

Application of Petrography and Elemental Criteria for the Recognition of mixed Aragonite and Calcite Original Mineralogy in Type Section of Ilam Formation (Zagros Basin), S.W. Iran

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Abstract

The type section of Ilam Formation is located at Pakal e-Garab Village, 43 km of SE of Ilam City, Zagros Basin, southwest of Iran. This formation (Late Santonian-Early Campanian) composed of limestone, shale, marl, disconformably overlies by shales of Surgah Formation and overlined by Gurpi Formation. Microfacies analysis led to the recognition of three microfacies that are related to one facies belt such as open marine. Geochemical data (major and minor elements) and ratios, were used to recognition of original mineralogy. Based on this elements data, mixed aragonite and calcite were the original mineralogy in the type section of Ilam Formation. Also plot of Sr/Ca ratios, versus Mn values, indicative of influence of diagenetic process in a semi-closed system. Study of the morphotype groups of planktonic foraminifera at the type section, indicating specific condition of oligostrophy and sedimentation in relatively deep marine condition.

Keywords:

Ilam Formation, Late Santonian-Early Campanian, major and minor elements, oligostrophy, planktonic foraminifera