

PREFACE

In January 2009, 80 years passed since the Research Institute of Physics had been founded. Nowadays, the Institute of Physics of the National Academy of Sciences of Ukraine is its successor. This institute, together with the famous Ukrainian Physico-Technical Institute that had been founded in Kharkiv practically at the same time, played a key role in the subsequent formation and development of physical science in Ukraine. A lot of world-class scientists in various branches of physics, who were also bright personalities – such as P.G. Borzyak, V.L. Broude, O.S. Davydov, S.I. Pekar, A.F. Prikhot'ko, V.E. Lashkarev, O.I. Leypunskii, N.D. Morgulis, and others – worked at the Institute. That is why a key feature of the Institute since the start of its activity has been the diversity of researches – from gas electronics and solid state physics to nuclear physics and materials science – against the background of an exceptionally benevolent atmosphere for the freedom of creativity in a team of talented researchers. To our opinion, just those two factors resulted in that the Institute, on the one hand, substantially promoted both the formation of a highly professional scientific staff and the development of new physical centers in Ukraine and, on the other hand, became an attractive center for talented scientific youth. A number of known and authoritative scientific schools were initiated at the Institute. The latter became a basis for the organization of five new academic institutes. Despite unfavorable conditions for the science development during recent years, the Institute managed not only to preserve the basic scientific staff, but, on the contrary, an impetus has been given to researches in a number of new directions. In particular, in the last years, besides the studies that are traditional for the Institute (in solid state physics, gas electronics, surface science, nonlinear optics, and other branches), those in nanophysics, soft matter physics, quantum and singular

optics, and others were carried out at a high world-class level. Although large difficulties are faced with, the experimental basis does gradually improve. The work conditions for Institute's employees get better. Wide contacts with leading foreign scientific centers play not the least role in the successful activity of the Institute.

The special issue of the Ukrainian Journal of Physics, which is brought to your attention, is devoted to the 80-th anniversary of the Institute of Physics. The Editorial Board tried to include those works in this issue which represent the modern scientific face of the Institute – a scientific institution which is proud of its traditions, open to new tendencies in the development of physics, and incorporated into the world scientific community. We are very grateful to all the authors who replied to the Editorial Board's invitation to submit their best fresh results to be published in the festive issue of the journal. We are especially thankful to those researchers, for whom the large part of their life was and is connected with the Institute of Physics, but who work nowadays beyond the Institute, both in Ukraine and abroad; their participation in the creation of this issue was especially valuable and pleasant for us.

Finally, the Editorial Board wishes to thank everybody who participated in the preparation of this issue of the journal. Special thanks are due to Dr. O.V. Uskova for her tedious work on paper collection and to the UJP editorial staff for their strenuous efforts on the preparation of this collection for publication.

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