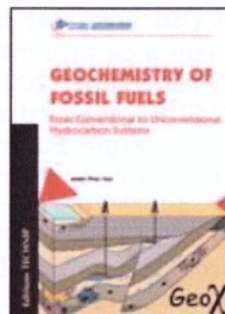


Documentation

GEOCHEMISTRY OF FOSSIL FUELS From Conventional to Unconventional Hydrocarbon Systems

de Alain-Yves Huc



Understanding the origin and fate of hydrocarbons in the subsurface has been the major endeavor of organic geochemists during the second half of the XXth century. They succeeded to the point where the deciphered interplaying set of elements and processes paved the way to the revolutionary concept of petroleum system, a unifying paradigm which plays an important role in decision making associated with oil and gas exploration.

The chemistry and physics involved have been addressed in a quantitative way and integrated to the other aspects of petroleum geology, giving rise to the development of numerical basin modeling. These simulators are now an essential tool in the workflows used by the petroleum industry for prospective appraisal of sedimentary basins. As discussed in this book, the concept of petroleum system is sufficiently robust to encompass the geological rationale underlying the occurrence of hydrocarbons in unconventional settings, a booming domain in the scene of energy.

This book has been designed in order to offer an overview on different aspects of the geochemistry of fossil fuels, in particular on the functioning of a petroleum system. In this respect, it can be viewed as a foundation for approaching basin modeling. It also introduces the role of geochemistry in reservoir characterization, production and flow insurance.

It does not intent to interfere with any existing text books or highly specialized publications, but rather to provide, in a concise form, a general educated summary of a topic which over the years has been extensively developed by industrial and academic international research teams with a key contribution of IFP Energies nouvelles.

This book will be of interest to a large audience including both specialists of the field and non-specialist professionals, as well as undergraduate and graduate students.

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