

**Microfacies analysis and diagenetic settings of the Samana Suk Formation,  
Khairabad section, western Salt Range, Pakistan**

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**Abstract**

The Samana Suk Formation of the Middle Jurassic age from the Khairabad section, western Salt Range, Pakistan has been studied to elaborate its microfacies and diagenetic setting after the collection of 52 samples from 35m thick succession. Based on outcrop appearance the formation is divided into four litho units. Detailed laboratory study revealed the presence of 6 microfacies which are bioclastic grainstone, peloidal grainstone, ooidal grainstone, mudstone, bioclastic mudstone and bioclastic packstone. Diagenetic settings manifested dissolution, replacement, alteration, dolomitization and micritization. Various cement morphologies, micritic envelopes, open and filled fractures (calcite veins), stylolites, stylocumulate and solution porosities are present. Fields observations and laboratory investigations led towards the conclusion that the Samana Suk Formation was deposited mainly in the shallow shelf environment.