

PREFACE

This issue of **PROBLEMS OF ATOMIC SCIENCE AND TECHNOLOGY** contains papers presented at the International Conference on Quantum Electrodynamics and Statistical Physics, "QEDSP2001", Kharkov, Ukraine. The Conference was held at the National Science Center "Kharkov Institute of Physics and Technology" (NSC KIPT) from October 30 to November 3, 2001. It was dedicated to the 90th birthday anniversary of Academician Alexander Il'ich Akhiezer (October 31, 1911 – May 4, 2000) who made an outstanding contribution to theoretical physics.

The Conference QEDSP2001 was initiated by the Institute for Theoretical Physics of NSC KIPT (ITP NSC KIPT). The organizers of this Conference were the Ministry for Education and Science of Ukraine, the National Academy of Sciences of Ukraine, the National Science Center "Kharkov Institute of Physics and Technology", the Institute for Theoretical Physics of NSC KIPT, and the Kharkov National University.

At the Conference there were more than 110 Ukrainian participants and about 30 participants from Armenia, Argentina, Belgium, Brazil, France, Germany, Italy, Poland, Russia and USA. The Scientific Program of the Conference included more than 70 oral and 38 poster presentations. The topics of the QEDSP2001 dealt with modern problems of quantum field theory, quantum electrodynamics, the statistical physics, kinetic theory, anomalous diffusion, fractals and chaos. The basic topics of the Conference were closely connected with the main fields of A.I. Akhiezer's research activities.

The memorial session dedicated to the 90th anniversary of A.I. Akhiezer's birth was held on October 31. Fragments of the video film "A.I. Akhiezer tells about L.D. Landau" were shown. The film was recorded on January 1998 during the session of Scientific Council of ITP NSC KIPT dedicated to the 90th Landau's anniversary.

A number of participants, in particular, Prof. V.P. Silin, the Lebedev Physical Institute, Moscow, Prof. G. Röpke of the Rostock University, Rostock, and Prof. P.I. Fomin of the Bogolyubov Institute for Theoretical Physics, Kiev, proposed to make the conference regular.

Part I of this issue contains the papers on quantum field theory and quantum electrodynamics. Papers devoted to the statistical physics problems, kinetic theory, phase transitions, fractals and chaos are included in Part II.

The members of the Organizing Committee and the Editorial Board are very grateful to all who helped them in the organization of the Conference and preparation of this memorial issue. Financial support for the publication of this issue from the Science and Technology Center in Ukraine (STCU), which had also supported the Conference, is gratefully acknowledged. We thank the International Association for the Promotion of Co-operation with Scientists from the New Independent States of the Former Soviet Union (INTAS) for the INTAS Monitoring Conference Grant 01 MO199, 2001.

*Organizing Committee of QEDSP2001 and Editorial Board
National Science Center "Kharkov Institute of Physics and Technology",
Kharkov, Ukraine, 2001*

QUANTUM ELECTRODYNAMICS AND STATISTICAL PHYSICS

**International Conference,
dedicated to the 90th anniversary of Alexander Il'ich Akhiezer**

October 30 – November 3, 2001

*Institute for Theoretical Physics
National Science Center "Kharkov Institute of Physics and Technology", Kharkov, Ukraine
Supported by INTAS and STCU*

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