

## 7.1. STRUCTURE OF LABORATORY AND SCIENTIFIC DEPARTMENTS

**Directorate:**  
Director:  
V.L.Aksenov  
Deputy Directors:  
A.V.Belushkin  
W.I.Furman  
Scientific Secretary:  
V.V.Sikolenko

**Reactor and Technical Departments**  
Chief engineer: V.D.Ananiev  
**IBR-2 reactor**  
Chief engineer: A.V.Vinogradov  
**IBR-30 booster + LUE-40**  
Head: S.A.Kvasnikov  
**Nuclear physics and pulsed neutron sources sector**  
Head: V.L.Lomidze  
**Mechanical maintenance division**  
Head: A.A.Belyakov  
**Electrical engineering department**  
Head: V.P.Popov  
**Design office**  
Head: V.I.Konstantinov  
**Construction**  
Head: A.N.Kuznetsov

**Scientific Departments and Sectors**  
**Condensed matter department**  
Head: A.M.Balagurov  
**Nuclear physics department**  
Head: V.N.Shvetsov  
**Department of electronics, computers and networks**  
Head: V.I.Prikhodko  
**Department of IREN**  
Head: A.K.Krasnykh  
**Activation analysis and radiation research sector**  
Head: V.A.Sarin  
**Applied research sector**  
Head: V.I.Luschikov

**Administrative Services**  
Deputy Director: S.V.Kozenkov  
Secretariat  
Finances  
Personnel

**Scientific Secretary Group**  
Translation  
Graphics  
Photography  
Artwork

## THE CONDENSED MATTER DEPARTMENT

Sub-Division	Title	Head
Group No.1	HRFD	A.M.Balagurov
Group No.2	DN-2	A.I.Beskrovnyi
Group No.3	DN-12	B.N.Savenko
Group No.4	HRNS	K.Ullemeyer
Group No.5	SNIM-2	V.W.Nietz
Group No.6	YUMO	M.A.Kiselev
Group No.7	Biomolecular neutron diffraction	I.N.Serdyuk
Group No.8	SPN-1	Yu.V.Nikitenko
Group No.9	REFLEX	D.A.Korneev
Group No.10	NERA-PR	I.Natkaniec
Group No.11	KDSOG	A.Yu.Muzychka
Group No.12	DIN-2	Zh.A.Kozlov
Group No.13	EG-5	A.P.Kobzev
Group No.14	Theoretical condensed matter physics	E.I.Kornilov
Group No.15	Technical support	V.V.Zhuravlev

## THE NUCLEAR PHYSICS DEPARTMENT

Sub-Division	Title	Head
Group No.1	Polarized neutrons and nuclei	V.P.Alfimenkov
Group No.1	Neutron spectroscopy	A.B.Popov
Group No.3	Nuclear reactions	Yu.S.Zamyatnin
Group No.4	Properties of the neutron	Yu.A.Alexandrov
Group No.5	Proton and $\alpha$ -decay	Yu.M.Gledenov
Group No.6	Properties of $\gamma$ -quanta	A.M.Sukhovoy
Group No.7	Radiation capture of neutrons	G.P. Georgiev
Group No.8	Ultra-cold neutrons	V.N.Shvetsov
Group No.9	Neutron structure	G.S.Samosvat
Group No.10	Rare reactions	Yu.N.Pokotilovsky

## 7.2. USER POLICY

The IBR-2 reactor usually operates 10 cycles a year (2500 hrs. total) to serve the experimental programme. A cycle is established as of 2 weeks of operation for users, followed by a one week period for maintenance and machine development. There is a long shut-down period between the end of June and the middle of October.

All experimental facilities of IBR-2 are open to the general scientific community. The User Guide for neutron experimental facilities at FLNP is available by request from the Laboratory's Scientific Secretary.

Condensed matter studies at the IBR-2 facility have undergone some changes in accordance with the experience gained during the last two years. It was found to be necessary to establish specialized selection committees formed of independent experts in their corresponding fields of scientific activities. The following four committees were organized:

### 1. Diffraction

V.A.Somenkov - Russia - Chairman  
V.A.Trounov - Russia  
L.Rosta - Hungary  
J.Shveitser - France  
J.B.Forsyth - United Kingdom  
A.Z.Menshikov - Russia

### 2. Inelastic scattering

J.Janik - Poland - Chairman  
W.Gotze - Germany  
V.Dimic - Slovenia  
L.Bata - Hungary  
A.V.Chalyi - Ukraine

### 3. Neutron optics

A.I.Okorokov - Russia - Chairman  
S.V.Maleyev - Russia  
T.Rekveldt - The Netherlands  
H.Lauter - France - Germany

### 4. Small angle scattering

L.Cser - Hungary - Chairman  
J.Plestil - Czech Republic  
J.Teixeira - France  
G.Zaccai - France  
H.Stuhrmann - Germany  
H.Fuess - Germany

Scientific Secretary of FLNP, Dr. Vadim V. Sikolenko, is responsible for user policy. Dr. Gizo D. Bokuchava has been appointed as the scientific coordinator of user policy at FLNP. There are two deadlines for proposal submission: for the experimental period from October through February, the deadline is May 16; and for the period from February through June, the deadline is November 16.

The scientific coordinator is responsible for organizing all necessary work for:

- distribution of "Application for Beam Time" forms to potential users
- reception and registration of proposals

- proposal review by instrument scientists to estimate the technical feasibility of proposals

- sending feasible proposals to members of the selection committees and reception of the comments and recommendations.

The IBR-2 beam schedules are drawn up by the head of the Condensed Matter Department, together with the persons responsible for individual instruments, on the basis of the experts' recommendations. Schedules as adopted by the FLNP Director or the Deputy Director for condensed matter physics are sent to the chairmen of the selection committees. After the completion of an experiment, an "Experimental Report" form is filled out by the experimenter(s), which is then submitted to the scientific coordinator of user policy.

The first call for proposals in 1995 resulted in 76 applications requesting 406 experimental days on 7 of the 12 IBR-2 spectrometers. The average overload factor for these instruments is 1.16, the largest being for the NERA-PR high resolution inelastic scattering spectrometer (2.4) and the MURN small-angle scattering spectrometer (2.1).

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### 7.3. MEETINGS AND CONFERENCES

*In 1995, the following meetings were organized:*

1.	Workshop on Mathematical Methods of Texture Analysis	March 21-24	Dubna
2.	Russian-French Seminar "Strongly Correlated Electronic Systems"	March 23-28	Grenoble
3.	3rd International Seminar on the Interaction of Neutrons with Nuclei (ISINN-3)	April 26-28	Dubna
4.	3rd International Meeting "Nuclear Physics for Protection of the Environment"	May 23-28	Dubna
5.	Meeting on Synchrotron and Neutron Investigations	August 21-25	Dubna
6.	VII International School on Neutron Physics	September 3-22	Dubna



*In 1996, the following meeting will be organized:*

1.	4th International Seminar on the Interaction of Neutrons with Nuclei (ISINN-4)	April 27-30	Dubna
2.	International Seminar on Relaxor Ferroelectrics	May 21-23	Dubna
3.	International Seminar "Polarized Neutrons in Condensed Matter Investigations"	June 18-20	Dubna
4.	Russian-French Seminar on the Application of Neutron and Synchrotron Radiation for Condensed Matter Investigations	June 25-July 3	Novosibirsk-Irkutsk

## 7.4. COOPERATION

### List of Visitors from Non-Member States of JINR in 1995

Name	Organization	Country	Dates
H.-J.Lauter	ILL, Grenoble	France	13/01-20/01
A.El-Shafey	AEA, Cairo	Egypt	17/01-19/01
I.El-Sayed	AEA, Cairo	Egypt	17/01-19/01
Y.El-Shaer	AEA, Cairo	Egypt	17/01-19/01
B.N.Figgis	Univ. of Western Australia	Australia	22/01-24/01
E.Steinnes	Trondheim University	Norway	16/02-19/02
K.Walther	FZ Rossendorf	Germany	13/03-07/04
E.Niederschlag	In-t Mineralogie, Aachen	Germany	13/03-07/04
K.Helming	GKSS, Geesthacht	Germany	20/03-31/03
W.H.Urbanus	FOM-Institute	The Netherlands	22/03-26/03
A.B.Sterk	FOM-Institute	The Netherlands	22/03-26/03
R.Maayouf	AEA, Cairo	Egypt	26/03-05/04
P.Reichel	FZ Rossendorf	Germany	27/03-07/04
W.Boede	FZ Rossendorf	Germany	27/03-07/04
M.Betzl	FZ Rossendorf	Germany	27/03-07/04
M.Rudalics	Linz University	Austria	29/03-29/04
V.Lauter	ILL, Grenoble	France	30/03-12/04
H.J.Lauter	ILL, Grenoble	France	06/04-12/04
S.Ahmad	Plevsound Ltd., London	United Kingdom	12/04-13/04
A.Pyzalla-Schieck	Ruhr Univ., Bochum	Germany	18/04-01/05
J.Schreiber	Inst. f. zerstoer. Pruefver., Dresden	Germany	18/04-29/04
W.Ulbricht	Univ. Bayreuth	Germany	20/04-27/04
S.Biriukov	Beer-Sheva Inst.	Israel	24/04-28/04
Heiweng Wang	Uhan University	China	23/05-28/05
S.Loureiro	ILL, Grenoble	France	24/05-24/05
K.Walther	FZ Rossendorf	Germany	24/05-16/06

B.Leiss	Univ. Gottingen	Germany	26/05-30/05
K.Pahn	Inst. of Oceanography	USA	01/06-01/06
T.Reinert	TU Clausthal	Germany	05/06-14/06
S.Loureiro	ILL, Grenoble	France	08/06-08/06
S.Loureiro	ILL, Grenoble	France	16/06-16/06
T.Koebler	Fraunhofer In-t Eiskirchen	Germany	26/06-02/07
H.-G.Priesmeyer	GKSS Geesthacht	Germany	26/06-02/07
J.Schreiber	Inst. f. zerstoer. Pruefver., Dresden	Germany	26/06-09/07
V.Zagrebnov	CPT, Marseille	France	04/07-02/08
V.Lauter	ILL, Grenoble	France	12/07-28/07
H.J.Lauter	ILL, Grenoble	France	12/07-28/07
He Jian	IAE, Beijing	China	22/07-29/07
Yang Tonghua	IAE, Beijing	China	22/07-29/07
J.Schreiber	Inst. f. zerstoer. Pruefver., Dresden	Germany	27/07-28/07
M.Ono	Kyoto University	Japan	06/08-25/08
J.W.Lynn	NIST, Washington	USA	19/09-20/09
D.M.Kilany	NRC-AEA, Cairo	Egypt	22/09-28/09
H.I.Hassan	NRC-AEA, Cairo	Egypt	02/10-01/01
P.Reichel	FZ Rossendorf	Germany	13/11-24/11
W.Boede	FZ Rossendorf	Germany	13/11-24/11
K.Walther	FZ Rossendorf	Germany	13/11-01/12
T.Gutberlet	Univ. Leipzig	Germany	10/12-24/12
J.Schreiber	Inst. f. zerstoer. Pruefver., Dresden	Germany	12/12-20/12
M.Russina	HMI, Berlin	Germany	15/12-20/12

## 7.5. EDUCATION

The University Centre (UC) affiliated with the Joint Institute for Nuclear Research and based on the faculties of the Moscow State University and Moscow Engineering Physics Institute admits, for continuation studies, undergraduate students of the last two years of study in higher education institutions who have attended introductory specialized courses or lectures in the following topics: particle physics, nuclear physics, investigation of condensed matter at nuclear reactors and accelerators, radiation biology. The second and third specializations are in line with research performed at FLNP, which has at its disposal a good experimental base for both sectors comprising the the IBR-2 reactor and the IBR-30 booster pulsed neutron sources.

The education courses and practical training for the students affiliated with FLNP have been organized, to a large extent, to prepare specialists in neutron physics for both the Laboratory and for other Russian neutron centres.

As an example illustrating this aim, we present the list of courses taught by lecturers of the Condensed Matter Physics Chair of the UC (Head: Prof.V.L.Aksenov):

- theoretical methods in condensed matter physics

- methods of investigation of condensed matter at nuclear reactors and accelerators
- fundamentals of neutron physics and neutron sources
- methods for structure analysis of ideal and real crystals
- synchrotron radiation spectroscopy of solid matter
- influence of radiation on solid-state properties
- methods of experimental data processing.

A number of leading FLNP scientists take part in delivering these courses. Each student is allowed access to the Laboratory's computer network. An obligatory condition for successful completion of the 4th year is the capability to use modern personal computers. Earlier, students were included in the research groups led by their instructors, which made it possible for undergraduate students working on their theses to take part in preparing or performing experiments.

In 1995, the teaching process at UC continued successfully. Ten students who had their UC training course at FLNP were employed by JINR or other scientific centers in Russia.

The Condensed Matter Physics Chair gave graduation certificates to its third group of students in the reported year. This group had 7 students, making the total number of students who have graduated from the Chair, 30. Nine of them have been employed by FLNP and who have renewed the staff of the FLNP Scientific Department of Condensed Matter Physics to a noticeable degree. A somewhat smaller influx of graduates (3) came from the Nuclear Physics Chair of the UC.

## 7.6. PERSONNEL

Table 4

Personnel of the Directorate as of 31.12.95

Country	People
Armenia	1
Bulgaria	1
Germany	3
Georgia	2
Egypt	1
KPDR	4
Kazakhstan	1
Moldavia	1
Mongolia	2
Poland	8
Romania	5
Russia	16
Slovakia	1
Ukraine	1
United States	1
Vietnam	1

Table 5

## Distribution of the Main Staff Personnel per Department as of 31.12.95

Departments	Permanent personnel			Contracts		
	S.	E. & T.	St.	S.	E. & T	St.
Nuclear Physics Department Personnel of the Directorate	2	1	0.5	29.5 13	6.5 3	5.5
Condensed Matter Physics Department Personnel of the Directorate	1	2	-	43 26	7 5	6
Physical and Technical Research Sector Activation Analysis Sector Personnel of the Directorate	5 2	2 5	1 -	2 1	6 3 1	3
Department of Electronics, Computers and Networks Personnel of the Directorate				17 1	28	9
IREN Department Personnel of the Directorate				7 1	5 1	2
Nuclear Safety Sector				6	1	1
IBR-30 Department					17	3
IBR-2 Department					40	7
Technical services: Mechanical and Technical Department Electric and Technical Department Personnel of the Directorate Central Experimental Workshops, Design Bureau, Tool and Cleaning Services		3	1 12		13 9 1 19	47 23 45
Management Services Personnel of the Directorate	1	2	-	3	17 1	3
	40.5 (7.69%)			486.5 (92.31%)		
<b>Total</b>	<b>527 (100%)</b>					

**Comment:** S. - Scientists, E. & T. - Engineers & Technicians, St. - Staff.



## 7.7. FINANCE

Table 6

**Financing of the FLNP Scientific Research Plan in 1995**

No.	Theme	Financing plan, \$ th	Expenditures for 12 months, \$ th	In % of JINR budget	
				Plan	Actual
<b>I</b>	<b>Condensed matter physics</b>	<b>3192.3</b>	<b>2615.5</b>	<b>14.6</b>	<b>13.8</b>
	1. Investigations of high temperature superconductivity	470.4	91.6		
	2. Neutron scattering investigations of condensed matter	1517.6	1835.5		
	3. Development and modernization of the IBR-2 complex	869.1	426.3		
	4. Development of the FLNP measurement and computation complex	251.4	184.6		
	5. Activation analysis and radiation investigations at IBR-2	83.8	77.5		
<b>II</b>	<b>Nuclear physics</b>	<b>924.9</b>	<b>816.2</b>	<b>4.24</b>	<b>4.3</b>
	1. Realization of the IREN project	623.2	395.4		
	2. Study of the fundamental properties of neutrons and nuclei	301.7	420.8		
<b>III</b>	<b>Elementary particle physics (under the auspices of the ATLAS project)</b>	<b>5.1</b>	<b>6.5</b>		
<b>IV</b>	<b>Total:</b>	<b>4122.3</b>	<b>3438.2</b>	<b>19.0</b>	<b>18.2</b>

Table 7

**The part of the JINR budget assigned to FLNP (%)**

Year	Plan	Fact
1992	21.70	13.30
1993	16.70	14.70
1994	16.80	13.00
1995	19.01	18.20