

The shape of scale

Kinetics of scale formation

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Scale is one of the largest challenges for well integrity. In this work we show a new aspect to understanding scale formation; the shape of scale. The crystal morphology, the distribution on the surface and their secondary structure govern the scale stability. We show an analysis of how the shape and surface structure of scale is affected by a wide range of parameters such as flow conditions, surface morphology, impurity concentration, chemical potential and how the structure develops over time.

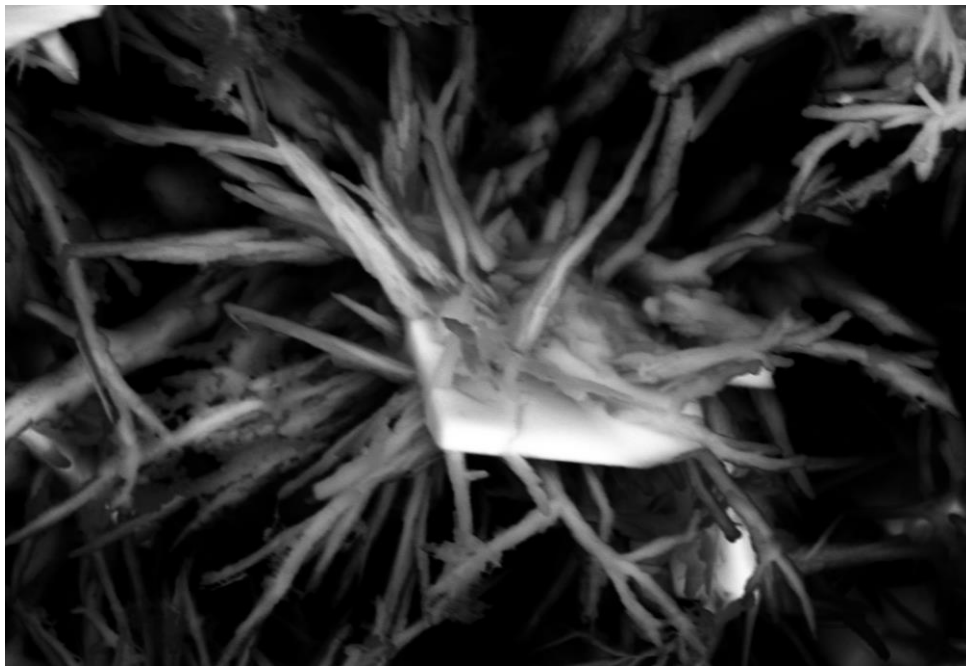


Figure 1 The shape of BaSO₄ scale under constant flow conditions