

OBITUARY

Professor Vicomte Ilya Prigogine (1917–2003)



Ilya Prigogine was born in Moscow in 1917 and migrated along with his family in 1921 first to live in Germany and then finally in Belgium. His interests lay in history, archeology and music especially piano which he loved deeply. However, circumstances and coincidences made him to exactly the opposite, taking up physics and chemistry. He obtained undergraduate and graduate education in chemistry and physics and doctorate in chemistry at the Université Libre de Bruxelles.

Under the tutelage of Théophile De Donder and Jean Timmermans and his own personal attraction to concept of time, Prigogine became interested in the second law of thermodynamics. He was deeply influenced by Bergson's remark in '*L'évolution créatrice*', "The more deeply we study the nature of time, the better we understand that duration means invention, creation of forms, continuous elaboration of the absolutely new." Prigogine was particularly captivated by the problem of explaining how ordered structures - biological systems, for example - can develop from disorder. He had conviction that irreversibility is a fundamental phenomenon of nature rather than an empirical observation.

The laws of thermodynamics in 19 and early 20 Century used to applied only to the systems in equilibrium states. Prigogine chose to study systems which follow non-linear kinetic laws and which, moreover, are in contact with their surroundings so that energy exchange can take place - *open systems*, in other words. If these systems are driven far from equilibrium, a completely different situation result. Prigogine developed new formulations namely, minimum entropy production theorem and concept of dissipative structures. His work now makes it possible to study the most varied problems, such as city traffic problems, the stability of insect communities, the development of ordered biological structures and the growth of cancer cells to mention a few examples.

At the time of his death, Prigogine was Director of the International Solvay Institute for Physics and Chemistry in Brussels - a post he has held since 1959. He was also Professor of Physics and Chemical Engineering at the University of Texas where he founded the Centre for Thermodynamics and Statistical Mechanics. This Center was later named after him.

His works were distinguished by elegance and lucidity, which have earned him the epithet "the poet of thermodynamics". He was awarded the Nobel Prize in Chemistry for the year 1977 for his contribution to science in the field of thermodynamics. After winning the Nobel Prize, Prigogine began writing popular books about all this including '*Order out of Chaos*' (1989) and '*The End of Certainty*' (1997). Professor Vicomte Ilya Prigogine died on May 28, 2003, aged 86.