

## Polymorphic Change of Calcium Carbonate by Addition of Silk Amino Acid to Crystallization Solution

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Biominalisation is the synthesis of minerals from simple compounds by organism. Calcium carbonate ( $\text{CaCO}_3$ ), one of the most abundant biominerals, is found as different polymorphs of calcite and vaterite.

In the study, crystallization of calcium carbonate using aqueous calcium chloride and sodium carbonate at room temperature was performed. The polymorphic control of crystalline calcium carbonate was achieved by adjusting the operating conditions. Calcium carbonate crystals were nucleated with silk amino acids. Silk amino acids were used as effective modifiers to mediate the crystallization of  $\text{CaCO}_3$ . The obtained crystals were characterized by scanning electron microscopy(SEM), Fourier transform infrared spectroscopy(FT-IR) and X-ray diffraction(XRD).

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