

PREFACE

We would like to offer the readers the scientific activity report of the Frank Laboratory of Neutron Physics for 2012. The first part of the report presents a brief review of the experimental and theoretical results achieved in the main scientific directions – condensed matter physics, neutron nuclear physics, applied research and development and creation of elements of neutron spectrometers for condensed matter investigations. The second part includes the reports on the modernization of the IBR-2 pulsed reactor and the development of the IREN neutron source. A list of publications for 2012, the information regarding the seminars and conferences organized in FLNP and a statistical view on the FLNP personnel structure are presented as well. The experimental reports that cover the main scientific directions in greater detail complete the report.

In 2012 the main achievements of the Laboratory were:

- obtaining of the license for regular operation of the IBR-2M reactor;
- resumption of the user program at the IBR-2M spectrometers;
- successful start-up of the cold neutron moderator at the IBR-2M reactor.

Both of the FLNP basic neutron sources, the IBR-2M reactor and the IREN facility, operated for about 1500 hours for physics experiments.

FLNP has cooperation agreements in the field of neutron investigations with almost 200 scientific institutes and universities from 39 countries from all over the world. A significant contribution to this cooperation is made by the JINR Member States.

The FLNP staff consists of more than 400 employees. The scientific staff includes 71 Ph.D. and 19 D.Sci. researchers and 70 researchers and specialists from the JINR Member States (besides the Russian Federation) with more than two thirds of them under 35 years of age.

The organization of annual conferences and schools covering all FLNP research fields helps to recruit young specialists — one of the top priority tasks of the FLNP Directorate.

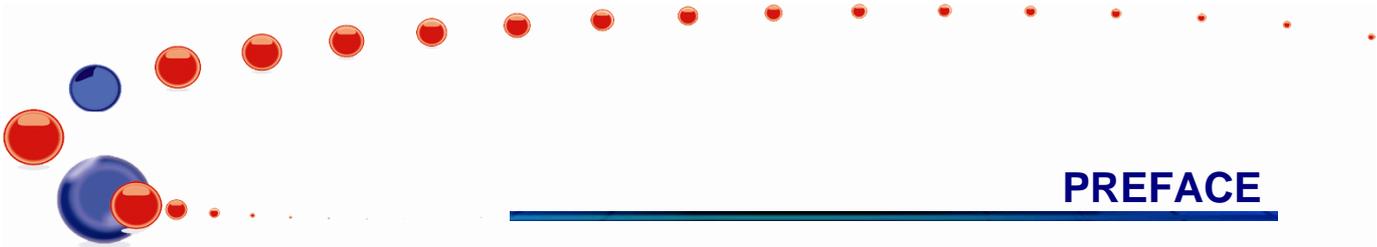
All these facts confirm that the Laboratory continues to develop successfully and dynamically, carrying out investigations in the interests of the JINR Member States.

In 2012 the world scientific community celebrated 80 years since the discovery of the neutron by James Chadwick. The cover of the FLNP Annual Report is devoted to this significant event featuring J.Chadwick's portrait and fragments of his paper that brought him the Nobel Prize in Physics.

A.V. Belushkin
Director



2012
Annual Report



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At the end of 2012 the Directorate of the Laboratory completed its term of office. Among its members were:



BELUSHKIN
*Alexander
Vladislavovich*
Director
since 2001

Deputy Directors for Science

SHVETSOV
*Valeryi
Nikolaevich*
since 2001



SANGAA
Deleg
since 2009



KOZENKOV
*Sergey
Vyacheslavovich*
**Deputy Director
for General Issues**
since 1989



VINOGRADOV
*Alexander
Vital'evich*
Chief Engineer
since 2007

CULICOV
Otilia Ana
Scientific secretary
since 2008

