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*Foreword*

# Modern trends in liquid state theory: a Festschrift for Yurij Kalyuzhnyi

On July 20, 2011 Yurij Kalyuzhnyi celebrated his 60th birthday. On this occasion the Editorial Board of "Condensed Matter Physics" decided to honour him with a collection of scientific papers. Numerous researchers, colleagues and co-workers of Yura have gladly contributed their articles. On behalf of the "Condensed Matter Physics" Editorial Board, I want to express sincere gratitude to all of them. Highly skilled contributions reflect the modern development of liquid state theory in different areas which are close to Yu. Kalyuzhnyi's interests during many years of his scientific activity.

Yu. Kalyuzhnyi was born in Lviv on July 20, 1951. After graduating in 1973 from Ivan Franko Lviv State University he started his scientific work at the Institute of Geology and Geochemistry in Lviv. But soon he comprehended the importance of statistical mechanical theory of fluids for understanding and interpreting different geological processes. In 1980 he became a PhD student in the Lviv branch of the Bogolyubov Institute for Theoretical Physics. In 1987 Yurij Kalyuzhnyi received the PhD and in 2000 the degree of Doctor of Sciences. During this time he continued to work in the Lviv branch of the Bogolyubov Institute for Theoretical Physics. In 1990 this Lviv branch was reorganized into Institute for Condensed Matter Physics where Yu. Kalyuzhnyi continues to work and currently holds a position of a leading researcher.

The main field of scientific activity of Yu. Kalyuzhnyi is connected with the development of new approaches for the description of complex liquids with strong interparticle interactions. In particular, he generalized Wertheim theory of associated fluids for different special cases. The developed multidensity integral equation approaches were successfully applied for the electrolyte and polyelectrolyte solutions, dimerizing, polymerizing and network forming fluids, water and aqueous solutions. Consideration of multidensity integral equation formalism in the limit of complete association enabled Yu. Kalyuzhnyi to reformulate the site-site approach in the theory of molecular and macromolecular fluids. Besides, Yu. Kalyuzhnyi essentially contributed to the description of the phase behaviour of polydisperse colloid and polymer fluids, to the development of solvation thermodynamics of gas solubility at subcritical and near-critical conditions as well as investigated the structure of fluids under shear and other fields. As an associate researcher he has been working at the universities and scientific institutes all over the world, including Institute for Chemical Problems Fundamental of Czech Academy of Sciences at Prague, University of Utah at Salt Lake City, State University of New York at Stony Brook, University of Tenessee at Knoxvill, Vanderbil University at Nashville, University of Ljubjana, University of Puerto Rico, Technische University of Wien, University of Oklahoma, etc. He is the author and co-author of more than 100 papers with h-factor equal to 23. He is also a co-author of a chapter in the collective monograph in IUPAC volume on Equations of state for fluids and fluid mixtures (Elsevier 2000). Yura kindly agreed to write a few words about his way to Science which we gladly publish together with his bibliography.

Yura is a very intelligent and attractive personality. Apart from liquids he enjoys mountain skiing and other kinds of sport. He also likes jazz music, modern arts and modern literature.

The Editorial Board of "Condensed Matter Physics" congratulates our good friend and a member of the Editorial Board on the occasion of his anniversary and acknowledges his unique and valuable contribution to science. We also wish him to stay in good health, be happy and prosperous.

*Myroslav Holovko*