Petrochemistry-2013
World Congress on
Petrochemistry and Chemical Engineering
November 18-20, 2013 Hilton San Antonio Airport, USA

Chemmotology: A new paradigm of use of traditional and alternative fuels and lubricants

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Abstract

The origins of Chemmotology date back to 1964. The separation of Chemmotology into the independent applied science united scientists and practitioners of engineering, oil and chemical industries along with the companies which operate the technologies for Chemmotological problems solving. Over the last years Chemmotology being an applied science, has found its broad scientific and social acceptance.

The definition and the main problems of Chemmotology were introduced by K.K. Papok in 1964. He defined the science as "a new science that studies chemical, physical-motor properties of fuels, lubricants and special fluids as well as their service performance, and develops the way for their rational use in technical equipment." The modern definition of Chemmotology, its subject, methods and goals was proposed in 2005: "a technical applied science about properties, quality and rational use of fuels, lubricants and specific fluids in technological equipment."

Chemmotology is a problem science being at the edge of Chemistry, Physics, Engineering, Economics and others, in particular. The role of Chemmotology as an applied science is supported by the importance of the problems it solves: securing energy safety of economy of a country, rational use if traditional and alternative fuels, lubricants and specific fluids during the operation of modern and prospective technologies. The subject of Chemmotology is service performance of fuels, lubricants and special fluids. The main scientific and practical goal is rational use of fuels, lubricants and special fluids during equipment operation.

In conditions when modern society tends toward sustainable development, alternative energy sources enter more and more spheres of human activity. During last decade the share of alternative fuels and lubricants has increased in several times. So, keeping up with times we see development of this new research area as inseparable part of Chemmotology science.

Economical meaning of Chemmotology is achievement of maximal economy of raw materials, fuels, lubricants and special fluids through optimization of balance and quality of products, their rational and efficient use.

Biography

Sergii Boichenko is Doctor of sciences, professor of the Ecology department of the National Aviation University. He is a Director of the Ukrainian Research and Educational Center of Chemmotology and Certification of Fuels, Lubricants and Technical Liquids. Sphere of scientific interests: effective and rational use of fuels, lubricants and technical liquids, environmental protection