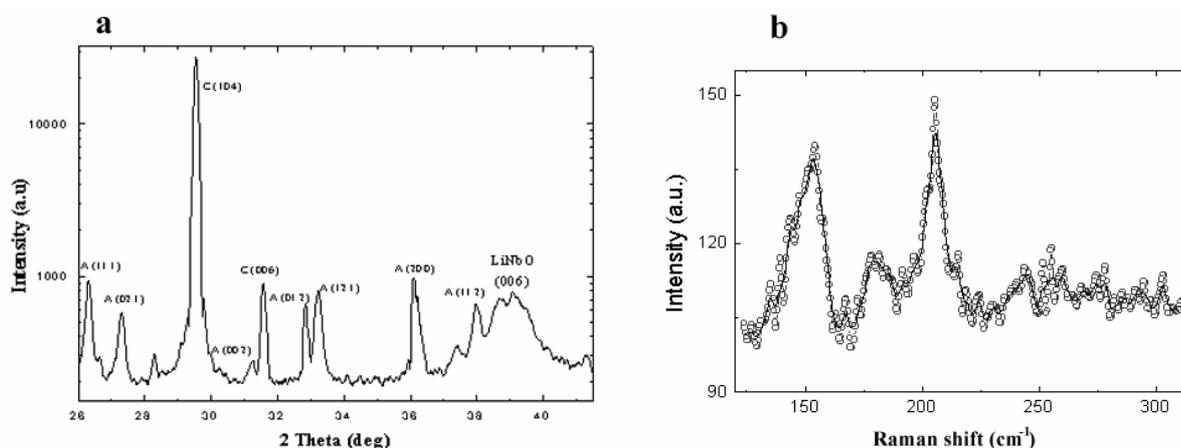
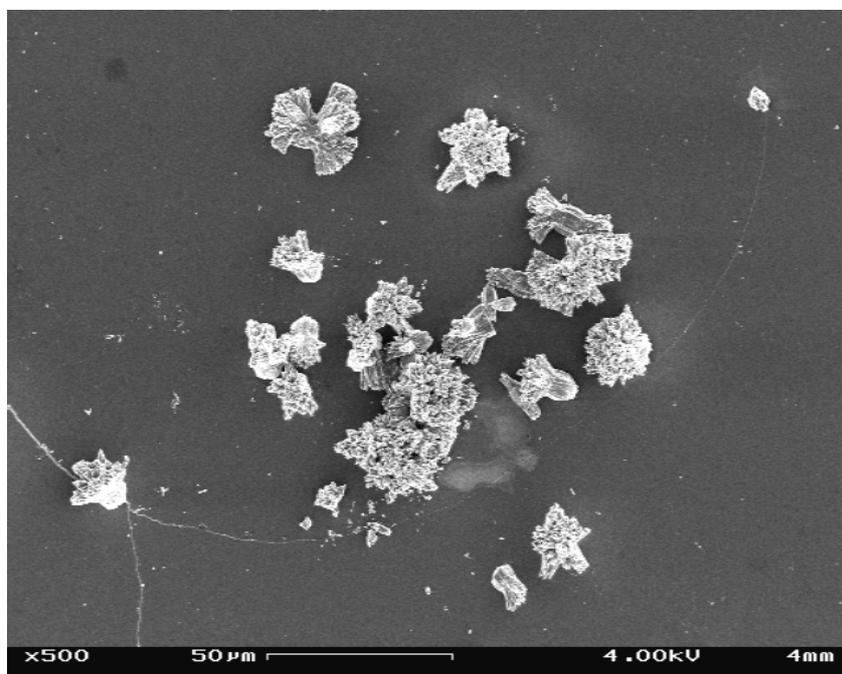


XRD and micro-Raman analysis

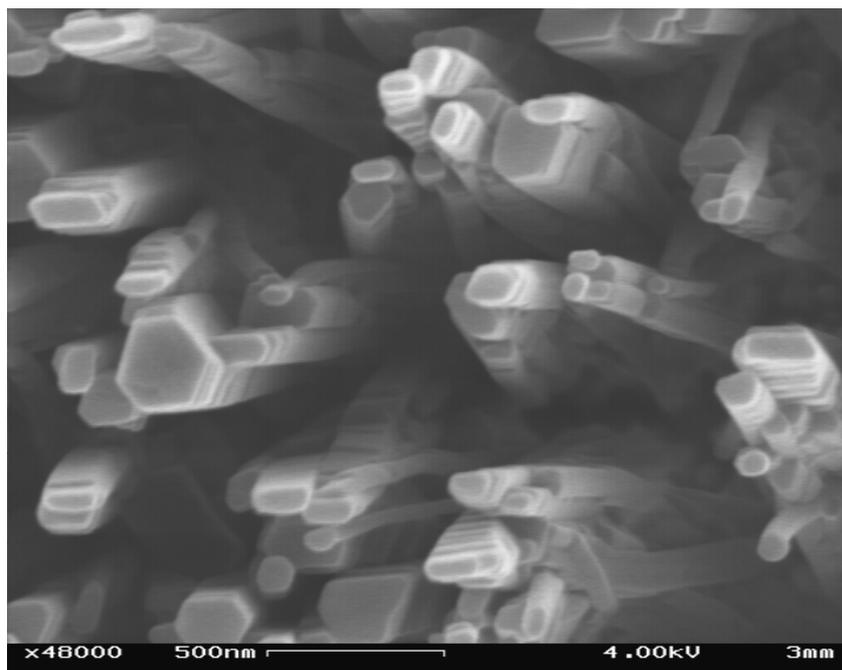


**Fig. 4.** Characterization of CaCO<sub>3</sub> crystals grown on selected substrates: (a) - XRD profiles showing diffraction peaks of calcite (C) and aragonite (A) crystals formed on LiNbO<sub>3</sub>; (b) - Micro-Raman spectrum taken from the crystals of pseudo-hexagonal shape grown on (111)Si (See **Fig. 2b**) with characteristic peaks at 155 and 205 cm<sup>-1</sup>, which are typical of aragonite.

Additional Images



**Fig 5.** Low-magnification, large-area image showing a flower-like crystal growth on the (111)-oriented Si that is typical of epitaxial aragonite. No indications of epitaxial calcite were found in this experiment.



**Fig. 6.** Aragonite crystals epitaxially grown on (001)-oriented aragonite. Although the (001) crystallographic planes of aragonite and calcite are very similar, no calcite has formed.