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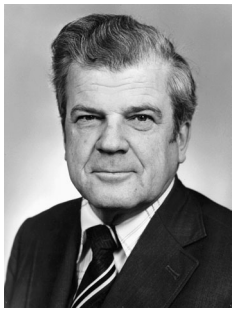
in memoriam

In remembrance of Ilmar Mikk
85 th anniversary of his birthday

1.03.1925–24.06.1989



Ilmar Mikk was since his student years from November 1944 until his death on June 24, 1989, bound to Tallinn University of Technology (earlier Tallinn Polytechnic Institute). During these 45 years, starting as a student of the Faculty of Power Engineering in 1944–1950, he passed a long way working as senior laboratory assistant in 1950, assistant in 1950–1953, senior teacher in 1953–1958, associate professor in 1958–1969 (meanwhile also pro-dean of the Faculty of Power Engineering, in 1958–1962), and since 1969 Professor at Department of Thermal Engineering. His main speciality was heat and mass transfer.

In his work as a teacher, Ilmar Mikk was very prolific. He also wrote the part "Heat Transfer" (heat transfer theory, heat conductivity, convective transfer, heat exchange with radiation and heat exchangers) for the University textbook "Heat Engineering", published twice (in 1966 and 1974).

His favourite subject was radiative heat transfer in the radiation-absorbing medium, and for the first time the university's course in heat transfer has included the correctives concerning optical thickness of the environment, in the case of great optical densities of gas mixtures.

Several authoritative university textbooks about heat transfer in Russian and German include Ilmar Mikk's conceptions and theoretical interpretations.

In spite of the fact that his first scientific paper ("The Flame's Radiation in Metal Heating Furnaces Using Oil Shale"), written in 1949 and awarded 2nd prize in the competition of students' papers at Tallinn Polytechnic Institute dealt already with heat radiation, the principal theme of his work as

a scholar later on, the first stage of Ilmar Mikk's scientific work was done in another field. In September 1953, Ilmar Mikk successfully passed entrance exams to post-graduate correspondence courses, which lasted for 4 years at Tallinn Polytechnic Institute's Department of Thermal Engineering and were supervised by Associate Professor I. Öpik. The postgraduate had to solve the fouling problems of oil shale boilers' heat surfaces and study the processes occurring in boilers in oil-shale mineral part. It was the time when big power plants based on oil shale fuel were erected.

Postgraduate Ilmar Mikk's research appeared to be fundamental. The thesis written in Estonian "Oil-Shale Kukersite's Fly Ash Hardenings on Tubes" was successfully defended at the Board of Engineering and Physical-Mathematical Sciences by the ESSR Academy of Sciences on October 3, 1957.

After defending Ph.D. thesis, I. Mikk returned to the research in heat radiation. The years 1960–1964 were most intensive and prolific on his way to become a leading specialist in this field. In these years 13 papers were written published in leading magazines for heat physics in the U.S.S.R. and the U.S.A. During this period he completed the thesis for Doctor's degree and defended it in Tallinn at the Academy of Sciences in October 1969.

Which were the fundamental "morsels" that put the scholar, Ilmar Mikk, in the front ranks of the theoreticians, writing about heat transfer?

Ilmar Öpik, Member of the Estonian Academy of Sciences, thought that one of them was, primarily, giving up tackling the radiative gas volume as an isothermal unit, and also creating methods to analytically interpret the arisen complicated situation. His models offered several practical calculating methods and know-how for textbooks, as well as surprisingly interesting cognitive interpretations. The second "morsel" could be tackling great optical densities in radiative volumes, the third one – the exchange of angle factors in the environmental systems absorbing radiation, etc., for in each of the 18 articles by Ilmar Mikk, mentioned in the abstract of his doctoral thesis one can find something new and original.

The period following the completing his doctorate's thesis finds Ilmar Mikk broadening his interests towards other forms of heat transfer – convective heat transfer and heat conductivity. The scholar became not only an active teacher for his regular students, but also for those who studied at post-graduate courses or wanted to defend their theses.

Ilmar Mikk has been repeatedly called the creator of the heat transfer school, both in Estonia and elsewhere.

Colleagues of Ilmar Mikk from Tallinn University of Technology think that without his bright scientific ideas, work as a teacher and his personal example there would have been neither the scientific laboratory nor the scientists working there.

Member of advisory board
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