Electronic Supplementary Material (ESI) for Analyst.

SUPPORTING INFORMATION

Quantitative control of $CaCO_3$ growth on quartz crystal microbalance sensor as a signal amplification method

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Polymorphism characterization of $CaCO_3$ by Raman.

There are three polymorphs for $CaCO_3$ crystals, calcite, aragonite and vaterite. The three polymorphs have different morphology and density. From the Raman spectroscopy, we can see the obtained crystals on surface modified with –COOH are exclusively calcite, as shown in Figure S1.

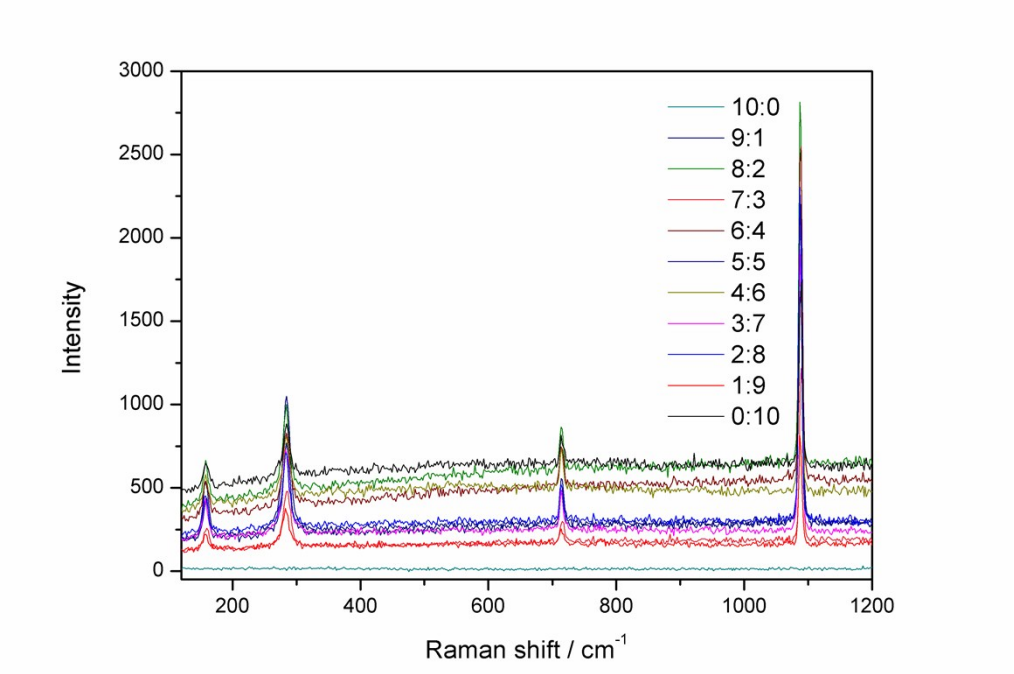

Figure S1 Raman spectroscopy of crystals on gold surface modified with different ratio of –COOH to -$N(CH_3)_3$.

However, on bare gold sensor surface and in bulk solution, aragonite was found, as shown in Figure S2.

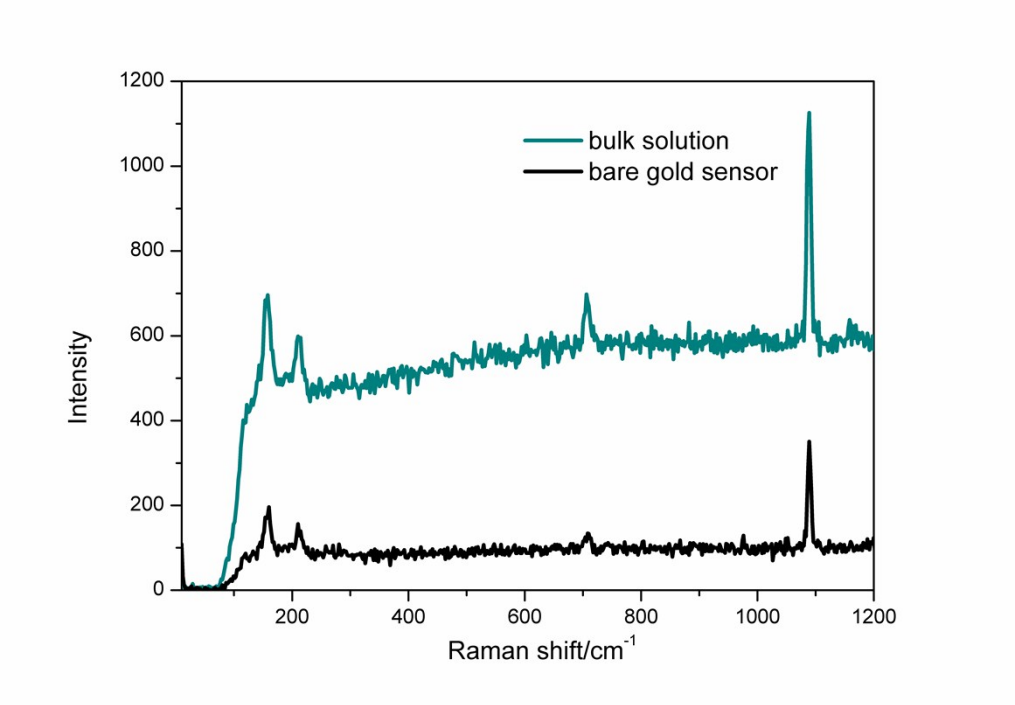

Figure S2 Raman spectroscopy of crystals on bare gold surface and in bulk solution.