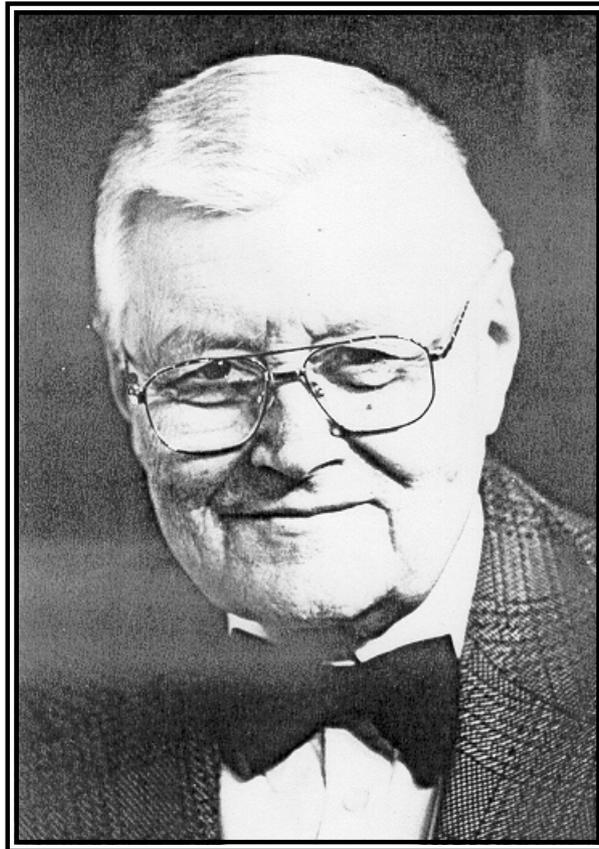


Ilmar ÖPIK
17 June 1917–29 July 2001



Ilmar Öpik's death on July 29, 2001 was a great loss to Estonian scientific and engineering community.

Grand old man of Estonian engineering, whose activities were directly related to oil shale power engineering and teaching at Tallinn Technical University, has passed away.

Ilmar Öpik was born in Tallinn on June 17, 1917. His father Paul Öpik was a leading financier in Estonia, the Director of the Estonian Bank and the President of the Bank for Long-Term Loans. Brothers of Paul Öpik, the astronomer Ernst Öpik and the geologist Armin Öpik, were internationally known scientists.

Ilmar Öpik started his education at the Tallinn Secondary Scientific School (Tallinna Reaalkool) and continued it at the Gustav Adolf Gymnasium. In 1940 he graduated from the Tallinn Technical University *cum laude* with the diploma in mechanical engineering.

From 1937 until 1940, still a student, Ilmar Öpik worked at the Franz Krull Machinery Plant in Tallinn, participating in the design of oil shale processing plants for Estonia and Australia. In the beginning of 1941, Ilmar Öpik started postgraduate studies at Tallinn Technical University under the supervision of professors Einberg and Kopvillem. He began to study the influence of oil shale ash sintering on boiler refractory materials. The outbreak of World War II took Ilmar Öpik to the district of Sverdlovsk, where he worked as an engineer in the field of power engineering. Having returned to Estonia, Ilmar Öpik participated in the reconstruction of Estonian oil shale processing enterprises and power plants. In 1946 Ilmar Öpik became Assistant Professor of the Thermal Engineering Department at Tallinn Technical University. In 1957 he was elected the Head and in 1963 - the Head and Professor of this department where he delivered courses on fuels and steam boilers.

Since 1968 Ilmar Öpik has been connected with the Estonian Academy of Sciences. First as Academician-Secretary of the Department of Physics, Mathematics and Technical Sciences and in 1977–1987 as Vice-President. He retired in 1987. During the last decade he worked as an expert on the energy economy by the Ministry of Economic Affairs of Estonia and also as Head of the Oil Shale and Electricity Price Committee.

In 1967 Ilmar Öpik was elected Corresponding Member of the Estonian Academy of Sciences and in 1972 Member of the Academy. He was also elected Member of the Finnish Academy of Technology (1992).

Ilmar Öpik's scientific activities culminated between 1950–1970. In this period he compiled and defended the thesis for the degree of the Candidate of Technical Sciences (PhD) "On the sintering of fly ash deposits on the heating surfaces by burning Estonian oil shale" (1953), founded the Research Laboratory of Heat Engineering at Tallinn Technical University (1960), published a book on oil shale utilization in power plants (1961), and defended his PhD thesis "The influence of oil shale mineral matter on boiler working conditions" (1963). Ilmar Öpik focused his main research interest on the utilization of oil shale as a fuel with high content of calcium and alkali metals. He created the theory of the formation of bound ash deposits on boiler heat transfer surfaces. This theory relates the thermal, mechanical and chemical processes in an original way. He was the first to draw attention to the fact that the intensity of fouling fuel ash deposits on boiler heat transfer

surfaces is simultaneously determined by a combination of mechanical and chemical processes. This theory and experimental investigations in this field enabled him to formulate a number of practical recommendations relevant to the design and exploitation of modern oil shale steam boilers.

Ilmar Öpik was a pioneer in the research on the high-temperature corrosion and wear of boiler heat transfer surface tubes. He was the first to prove a correlation between the intensity of wear of boiler tubes and the high-temperature corrosion activity of the ash. Also, in the middle of the sixties of the last century, he started an original experimental study of the high-temperature corrosion of boiler steels under the influence of the fuel ash and of the surrounding gaseous atmosphere. The primary aim of these kind of investigations was to design new steam boilers for burning solid fuels with complicated composition of the mineral matter. Besides studies on utilization of oil shale in power plants, Ilmar Öpik paid much attention to oil shale thermal processing. He also investigated the risk factor in the application of new combustion and processing technologies. He has published more than 150 scientific papers.

Besides research work and teaching, Ilmar Öpik considered most important publication of scientific articles and editing scientific journals. He was the first editor-in-chief (1984–1996) of the international scientific-technical journal “Oil Shale” and a member of the editorial boards of “Oil Shale”, “Proceedings of the Estonian Academy of Sciences”, and “Transactions of All-Union Universities, Energetics”. He was also active as an expert of the All-Union Higher Evaluation Committee (VAK).

Ilmar Öpik was awarded the Estonian Technical Science Prize (1970), the State Technical Prize of the USSR (1983), the K. E. von Baer Medal (1984), P. Kogerman Medal (1991), and the 3rd Class Order of the National Coat of Arms (1996).

His sphere of interests was extremely wide including sailing, tennis, skiing, bridge, and fishing. Ilmar Öpik was a man with extraordinary ability to combine complicated scientific problems with ingenious engineering solutions. Friends and colleagues will remember Ilmar Öpik as a brilliant personality, talented researcher and teacher.

*OIL SHALE Editorial Board
and Editorial Office*