

*in memoriam*

## In remembrance of Viktor Yefimov

### 80<sup>th</sup> anniversary of his birthday



Viktor Yefimov, Doctor of Technical Sciences, an internationally known oil shale technologist and chemist was one of the great oil shale researchers of the last century in Estonia: Wittlich, Kogerman, Luts, Raud, Usk, Aarna, Öpik and Yefimov. The 20<sup>th</sup> century was the period of detailed investigations into chemical processing and burning of Estonian kukersite oil shale. Foreign companies supported industrial testing of various retorting technologies since the 1920s. Different types of retorting units, tunnel ovens, chamber ovens for producing gas, and finally units with solid heat carrier were tested in Estonian oil industry. Oil shale industry supported the process of the rebirth of the Estonian Republic in the 1990s guaranteeing independence in energetics. We are proud to say that today, in 2010, Estonia really offers to the world a well-operating and long-tested retorting technology of processing oil shale fines. The new units based on internal heating with solid heat carrier represent a practical fruit of investigations and industrial-scale tests carried out by Estonian specialists in oil shale during the preceding century.

Scientific interest of V. Yefimov was focused on optimisation of lump shale retorting process in vertical retorts, but he was also competent at comparing the advantages of various technologies used in oil shale plants.

V. Yefimov was born on December 13, 1930, in Irboska, in former Petseri county of the Estonian Republic. After the soviet coup in 1940, his

father was repressed and the family removed to Tallinn. After graduation from Tallinn Polytechnical Institute with the diploma of an engineer-chemist-technologist, V. Yefimov was destined to Kohtla-Järve Oil Shale Processing Plant where he moved from a shift master to the post of a technologist. In 1959 when Kohtla-Järve Oil Shale Institute was founded, V. Yefimov started his scientific career there as a researcher, reaching later the post of vice director in technology. At both institutions the process of oil shale retorting in so-called generators (vertical retorts) was the main object of his research. As for generator types, since 1924 Pintsch retorts, originally designed for processing coal, were operated in Kohtla-Järve. Despite the facts that oil was produced also in tunnel ovens of the plant and in soviet years production activity of the plant was focused on processing oil shale to get household gas for providing St.-Petersburg (then Leningrad) and later on Tallinn as well, generators remained the most important equipment in Kohtla-Järve. Adjustment of the retorting process for thermal treatment of oil shale, enhancement of production capacity and reliability, and minimalization of environmental impact – finding solution of these problems extended over V. Yefimov's whole working life.

The capacity of Pintsch retorts was only ca 35 tonnes per day in 1924, new designs made and tested by 1990 operated 1000 tonnes per day already. The construction of 1500 tonne-per-day retorts started in 1988 was stopped because of lack financing.

Modernization of vertical retorts was carried out under the leadership of V. Yefimov. Internal construction of retorts was modified aiming at better input and distribution of heat carrier. V. Yefimov not only led the construction works at the factory but defended the theses of Ph.D. and D.Sci degrees as well. Kohtla-Järve became one of the most important centers of oil shale research of the whole former U.S.S.R.

V. Yefimov was an erudite in the field of oil shale science, which was responsible for providing the state with fuel. His efforts in this field were highly required at the state level. He has published 250 papers and registered 18 patents. He led the scientific activity of the Oil Shale Institute for over 40 years and shared his knowledge with oil shale specialists in Estonia, Russia (Slantsy, Saratov), China, Kazakhstan, etc. V. Yefimov belonged to the editorial boards of "Energy Sources" (USA) and "Oil Shale".

V. Yefimov was an educated active and interesting person with deep musical interests who was good at playing the piano.

V. Yefimov passed away on November 11, 2002.

*Aili KOGERMAN*