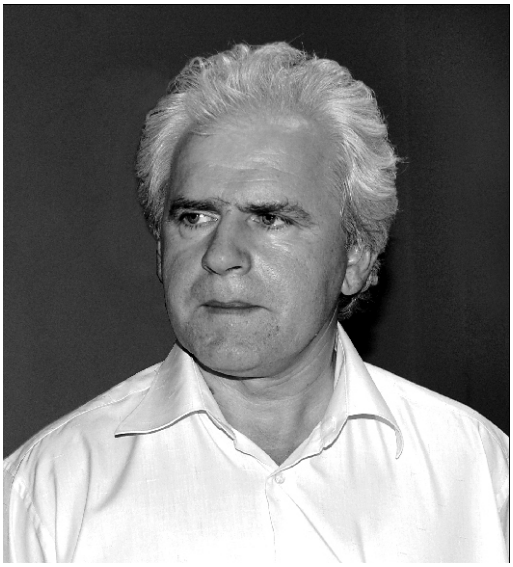
50th birthday of Mykhailo Tokarchuk



These days a renowned Ukrainian scientist, head of the Department of Nonequilibrium Processes of the Institute for Condensed Matter Physics of National Academy of Sciences of Ukraine, doctor of physics and mechanics, Professor Mykhailo Tokarchuk celebrates his 50^{th} birthday.

Mykhailo Tokarchuk was born on November 3, 1956 in the town of Broshniv of Inavo-Frankivsk region. In 1975 he entered the Physics Department of Ivan Franko Lviv State University. Having graduated from the University in 1980, he started his scientific activities in the Lviv Division of Statistical Physics of the Institute for Theoretical Physics. Early studies of Mykhailo Tokarchuk dealt with the theory of ionic-molecular systems. In particular, at that time, he developed in collaboration with Professor Ihor Yukhnovskii and Myroslav Holovko, the methods of calculating the group coefficients of distribution functions of NaCl and LiCl solutions taking into account the orientations of molecules.

New fruitful period in Mykhailo Tokarchuk's scientific activities started in 1984, when he got acquainted with Prof. Dmitry N. Zubarev an outstanding representative of Moscow school of statistical physics. Best human features and professionalism of Prof. Zubarev left an ineffaceable mark upon M.Tokarchuk's the scientific career. Under his supervision Mykhailo Tokarchuk continued his studies in the theory of solutions and developed a kinetic approach to the description of ionic-molecular systems. Among other problems of his interest there was the derivation of kinetic equations for dense fluids based on the nonequilibrium statistical operator (NSO) method and some problems related to turbulence in liquids.

In 1986 M.Tokarchuk defended his Ph.D. dissertation entitled "Investigation of the kinetic transport coefficients in the ionic-dipole systems", in which a successful attempt to construct a generalized hydrodynamics for ionic-molecular systems was made. Among the other problems, the spectra of mass and charge fluctuations in the ionic melts were investigated based on the NSO method. Hence, the revised Landau-Enskog kinetic equations for charged hard spheres were derived.

In the succeeding years Dr. Tokarchuk continued his studies in the theory of membranes and inverse osmosis (in collaboration with Prof. M.Holovko and Dr. I.Kurylyak) and kinetic theory of dense gases (in collaboration with I.Omelyan who defended the Ph.D. thesis under his supervision in 1990), but the main efforts were focused on the problem of self-consistent description of kinetics and hydrodynamics in condensed matter (in collaboration with Profs. D.Zubarev and V.G.Morozov). In 1990 he became the Head of the Laboratory of Nonequilibrium Processes in Gases and Plasma of the Institute for Condensed Matter Physics and four years later, in 1994, a doctoral thesis entitled "Consistent description of the kinetics and hydrodynamics of the system of interacting particles in the NSO method" was successfully defended by him.

Since 1996 Prof.Tokarchuk has been Head of the Department of Nonequilibrium Processes. New researchers appear in the Department, and wider becomes a list of problems considered. Being capable of choosing and solving scientific problems, as the saying goes being "on order of the day",

due to Prof. I.Yukhnovskii's initiative of he got involved in solving the complex of problems for minimizing the consequences of the catastrophe at Chornobyl nuclear power plant. A question of radionuclides migration in soils and water, interaction of aqueous solutions of radionuclides with fuel-containing masses inside the "Shelter" installation, elaboration of a new prospective technologies of the refinement of "block waters" by carbonate-containing clays modified by ferrocyanides of copper and iron – this is quite an incomplete list of the problems, being studied by Prof. Tokarchuk and his colleagues. His scientific achievements in this field have been recognized by Ukrainian authorities, and in 2006 Prof. Tokarchuk was awarded with Diploma of the Supreme Council of Ukraine for a distinguished contribution to the elimination of the consequences of the Chornobyl disaster, development of Ukrainian science and high professionalism.

In 2003 Mykhailo Tokarchuk together with Ihor Mryglod and Yuri Rudavskii became a laureate of S.I.Pekar's Award of the National Academy of Sciences of Ukraine for the series of papers "Theory of dynamic properties and phase transitions in liquid magnets".

Mykhailo Tokarchuk is known not only as a prominent organizer and popularizer of science but also as an adviser and inspirer for talented scientific youth. No narrative of Tokarchuk's contributions to science can be made complete without mentioning his impact on the scientists who have learned statistical mechanics of nonequilibrium processes under his guidance. Some of the young staff members of the Institute for Condensed Matter Physics were fortunate enough to have M. Tokarchuk as both a classroom instructor and Ph.D thesis advisor in the early days of the Institute. M. Tokarchuk was then, and remains today, a dedicated, enthusiastic, inspiring, and highly masterminded teacher. His words of advice, recommendations and encouragement helped many students and young researchers to choose their own and, which is of prior importance, prospective trends in various fields of theoretical physics. He was a supervisor of four researchers of the Institute for Condensed Matter Physics who defended their Ph.D. thesises. Since 2001 Prof. Tokarchuk has been carrying out scientific and educational work at the Applied Mathematics Chair of Lviv Polytechnic National University instructing graduate and postgraduate students. For many young people he is a source of a wisdom advice and enthusiastic cheerleader. He is a truly supportive person who takes great interest and pride in the careers and well-being of his students. And he is a great mentor for his junior colleagues: knowing him as a Department co-worker is quite a rewarding experience. In the last years Prof. Tokarchuk is head of the State Examining Board at the Physics Department of Ivan Franko National University in Lviv.

Prof. Tokarchuk is author of more than 150 scientific papers in the field of nonequilibrium statistical theory of condensed matter, statistical theory of the inverse osmosis transport of ions and molecules through the membranes, nonequilibrium thermo-field dynamics of the quark-gluon plasma, statistical mechanics of the reaction-diffusion processes in the theory of catalysis, modelling of the hydrolysis and radiolysis processes in aqueous solutions and many others. He is a member of the Specialized Councils at the Institute for Condensed Matter Physics and at the Precarpathian Vasyl Stefanyk National University in Ivano-Frankivsk. For many years he has been a member of the Editorial Board of the "Condensed Matter Physics" journal. He initiated several special issues of the journal related to various fields of condensed matter physics and nonequilibrium statistical mechanics, which were highly acknowledged by the international physics community.

In his fifty, Mykhailo Tokarchuk is full of energy, enthusiasm and creative plans. He generously favours all of us with these remarkable virtues. On behalf of the students, postdoctoral scholars, colleagues, visiting scientists who have worked with Professor Mykhailo Tokarchuk, and of the Editorial Board members, we are delighted to mark his 50^{th} birthday and wish him and his family to stay in good health and to enjoy many happy years of his life.