

Organic additives are widely known for affecting crystallization of minerals. As a technical application, they are used as scale inhibitors in many industrial processes. In general, synthetic commercial additives are based in the same functional groups e.g. carboxylic acid (COOH), phosphonic acids (PO<sub>3</sub>H<sub>2</sub>) and sulfonic acids (SO<sub>3</sub>H). The presence of organic additives with such functional groups may inhibit or promote crystallization of inorganic minerals. Due to the interaction between the organic molecules and the different crystal faces, the morphology of the crystal changes when organic additives are present. The effect on barite precipitation of a commercial copolymer, which is used as scale inhibitor in oil recovery, was tested. The morphological change of the particles is relevant and little variations of the dose affect strongly to the shape of the particles obtained.

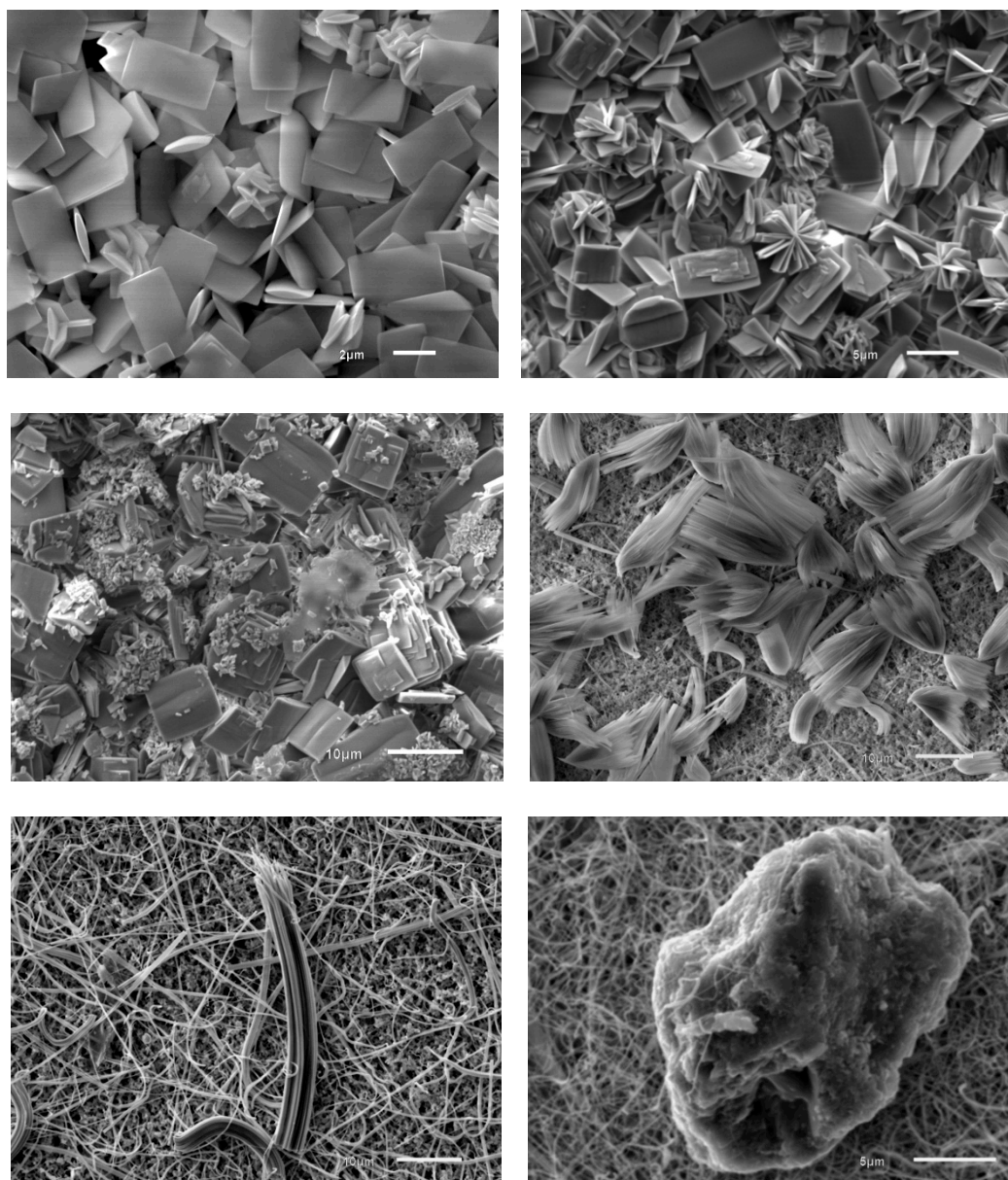


Image 1. SEM images of barium sulfate in the presence of commercial inhibitor. The concentration of barium sulfate is [250 μM] in all the experiments, a) 0 ppm of inhibitor; b) +0.1 ppm of inhibitor; c) +1 ppm of inhibitor; d) +2 ppm of inhibitor; e) +5 ppm of inhibitor; f) +10 ppm of inhibitor.