RUSSIAN ACADEMY OF SCIENCES
N.M. EMANUEL INSTITUTE OF BIOCHEMICAL PHYSICS

The institute was founded in 1994 to develop basic research on physical principles of chemical processes in biological and molecular-ordered chemical systems

Nikolai Markovich Emanuel (1915 - 1984)

- An eminent scientist, organizer of researches on chemical physics, one of the pioneers and the recognized leader in the field of physico-chemical biology. The founder of the Department of Kinetics of Chemical and Biological Processes at the Institute of Chemical Physics. The Department became the basis for the Institute of Biochemical Physics of the Russian Academy of Sciences.

Director of N.M. Emanuel Institute of Biochemical Physics, Russian Academy of Sciences

- Member of the Russian Academy of Sciences,

  Prof. Alexander E. Shilov,
- Head of Scientific Group of Biomimetic Catalysis Biomimetic systems and investigations into mechanisms of processes in these systems. Chemical modelling of fermentative oxidations. Functional models ofhydrolitic centers of ATP-dependent ferments.

Professor Elena B. Burlakova
Deputy Director of N.M. Emanuel Institute of Biochemical Physics, Russian Academy of Sciences

- *Head of Department of Physico-Chemical Fundamentals of Biological Systems Regulation Professor E.B.Burlakova*
- Theoretical and experimental investigation of physico-chemical mechanisms of cell regulation systems. The role of free-radical pathways in the cell regulation and its damages under pathological conditions and the action of environmental factors. The investigation of the mechanism of bioantioxidants (BAS) action. Study of physico-chemical aspects of super-low amounts of BAS action and the action of physical factors of super-low intensity.

Отдел кинетики химических и биологических процессов

Лаб. физ.-химических основ регуляции биологических систем

Лаб. физ.-химии ДНК и других биополимеров

Лаб. молекулярных механизмов клеточной полиферации

Лаб. процессов фотосенсибилизации

Группа хемилюминисценции

Группа основ ферментативного катализа

Лаб. химической физики эластомеров и смесей полимеров

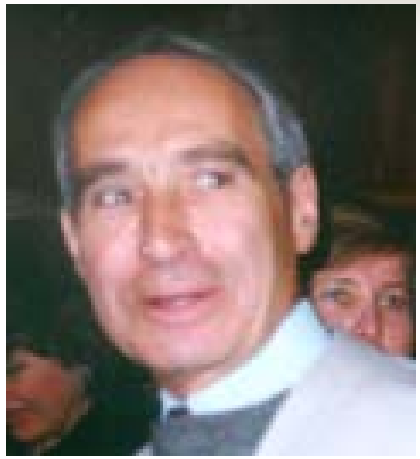
Лаб. кинетики инициированной деструкции и модификации полимеров

Лаб. химической стойкости полимеров

Лаб. окисления органических веществ

Лаб. физико-химических основ рецепции

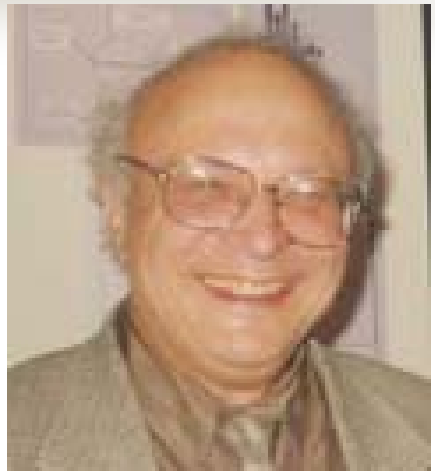
- Antitumor compounds of a wide range of action and novel methods of treatment of oncological diseases with low doses of medicinal preparations
- Cosmetic creams of enhanced activity
- Artificial crystalline lenses “IOL-Moscow-RAN”
- Ophthalmologist’s kit for spectral correction of vision
- Trauma-safe spectral glasses for enhancement of vision performance
- Immunoassay kits and detoxication of organism by magnetocontrollable sorbents in the framework of the program of solution of applied problems of biology and medicine.



Laboratory of Quantitative Oncology

Prof. D.B.Korman

Investigation of chemical regularities and physico-chemical mechanisms of formation and progression of cancer of animals and human beings. Studying anticancer properties and cellular and molecular mechanisms of anticancer activity of natural and chemical substances.



Lab. Chemical Material Science.

Acoustical microscopy.

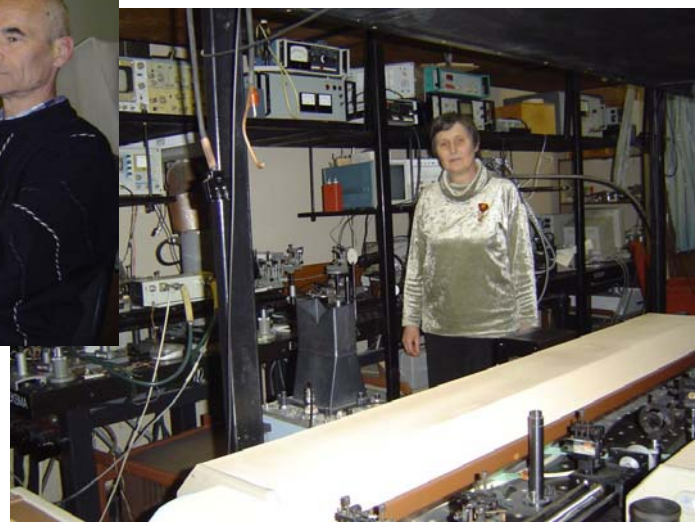
Prof. V.M.Levin

New instruments and techniques to studying structure and properties of microparticles of different nature. Acoustic microscope can be applied in biology, medicine, microelectronics,chemical, oil and gas structure.

Отдел электроники органических материалов

Лаб. органических полупроводников и ферромагнетиков

Лаб. статистической физики



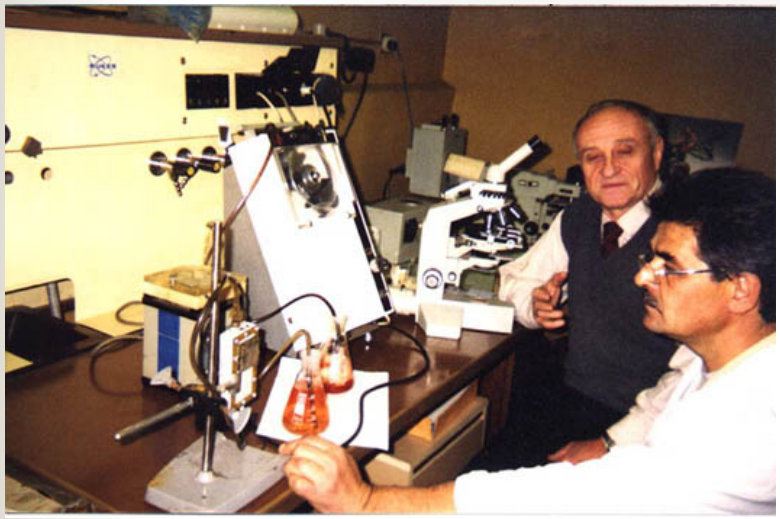
Лаб. электрофизики органических материалов

Отдел пищевой химии и биотехнологии

Лаб. анализа и моделирования вкуса и запаха

Лаб. полисахаридных систем

Лаб. структурирования пищевых систем



Lab. of Engineering Biophysics

Dr. Phys.&Math.

A.A. Kuznetsov.

Investigation of: the relation between chemical composition and structure of objects of diverse nature; their static and dynamic magnetic characteristics. Investigation of magnetic heterogenity of biological objects.

Centre of Acoustic Microscopy

Dr. of Phys.&Math.

R.G. Maev

Development of physical backgrounds for acoustic microscopy i.e. search for new principles of acoustic image formation; analysis of acoustic images and their interpretation with a view of studying new materials.

Laboratory of Theoretical Genetics Prof. S.V. Vasilyeva

- Fundamental investigations of mutational changes in the cell. Studying the role of DNA repair pathway in a mutagenic process. The directed searching for natural effective antimutagens and molecular-genetic analysis of their activity.

Research Group of Ecology-Population Analysis

Ph.Dr.of Biol. V.B. Mamaev

- Working-out of biochemical and biophysical models of organism functioning, including the models for antioxidant status, clarifying the mechanisms of health supporting, aging, radiational and ecological stability. Testing these models using the demographic analysis of mortality and desease rates of population of the regions with account of various historical and geographical specific features.

DEPARTMENT OF ECOLOGICAL CHEMISTRY.

- **Lab. of Gas Anasysis and Ecoloximetry. Dr. of Chem. E.N. Alexandrov**

- Studying the physical and chemical processes in the atmosphere. Development of scientifical and technical basis for ecological monitoring in cities. Modernization of methods for the eco-toximetry control

- Lab.of Ecochemistry of Liquid Media. Dr. of Chem. E. V.Shtamm
- Investigation and prognosis of direction of natural red-ox processes. Working out kinetical and generalized parameters of the native water media
- quality. Investigation of photochemical processes in native and waste waters
- under UV-irradiations.

Институт Биохимической Физики им. Н.М. Эмануэля РАН

Добро пожаловать!