Iliya R. Prigozhin
(25 January, 1917 – 28 May, 2003)

Iliya R. Prigozhin, aged 86, Nobel Prize Winner, Belgian scientist of the Russian origin, died on 28 May in Brussels. Prigozhin made a number of prominent discoveries in the field of thermodynamics and statistical mechanics of nonequilibrium processes. In particular, he developed a concept of irreversibility as applied to thermodynamics. Prigozhin was studying time as a physical phenomenon. In 1977, he was awarded the Nobel Prize for chemistry "for works on thermodynamics of nonequilibrium processes".

The scientist formulated one of the major theorems of the theory of nonequilibrium processes. This theory was later named after him. According to Prigozhin's theorem, stationary state of the system corresponds to minimal entropy generation. The outstanding physicist was also an initiator of applying methods of theory of nonequilibrium processes in biology.

Thermodynamics principles were enunciated in the middle of the XIX century after the invention of a steam-engine, when interaction of heat, electrical, and mechanical work aroused a higher interest. In accordance with the first law of thermodynamics representing an energy conservation principle, energy neither disappears nor appears in any closed system, but transforms from one form to another.

The Prigozhin's theorem sounds as follows: stationary state of the system (under conditions impeding attainment of equilibrium state) corresponds to the minimal generation of entropies. If there are no such impediments, then production of entropy reaches its bare minimum, i.e. zero. The theorem was proved by Prigozhin in 1947.
In thermodynamics the nonequilibrium specifically open systems were of most interest for Prigozhin. In such systems either or both (matter and energy) interchange in reactions with an environment. At that, quantity of matter and/or energy increases or decreases in the course of time.

It is obvious that human society as well as the biological environment is an example of dissipative and nondissipative structures. In the 60s and 70s, Prigozhin developed his theory of dissipative structures and described the formation and development of embryos. Critical points of bifurcation in his mathematical model are correlated with a point, where a biological system becomes consecutive and stabilized.

For his scientific career time, the physicist was awarded over 40 scientific rewards and admitted as an honorary member into national academies of many countries all over the world.