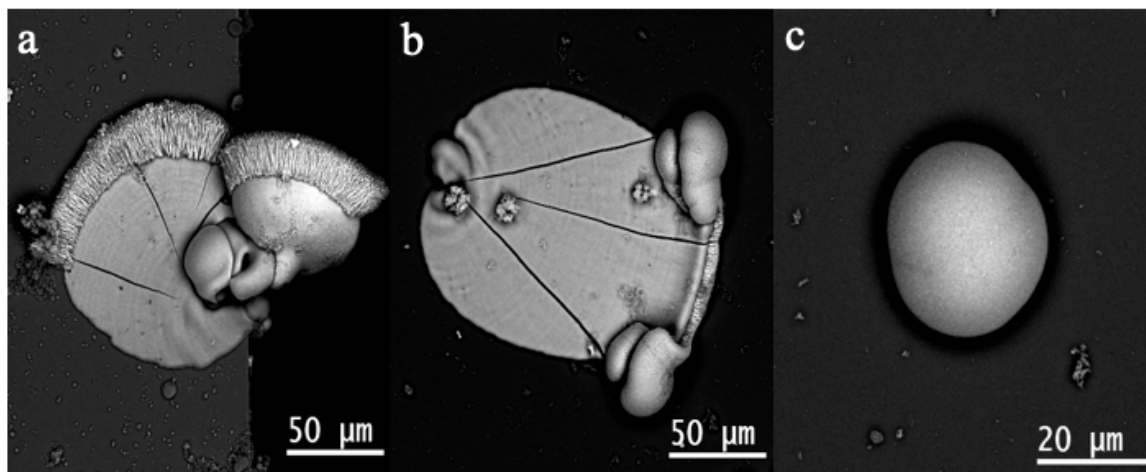
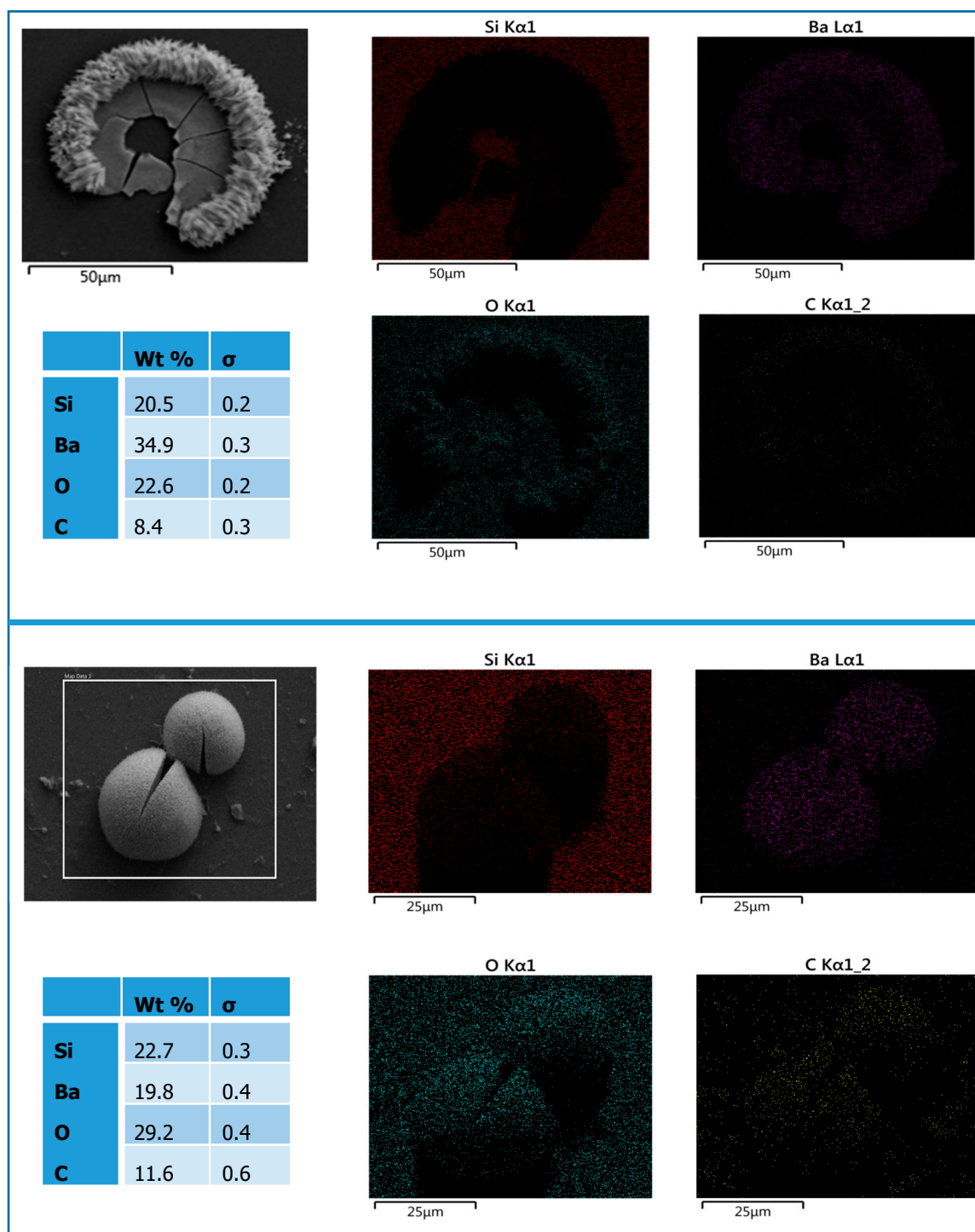


## Supplementary Materials: Influence of Pyruvic Acid and UV Radiation on the Morphology of Silica-carbonate Crystalline Biomorphs

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**Figure S1.** Scanning electron microscopy (SEM) images of silica-carbonate biomorphs synthesized with Sr. (a) Control sample without PA; (b) PA [0.01 M]; (c) PA [0.1 M].



**Figure S2.** Energy dispersion spectroscopy (EDS) from: Top: a control sample of Ba silica-carbonate biomorph. Bottom: a Ba silica-carbonate spherulitic structure synthesized in gas-diffusion under UV radiation.

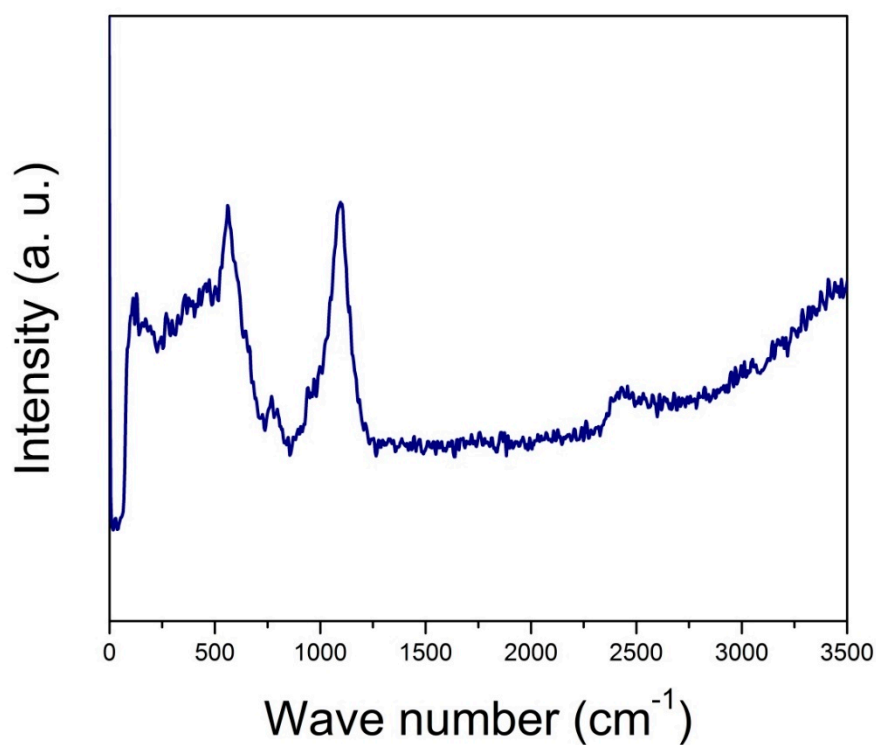


Figure S3. Raman spectrum from the glass substrate.

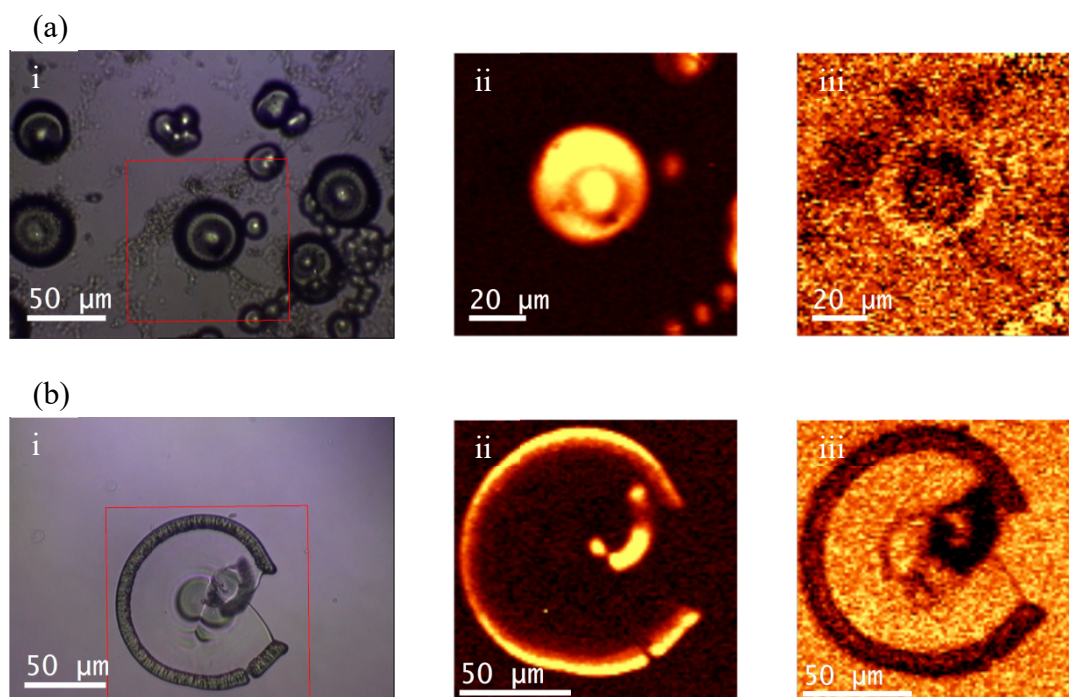


Figure S4. Confocal Raman imaging of Sr biomorphs synthesized with PA [0.1 M]. (a) Gas-diffusion method under UV radiation; (b) single-phase method under UV radiation. (i) Optical image of the structure; (ii) mapping of the  $\text{SrCO}_3$  peak at  $1070\text{ cm}^{-1}$ ; (iii) mapping of the  $\text{SiO}_2$  between  $515$  and  $620\text{ cm}^{-1}$ .

