

HEAT AND MASS TRANSFER IN MODERN ENERGY SYSTEMS

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The VIII ICHMT Symposium on Heat and Mass Transfer in Modern Energy Systems was held in the aftermath of the first energy crises of 1973-1974 and the pessimistic Roman Club forecasts, at a time when many of the prelevant ideas on energy development changed. It became apparent that the mostly inexpensive oil spurred exponential growth of energy consumption had come to an end. It also became clear that environmental protection had to be taken into account when considering the future of energy. All this increased the significance and contributed to the perfect timing of the ICHMT Symposium in August of 1975.

Of course, today, 13 years later, a considerable portion of the material presented, the assesment of the relative significance of various energy sources, in particular, seems pretty trivial. It should be noted, that the assumptions in the majority of the publications at that time, and long there after seem absurd today.

It is sufficient to recall that R. Gibrat stated in his presentation that "almost everyone agrees, that use of fossil fuel is doomed by the year 2000" and that the development of the power industries will be based on nuclear energy used to produce electricity and hydrogen. It is evident that J. Denton was much more perceptive in his paper "Perspectives of World Energy Production", an assesment of long-term energy source options. He laid emphasis on the more efficient use of traditional fossil and nuclear fuel and new techologies ensuring a higher level of environmental protection. Also of note is his discussion of heat resource quality (their energy potential) and the correctness of his assesment that the many energy sources then considered the energy sources of the future-solar energy, geothermal energy, marine temperature gradients are actually energy sources of low quality. It is significant that the author also attempted to evaluate energy sources not only on the basis of available reserves but also on the economics of their use. Today, we are of course used to this approach, though the economics are today somewhat different, the current price of oil still an indicator of the price of energy (incorporating inflation) being close to that in 1975.

If we consider the lectures and presentations at the Symposium, it is evident that during that "turbulent" time, the most exotic ideas on the perspectives of energy development were widespread. Nevertheless the Symposium as a whole, being devoted to fossil fuel and nuclear systems heat transfer in sufficient degree, had an impact on the technologies prerequisite to energy development in the forseeable future.