

The Historic Origins of Oil Production

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Abstract

The Absheron peninsula in Azerbaijan has been the cradle of the oil industry since antiquity. Natural seeps of light oil and condensate tended to ignite spontaneously; this natural phenomenon led to Zoroaster's religion of purification by fire. Already in the old ages people dug wells and produced light oil (naphta) as burning fuel and black oil (mazut) for water-proofing. From antiquity and throughout the middle ages oil from this region was exported and frequently cause for war, until the Russian Czar Peter 1st (the Great) conquered and occupied Azerbaijan in 1723, organizing oil export to Russia.

In Western Europe oil exploration and production started in 1709 through the work by Bessarabian traveler-scientist Eyrini d'Eyrinis. He developed bitumen mines in Switzerland and then the oil fields in Northern Alsace. There the medical doctor Theophil Hoeffel became the first petrochemist, distilling oil and finding various applications and use. In the 19th century the family Le Bel was leading the development of the oil fields in Alsace through four generations, up to World War I.

In the 19th century with the arrival of steam engines, steam locomotive and steam ships the need for oil as lubricants and also as fuel rapidly increased. In North America first the oil fields in western Pennsylvania were discovered and developed. Here John D. Rockefeller built up Standard Oil, focusing on transport and refining rather than exploration and production. Around the turn to the 20th century, oil fields in Texas, Oklahoma and Louisiana were discovered. In Europe Marcus Samuel started Shell Transportation company to import oil from Azerbaijan to Europe and then through the Suez canal to the British colonies, mostly India. He joined forces with Henry Deterding, who had led oil discoveries in the Dutch colonies of Indonesia. Together they built Royal-Dutch/Shell Oil.

Short Biography

Martin G. Lüling obtained his Ph.D. in Princeton University with a study in theoretical elementary-particle physics. He worked for Schlumberger as theoretical physicist on the development of measurement devices and methods as well as data-reduction and processing techniques for the oil and gas exploration. He significantly contributed to the development of electromagnetic measurements during the drilling process and their application as controls for steering in directional drilling. In 2021 he founded his company Luling-Tech, with which he offers services in scientific communication, scientific consulting and scientific creations on environmental questions and natural resources.

