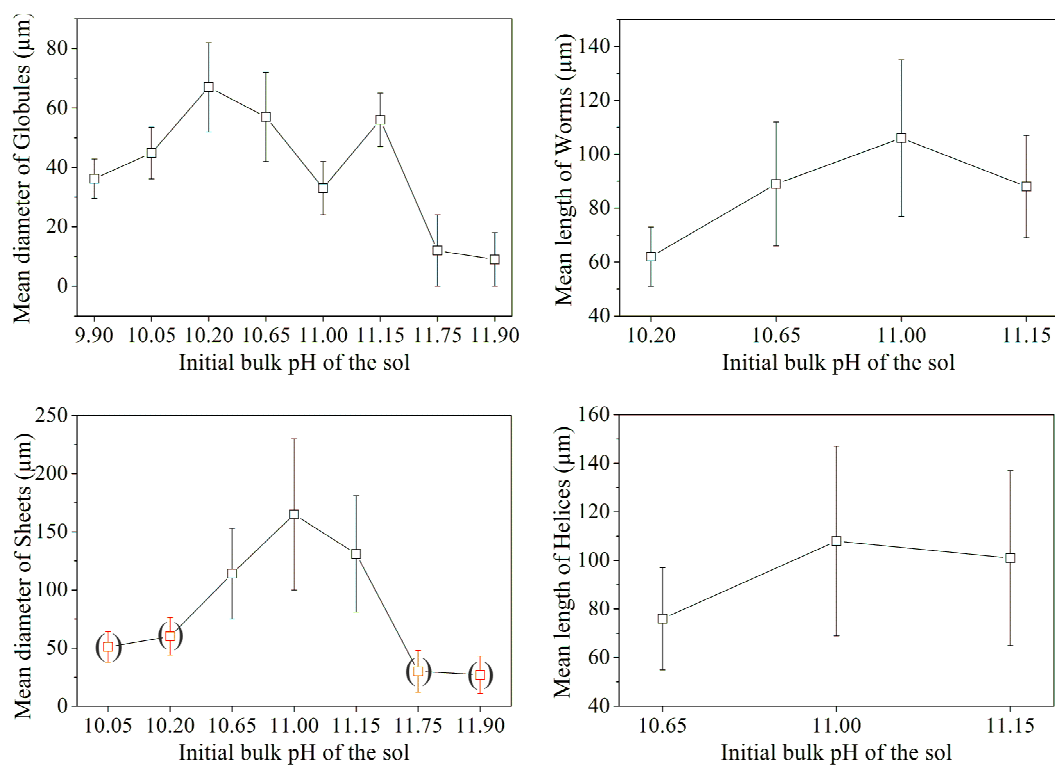


Figure S2: Average size and corresponding standard deviations determined for the distinct morphologies displayed by silica-witherite biomorphs, outlined as a function of the chosen starting pH. Data were obtained by measuring at least 100 individuals for each type of morphology where possible. For initial pH values of 10.05, 10.20, 11.75, and 11.90, the number of sheets observed was rather low and did not permit size analyses with statistical significance; therefore, corresponding data points are drawn in red and put in brackets. Note further that the mean size determined for fractal globules in the intermediate pH range (10.65-11.15) overestimates the true value, due to clustering of individual particles.

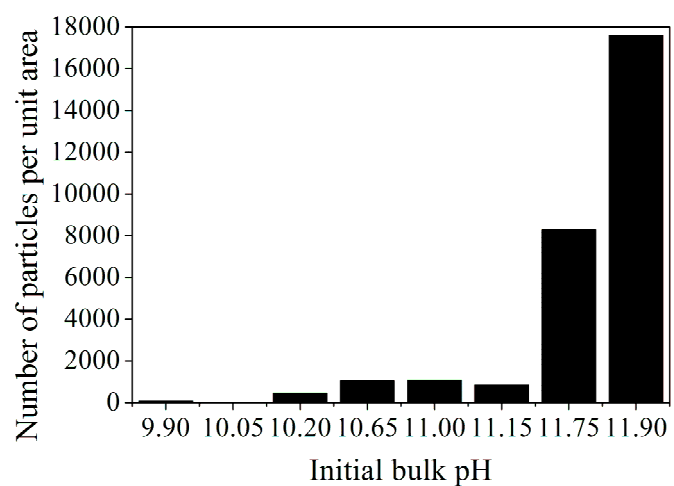


Figure S3: Absolute number of aggregates formed after 10 h of growth from solutions at different initial pH.

Data were obtained by counting all particles precipitated on a predefined area of the used glass substrate.