



Title: LENINGRAD PHYSICO-TECHNICAL INSTITUTE by A. F. Ioffe and  
D. Z. Budnitskiy (USSR)

Source: Scientific Research Institutes of the Heavy Industries,

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THE LENINGRAD PHYSICO-TECHNICAL INSTITUTE

Location: No 2, Komovka Lesnoy, Leningrad 21.

LPTT is subordinated under the Sector of Scientific Research and Technical Progress, People's Commissariat of Heavy Industry.

Director: A. F. Ioffe  
(Tel. 189-73)

Deputy Director: D. G. Budnitskiy  
(Tel. Lesnoy Exchange No 760)

Laboratories of the Institute:

Photoelectric Properties of Semiconductors  
 Electrical Conductivity of Semiconductors  
 Thermoelectric Properties of Semiconductors  
 Electrical Conductivity and Stability of Dielectrics  
 Amorphous Bodies  
 Anisotropic Liquids  
 Stability  
 Plastic Properties  
 Photoelectric Properties of Metals  
 Diffraction of Electrons  
 Roentgen Rays  
 Nuclear Reactions  
 Natural Radiation and Cosmic Rays  
 High Voltages

Workshops of the Institute

Mechanical  
 Glass Blowing  
 Grinding  
 Battery

The Institute works on:

Semiconductors (photoelectric properties, electrical conductivity, thermoelectric properties and thermal conductivity)

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Dielectrics (electrical conductivity and spark over, electric properties of amorphous dielectrics, anisotropic liquids, (magneto)electricity, piezoelectricity of Rochelle Salt Crystals etc)

Studies of solids ~~studied~~ by the electron diffraction method

Photoelectric properties of metals

Studies of the relationship of rays of radioactive substances with various materials

Positrons

Cosmic rays

Quantum electrodynamics

Theory of the structure of nuclei

Theory of semiconductors and the theory of the solid state.

Scientific Workers of Institute :

Academician A. F. Ioffe - Director of Institute; semiconductors, amorphous bodies, dielectrics.

Prof. E. F. Vasil'yev - Chief of the Division of Methodological Physics

Prof. H. N. Davidenkov - Chief of the Lab of Stability and Elastic Properties

I. V. Kurchatov, Doctor of Physics - Chief of the Lab of Nuclear Reactions

Prof. P. I. Lukirskiy - X-rays, photoelectric properties of metals, diffraction of electrons

Prof. D. V. Stobel'tsyn - Chief of the Lab of Cosmic Rays

Prof. V. K. Frederiks - Chief of the Lab of Anisotropic Liquids

Prof. Ya. I. Frenkel' - Chief of the Division of Theoretical Physics

Docent A. P. Aleksandrov-Alikhanov - positrons

L. A. Artsimovich - Chief of the High-Voltage Lab

Docent F. F. Vitman - Chief of the Stability Lab

Docent B. M. Gokhberg - Chief of the Lab of Thermoelectric Properties of Semiconductors

Docent V. M. Dukel'skiy - X-rays

M. V. Klassen - Chief of Lab of Plastic Properties

Docent P. P. Kobeko - Chief of the Lab of Amorphous Bodies

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### Scientific Workers of Institute: (Cont'd)

Docent V. Ye. Lashkarev - Chief of the Laboratory of the Diffraction of Electrons

Docent D. M. Nasledov - Chief of the Laboratory of the Electric Properties of Semiconductors

Docent S. S. Prilezhayev - Chief of the Laboratory of Photoelectric Properties of Metals

As of 1975, LPTI had 150 associates, 60 scientific workers, and a budget of 780,000 rubles.

The Institute maintains regular scientific liaison with: Cavendish Laboratories, Cambridge; Institut de Pierre Curie, Paris; Institut der physikalischen Chemie, Berlin; Institut for theoreetisk fysik, Copenhagen.

It gives technical aid to various industrial agencies, particularly aid in optics of roentgen rays, electronic phenomena, stability, problems of electrical insulation, structural roentgenological analysis, and electrography.

The LPTI takes an active part in editing the periodicals: "Teoreticheskaya i Eksperimental'naya Fizika", "Tekhnicheskaya fizika", "Physikalische Zeitschrift der Soviet Union", and the series, "Problems of New Physical Technology (Problemy noveyshey fiziki)".

The institute conducts scientific research work in the fields of theoretical and experimental physics, works on problems of optics, X-rays, electron phenomena, stability, electric insulation, and electrography.

The work of the Institute has two basic trends: 1) studies of the physics of solids ~~and~~, and 2) physics of the atomic nucleus. In recent years a great deal of attention has been devoted to the properties of plastics, which may be utilized in some cases to replace critical metals. With respect to the physics of ~~the~~ solid ~~body~~, the Institute has studied the stability, <sup>and</sup> electrical, and plastic properties of solids. ~~and~~ In recent years industry has started to make extensive use of

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semiconductors. The theoretical aspects of these semiconductors (various oxides and sulfides) has evoked much theoretical interest at the institute, but much research still remains to determine the ~~role of the~~ mechanism of the movement of electrons, caused by illumination as well as by the heating of semiconductors.

Work on amorphous bodies was conducted along the lines of studies of the conditions of rotation of molecules of various substances in the interval of softening and in the solid ~~state~~, and studies of the electrical conductivity of these same substances.

Work on dielectrics has been conducted along two lines: studies of the mechanism of electric spark-over in solid dielectrics and studies of the mechanism of dielectric losses, in silicon glass.

In addition to studies of the electric and thermal properties of semiconductors, amorphous bodies, liquid crystals and dielectrics, and physics ~~of the atomic nucleus~~, members of the Institute have studied the mechanical properties of solids ~~and~~.

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