Fomin C.D.

The Institute of Semiconductor Physics

The Institute of Semiconductor Physics, Siberian Branch of the Russian Academy of Sciences was founded in 1964.

Science

The basic trend of the Institute is carrying out scientific investigations
and applied developments in topical problems of
condensed matters physics,
including semiconductor and insulator physics,
physics of low-dimensional systems,
prior scientific directions,
element base of

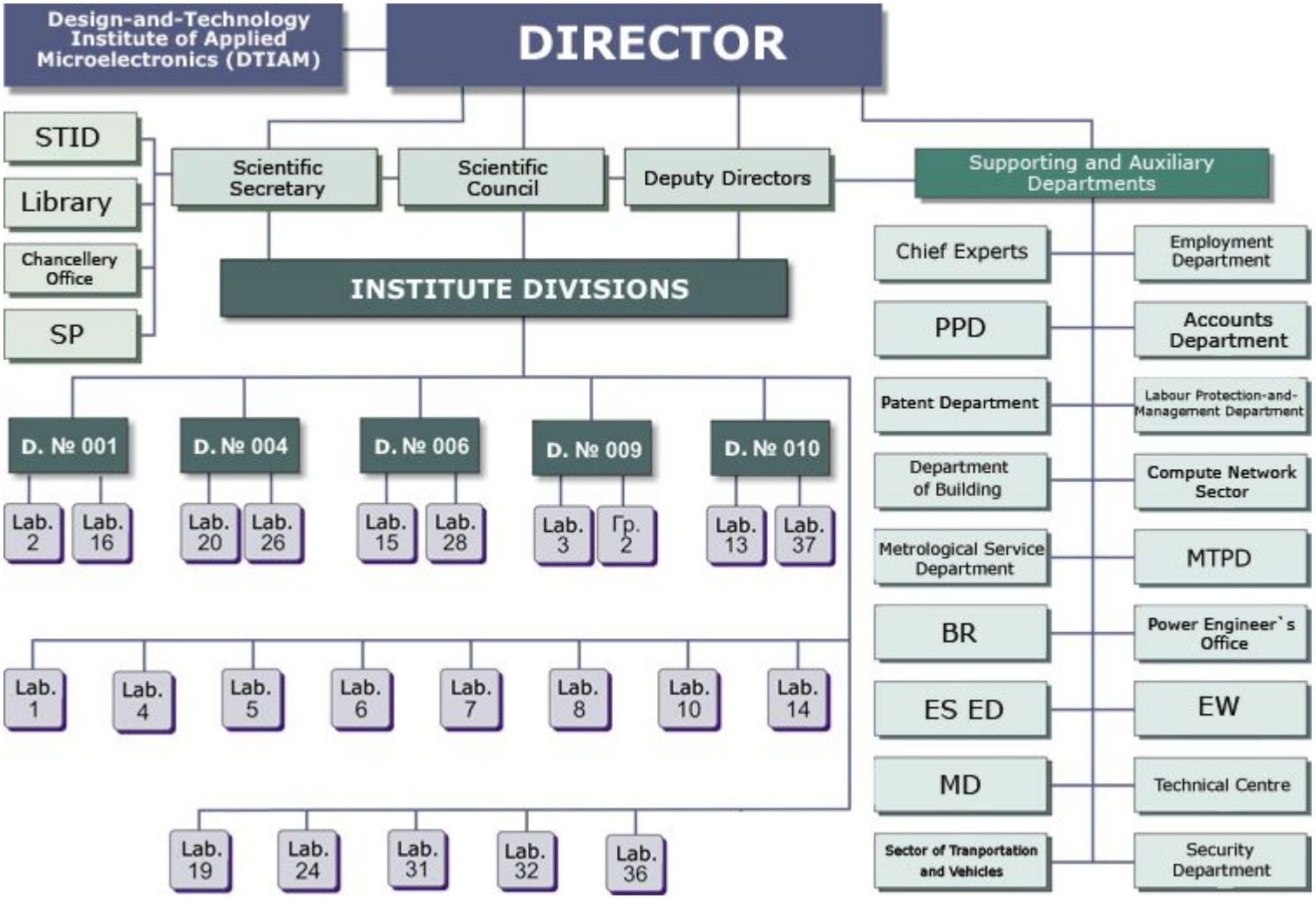
* microelectronics, opto-, nanoelectronics,
* quantum computers,
* topical problems of optics and laser physics.

The contemporary scientific-technical progress is considerably determined by the development of electronics whose base is the advancement of fundamental sciences - first solid and semiconductor physics. The latest achievements in these fields are connected with physics of low-dimensional structures and developments in nanostructures fabrication with a principally new functional potential for nano- and optoelectronics, communication means, new information technologies, measurement devices, etc.

The most outstanding achievements in this field were encouraged with Noble prizes in physics: Hall quantum effect; electron and tunnel atomic resolution microscopy; Hall fractional quantum effect; development of semiconductor heterostructures and intergral microcircuits.

According to many prognoses, it is the development of nanotechnologies that will outline the image of the XXI century, - just like the discovery of atomic energy, invention of transistor and laser determined the image of the XX century. Nanotechnologies are to resolve the following tasks of modern semiconductor electronics: increase of computing systems production output and, for the prospect, development of quantum computer, increase of connection channels transmission capacity, increase of information memory volume and quality of information reflection systems with a simultaneous decrease of energy consumption; widening the potential of sensor and energy-saving devices; increase in the share of using electron and optoelectron components in

* biological,
* medical,
* chemical,
* machinery.



STID - Science-and-Technical Information Department
SP - Sector for Printing
PPD - Production-and-Planning Department
MD - Maintenance Department
BR - Sector for Building and Repairing
ES ED - Engineering Department for Electronic System
EW - Experimental Workshop
MTPD - Material-Technical Provision Department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