

<<低熟油气形成机理与分布>>

图书基本信息

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内容概要

At the beginning of 1970, well-known French geochemist B. P. Tissot et al. had synthesized and summed up the scientific results of predecessors. He therefore proposed a theoretical model of hydrocarbon generation by the late thermal degradation of kerogen, revealed generation, evaluation and distribution regularities for conventional crude oil and natural gas. The model established by Tissot has been internationally accepted in petroleum geological circles, fruitfully used to direct the explorative practice of conventional petroleum in the world, and become a geo-logical basis to establish petroleum evaluation methods. Early in the 1980s, Chinese petroleum geological circles adopted Tissot's model and successfully accomplished the first national petroleum resources assessment. Based on this theoretical model, after burial depth of kerogen in source rock is up to the hydrocarbon-generating threshold (usually indicated by a vitrinite reflectance R_o value of 0.5 %), hydrocarbon starts to be generated. While entering oil peak (corresponding R_o value is around 0.8-1.0%), a large amount of petroleum would be formed. However, it is commonly believed that if do not enter oil peak, source rocks would only generate limited crude oil. Ones not reaching the threshold would be referred to immature source rocks or non-source rocks. Meanwhile, petroleum geochemists have also establish a series of molecular indicators for determining maturity of crude oils and extractable organic matter (EOM) in source rocks. In most cases, the above concept seems to be feasible, especially for petroleum exploration in marine strata. Therefore, explorers do not take immature source rock contribution into account, and ignore the possibility to search for petroleum resources in the shallow strata around the threshold depth or in shallow basins for a considerable period.

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