S-37 – Unconventional History: Sixty Years of Science and Technology in Hydraulic Fracturing

(1 sessions, 5 participants)
International Committee for the History of Technology

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Abstract:
The goal of this session is bringing together practitioners from academia and industry, as well as experts from the civil society to present and discuss the historical development and application of technologies for unconventional gas and oil projects during the past sixty years. Since the beginning of the oil business it was felt necessary to maximize the performance of the fields and, relying on the limited geological evidence available at the time, early technologists conceived methods to extend the life and enhance the productivity of wells using explosives and steam or acid compounds to remove depositions of paraffin. After almost seventy years of ‘standard drilling’, a new technological trajectory in exploration and production was introduced by the late 1920s when horizontal drillings were successfully experimented. The inception of hydraulic fracturing technology gained momentum in the United States when, in the 1940s, the relationship between well performance and treatment pressures was theorized. In the following years of field, when-appropriate tests and the development of an operational procedure were completed, in 1949 the first patent for hydraulic fracturing treatments was pended and obtained. Since then, hydraulic fracturing technology has been continuously improved, developed and utilized in numerous countries. The study of the history of the oil industry often requires the historian to merge together humanities and science and an understanding of hydraulic fracturing – intended as cumulative process of technology and the creation of a technological system – implying a wealth of knowledge that historians of science, technology and energy do not have so far. The session aims to remove that hindrance and to stimulate new historical research that will increase our understanding of the artifacts, methods and skills that are going to secure for some more decades the energetic abundance at the base of our last two centuries development; and, giving us the necessary time to make the utilisation of alternative energetic resources perfect.

Keywords: History of technology – Energy history – Oil production – Oil shale boom – Hydraulic Fracturing.

Expected Participants:
1. Francesco Gerali, USA / Italy, University of Oklahoma
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