

Effect of alginate from Chilean *Lessonia nigrescens* and MWCNTs on CaCO₃ crystallization by classical and non-classical methods

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© 2018 by the authors. Licensee MDPI, Basel, Switzerland. In our crystallization experiments, the influence of alginate from Chilean *Lessonia nigrescens* and functionalized multi-walled carbon nanotubes (MWCNTs) was tested through electrocrystallization (EC) and gas diffusion (GD) methods on the crystal growth of calcium carbonate (CaCO₃) and their possible stabilization of proto-structures in amorphous CaCO₃ (ACC) state through pre-nucleation clusters (PNC) essays with automatic potentiometric titrations were performed. CaCO₃ crystals obtained in the in vitro above-mentioned crystallization systems were characterized by scanning electron microscope (SEM), energy-dispersive X-ray spectrometry (EDS) and powder X-ray diffractometer (XRD). Our experimental findings showed that ALG and functionalized MWCNTs stabilized truncated and agglomerated vaterite-like particles through GD and EC methods. While, on the other hand, we obtained qualitative information about induction or inhibition of Ca