

HISTORY AND CURRENT STATUS OF OIL SHALE INDUSTRY IN CHINA

Oil shale industry in China has been in operation for more than 70 years. During the Japanese invasion of China, an internal heating retort for commercial operation was developed in Fushun from 1920 to 1930. Oil shale for processing was open-pit mined. Two hundred retorts, called Fushun-type retorts, were built in 1945, each with a daily throughput of 100-200 tons of oil shale. The maximum annual shale oil production reached 250,000 tons.

After the founding of the People's Republic of China in 1949, 70 retorts and related processing units were restored in the Fushun refinery No. 1 before 1953. In the Fushun refinery No. 3, shale oil was hydrotreated for producing light liquid fuels. Besides, 60 retorts were restored in 1954 in the Fushun refinery No. 2. To the beginning of the sixties, 266 retorts were operated in the Fushun refineries No. 1 and No. 2. A new shale oil plant in Maoming, Guangdong Province, was constructed where oil shale was also open-pit mined. 64 retorts were built and put into operation in 1969. Thus, the maximum output of shale oil in China reached 780,000 tons.

Since the discovery of Daqing oil field in the sixties, due to the increasing production of much cheaper crude oil, the shale oil production decreased gradually. In the nineties, shale oil production in Maoming Petrochemical Company and Fushun refineries No. 1 and 2 was stopped.

However, the National Planning Committee of China decided to build an oil shale retorting factory under the management of the Fushun Bureau of Mines. This plant with 60 retorts was called Fushun Oil Shale Retorting Plant and was successfully put into operation in 1992. The capital costs amounted 350 million Chinese yuan. The annual production of shale oil to be sold as fuel oil reached 60,000 tons, with carbon black as a by-product, about 600 tons each year. The factory has made profits due to the low cost of oil shale as the by-product of open-pit mining of Fushun coal.

In recent years, Maoming Petrochemical Company, in co-operation with Petroleum University, Beijing, and Environmental Research Institute



of Beijing Normal University has conducted experiments of agricultural utilization of Maoming oil shale ash. Laboratory and field tests show that plants grow well on the waste shale ash dumpyard, and it is also accompanied by the improvement of environment quality.

From the beginning of the nineties, the journal *Oil Shale* has become a preferably English-written publication, being the only scientific-technical periodical in the world specially dealing with such kind of fossil fuels. We are glad that in recent years more than 10 papers written by Chinese scientists informing about oil shale research work and industrial achievements of China have been published in this journal. We believe that *Oil Shale* will act as an active center among the oil shale workers of the world and make even greater contribution to the development of world oil shale activities in the future.

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Jialin Qian, professor, a member of the National Reviewing and Awarding Committee for Chemical Technological Invention and Innovation, a member of the editorial board of the Estonian journal *Oil Shale*, a member of the editorial board of Chinese journals *Fuel Chemistry and Technology* and *Oil and Gas Processing*.

J. L. Qian, born in March 1928, graduated from Chemical Engineering Department of Utopia University in Shanghai in 1949, worked from 1950 to 1953 in Tsinghua University in Beijing as an assistant and lecturer. From 1953 up to now he has been working in the Petroleum University (formerly Beijing Petroleum Institute, and Huadong Petroleum Institute) as a lecturer (1953-1963), associate professor (1964-1983), and full professor (since 1984) and Ph. D. advisor (since 1989).

J. L. Qian has been involved in teaching and research work in the field of chemistry and processing of oil shale, coal, and petroleum, as well as in the realms of unit operation, chemical engineering kinetics and heat transfer for more than 45 years. He has published about 200 papers and 10 books and got 7 governmental awards in the above-mentioned fields.

J. L. Qian, as a member of Chinese Oil Shale Group, participated in the research work on Chinese shale oil processing, conducted in Soviet Union Petroleum and Synfuel Research Institute in Moscow in 1956-1957. J. L. Qian participated in the United Nation's Oil Shale Expert Group Meetings in New York and Geneva in 1980, and co-sponsored the Oil Shale International Conference in Beijing in 1988. Recently he visited Oil Shale Research Institute and factory in Kohtla-Järve and Tallinn Technical University. He has also accepted Estonian, Russian, American and Jordanian specialists and professors during their scientific exchange visits in Beijing. Besides, J. L. Qian has visited also Russia, the United States, Japan, Canada, Thailand, Jordan, etc., for related meetings and scientific co-operation.

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