

## PREFACE

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World petroleum and natural gas reserves from long term consideration are however finite, although it is still too early to give a confirmatory statement to predict the years of oil and gas depletion. On the other hand the global oil-equivalent reserves of shale oil is enormous and deserves the qualified candidatedship for a potential petroleum alternate and oil from shale would be expected to share a significant portion of the world oil supply in the middle of the twenty first century.

In viewing of the world survey of oil shale and shale oil development, the establishment of a sound commercial scale of shale oil industry has to take four fundamental aspects into consideration:

(1) Oil shale retorting furnace should have large capacity in general for handling either lump-size or particulate shales, subjected to prolonged period of operation and applicable to shales of various origins.

In case of developing countries, owing to the absence of industrially available shale retort of large capacity with successful period of operation history, it is advisable to make option of the retorting technology on the basis of technical availability, industrial validity, operational simplicity and investimental flexibility and meanwhile to take shale grade and exploitation condition into account.

(2) A rational complex-utilization of gaseous, liquid and solid products from shale-retorting process should be in its industrialization project so as to lower the production cost of shale oil, of which the price will be competitive with that of the crude. A fair knowledge of

shale composition both organic and inorganic, and full mastering of relevant technologies in the complex-utilization are of vital importance to the realization of the integrated complex.

(3) Environmental impact of oil shale and shale oil industry must be paid much attention in its industrial scheme projecting.

(4) The higher level of decision maker in an industrial firm or a country had better to be endowed with long term project idea as well as near term enterprises objective, capable of looking into the matter with sharp-eyed and foreseeable susceptibility.

The primary objective of the conference is to provide an international forum for scientists and engineers from academic, research and industrial organizations to exchange views and informations. It is hoped that with the publication of the conference proceedings the levels of scientific and technical expertise in oil shale and shale oil industry in the developed and developing countries will be improved, and the mutual understanding and freindship between participants of different nationality are to be strengthened therewith.

The proceedings of the conference contains 80 papers and 9 abstracts, of which the authors were not able to submit their full texts in time. The participants of the conference covers 15 nationalities of the world: Australia, Brazil, Canada, China, FRG, Japan, Jordan, Morroco, Sweden, Thailand, Turkey, UK, USA, USSR, Yugoslavia. The papers in this volume have represented the significant advances of science and technology in the past two decades in the development of oil shale and shale oil industry.

The oral presentations as listed in the content have covered the following section headings: (1) Geology of oil shale, (2) Chemistry and Geochemistry of oil shale, (3) Processing of oil shale, (4) Chemistry and upgrading of shale oil, (5) Combustion, (6) Shale Ash Utilization, (7) Environmental Impact, (8) Industrial development assessment. These headings have depicted obviously the theme of the conference, focusing on the mutual communication of personal views on industrial oil shale development from different countries and various areas. In accordance with this theme in mind, panel discussions on such subject were presented.

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uals who have contributed to the planning and organizing of the conference, in particular to the members of the advisory, organizing and technical committee. A deep thankfulness should be given to Prof. Qian Jialin for his indispensable help in the compilation of the proceedings. The financial assistance of China Petrochemical Corporation and the Department of Energy, USA are especially appreciated.

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