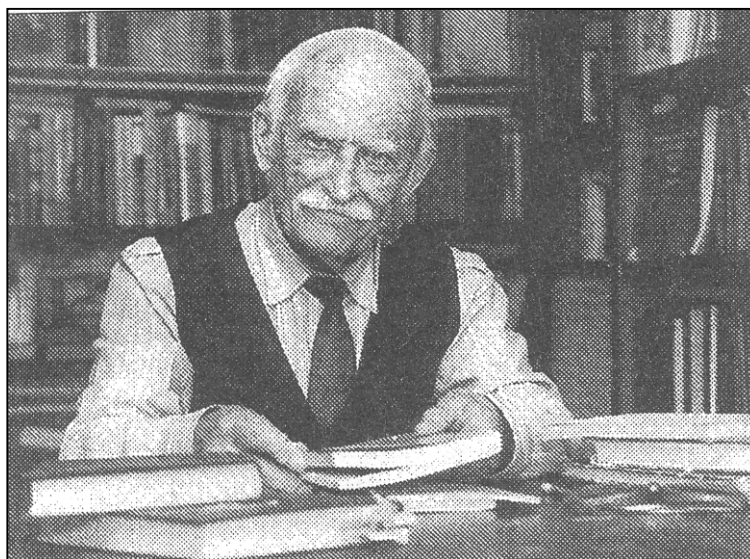


PEOPLE

PROFESSOR V. KASHIRSKI 90



On June 3, 2004 a famous Russian scientist, Doctor in Engineering Professor Vladimir Kashirski celebrated his 90th birthday.

V. Kashirski's research activity was always devoted to studying the problem of complex usage of sulphurous low-calorific fuels. V. Kashirski is the founder of the Saratov scientific school in the field of gasification, thermal processing and complex energetic and technological usage of solid fuels. He worked at the Saratov State Technical University (SSTU) for about fifty years, and was the first head of the chair of industrial heat engineering and dean of the SSTU power faculty.

Under V. Kashirski's leadership basic researches on pyrolysis of solid fuels (peat, brown coal and oil shale) were done. These studies formed the basis for creating (also under his leadership) an original branch in technology of complex energetic and chemical application of these cheap fuels, whose reserves are practically inexhaustible in Russia.

The problem of Volga basin oil shales' usage is one of his most important spheres of research.

In the first half of the last century large oil shale, oil and natural gas fields were discovered in Saratov region. In 1934–1956 oil shales mined there were combusted at the Saratov Power Plant. However, because of low-efficient technology of combusting such high-ash and high-sulphur oil shale, it could not compete with natural gas of Saratov deposits, and as a result oil

shale mining gradually slowed down and mines were closed.

Recently, new prospective deposits of oil shales and oil were found in Volga basin, and also the technologies of organic fuel processing and combustion were improved. In view of it, V. Kashirski considers that nowadays the fuel and energy complex of Saratov region should develop in accordance with the present-day requirements, which is possible only when extraction and effective utilization of all kinds of organic fuel available in the area are combined.

As of 01.01.2002, Saratov region's fuel resources are estimated as follows: extractable resources of hydrocarbon raw material (oil, natural and accompanying gases) 1,128.4 million tonnes of oil equivalent, and oil shales 10.2 billion tonnes conditioned shale that equals 1,520 million tonnes of oil equivalent.

Being a potential source of hydrocarbons, oil shale organic matter is often named 'dry oil'. Then, comparing the above figures, it is obvious that 'dry oil' resources in Saratov region almost 1.5 times exceed those of liquid and gaseous hydrocarbons.

Professor V. Kashirski is confident that the actual importance of oil shales for the economy of the region will increase. Oil shale layers lie on small depths whereas oil and gas are to be extracted from considerable depths needing big capital outlays.

In Saratov region, at the largest oil shale deposits, Perelyub and Kotcebinsk fields, oil shale can be mined by cheap opencast method, 700 million tonnes oil shales being suitable for opencast extraction. However, when estimating the prospects one should keep in mind that, contrary to Estonian oil shales, those of Volga basin are high-ash and high-sulphur ones and difficult to be used as a fuel. In particular, it is unacceptable to combust them in shaft-mill-type furnaces, in use until now, for sulphur dioxide content in the products of oil shale combustion in such furnaces exceeds 7 g per m³.

V. Kashirski participated in development and approval of new methods of oil shale combustion preventing or sharply limiting the emission of sulphur dioxide into atmosphere. As a result, it was recommended to burn oil shale in circulating fluidized bed in the furnaces of small industrial boiler-houses. Co-work with the researchers of the Ural Technical University has shown that at combustion of Volga oil shales in such furnaces the stack gas contains less than 400 mg sulphur dioxide per m³ not exceeding the ecological limits. Under V. Kashirski's leadership, at SSTU a method of oil shale pyrogasification allowing to design ecologically safe thermal power plant utilizing Volga oil shales was developed and tested at a large-scale test rig.

Basing on the researches, V. Kashirski suggests to start and gradually proceed with practical arrangements aimed at including oil shales into the fuel-energy balance of Saratov region.

Professor V. Kashirski is of the opinion, that at the first stage it is necessary to create an enterprise for oil shale open-pit mining. Small boiler-houses equipped with steam or water-heating boilers should become first consumers of mined oil shale. Power equipment for these enterprises can be delivered by the local factory. At the second stage excavating should gradually increase in Volga basin, and the circle of oil shale consumers extend.

Involving oil shales into fuel-energy balance will essentially reduce the dependence of Saratov region on gas delivery from the remote areas and strengthen the power safety of the region.

*Prof. V. Kashirski is one of the founders of the journal **Oil Shale** in 1984. He has belonged to the journal's editorial board for twenty years and has published in our journal twelve scientific papers concerning the problems of utilization of Volga basin sulphur-rich oil shales.*

We are very grateful to Prof. V. Kashirski for his active participation in editorial board's activity and wish him new scientific achievements, lasting co-operation and good health.

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