

8.21: SEM comparison of Intact and Resedimented Mudrock Microstructure

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ABSTRACT

I show that the microstructure of resedimented mudrocks is quite similar to that of intact mudrocks (Figs 1 and 2). In both cases, the microstructure consists of silt inclusions randomly distributed in a matrix of clay minerals. The clay matrix consists of clay aggregates forming face-face and face-edge contacts with other particles and aggregates. The pore space consists of intra-particle pores and inter-particle pores of similar shape and size. The orientation of the pore space appears to be symmetrical for the resedimented samples and asymmetrical for the intact samples. These results were obtained from two different mudrocks: Gulf Mexico (Figs 1 and 2) and Boston Blue Clay (not shown here).

Samples were oven-dried at 110°C for 24 hours. Samples were then ion milled to prepare a flat surface for imaging. Finally, samples were imaged in secondary electron mode at a voltage of 1 Kv.

**CLICK ON IMAGE FOR
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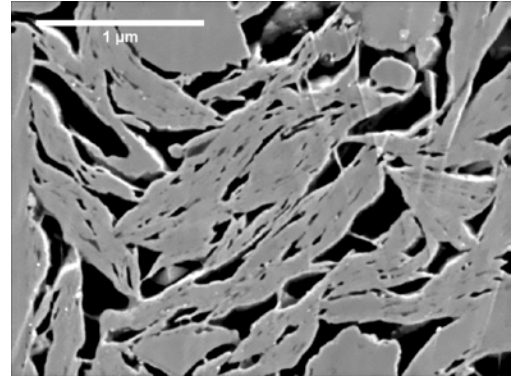


Figure 1: An SEM image of an oven-dried resedimented Gulf of Mexico sample at 1 MPa

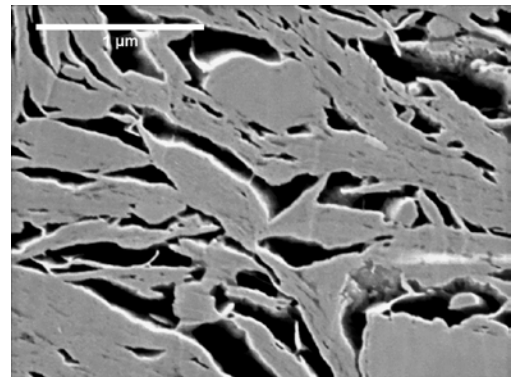


Figure 2: An SEM image of an oven-dried intact Gulf of Mexico sample recovered from a depth of 477 feet.

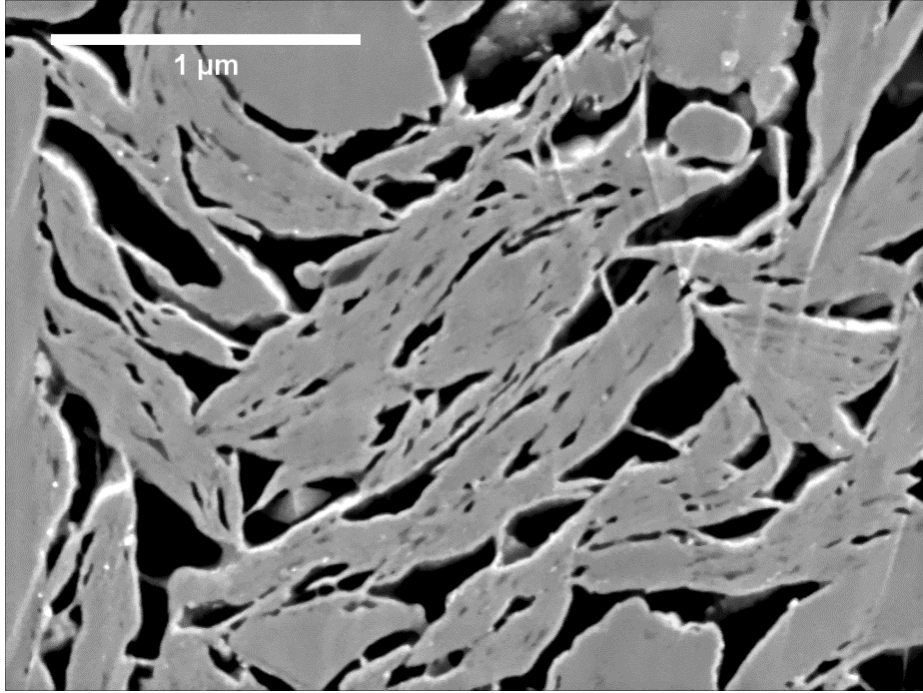


Figure 1: An SEM image of an oven-dried resedimented Gulf of Mexico sample at 1 MPa

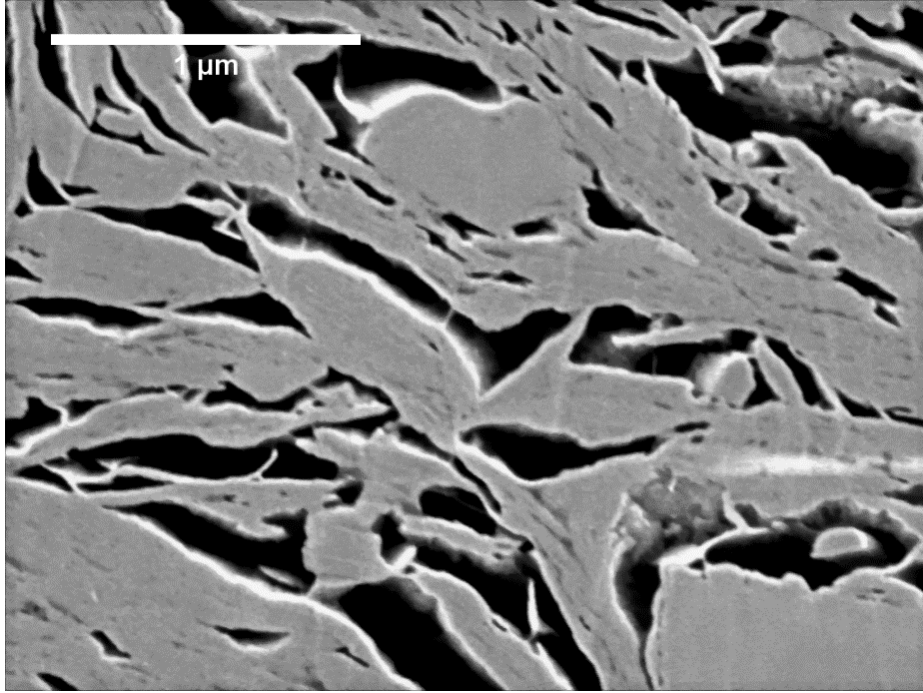


Figure 2: An SEM image of an oven-dried intact Gulf of Mexico sample recovered from a depth of 477 feet.

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