SCIENTIFIC FIELDS

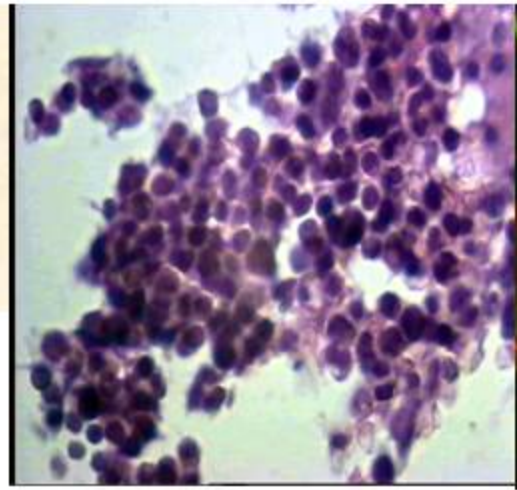
- DEVELOPMENT OF CELL TECHNOLOGIES
- DEVELOPMENT OF ECOLOGICAL TRENDS AND OCCUPATIONAL MEDICINE
- LAWS OF EXTERNAL MANAGEMENT OF FUCTIONAL HUMAN ORGANISM SYSTEMS AND THEIR CONTROL
- DIRECTION OF ELECTROMAGNETIC ACTION
- NANOPHARMACOLOGICAL TRENDS

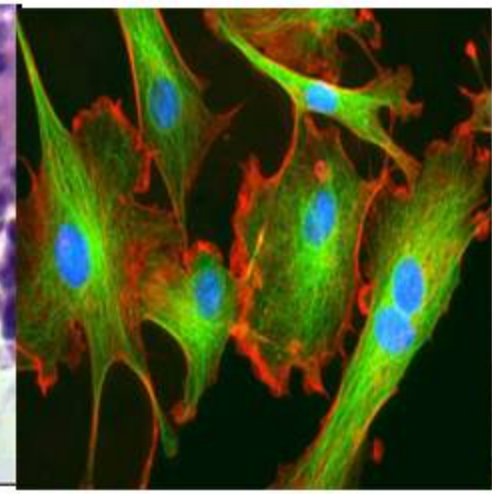
FUNDAMENTAL RESEARCH

- Chaos-self-organisation theory
- Theory of origin and maintenance of chiral assymetry of the organic world
- Fundamental electrodynamics and informatics of living systems
- Informational virtual reality and life processes
- Informational theory of viruses
- Theory of infomational value of cluster water structure

DEVELOPMENT OF CELLULAR TECHNOLOGIES

Experimental studies of directed differentiaion of pluripotent stem cells under fields and emissions exposure





Development of methods of recovery of male reproduction function with stem and progenitor cells

Studies of early damage markers of cardiovascular system in young and middle aged persons for prevention of cardiovalcular deseases

Development of cellular treatment of autism, stroke, burns and trophic ulcer

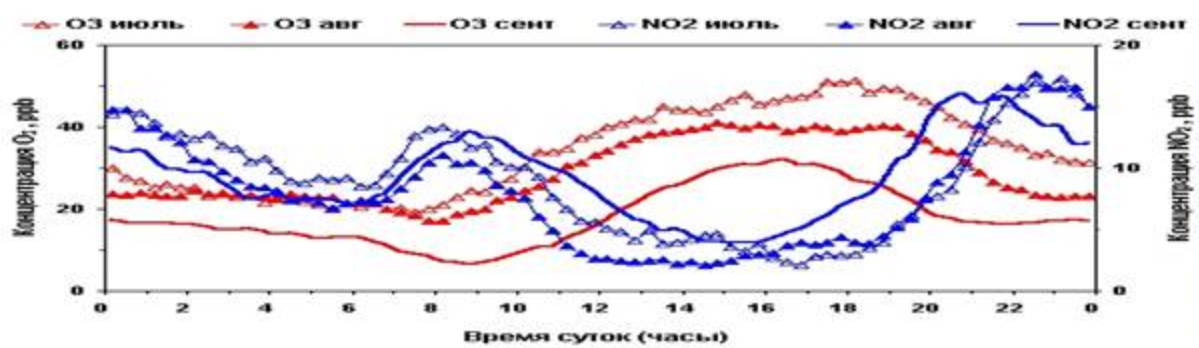
Development of a model of myocardial infraction ad cellular treatment system of cardiovascular deseases

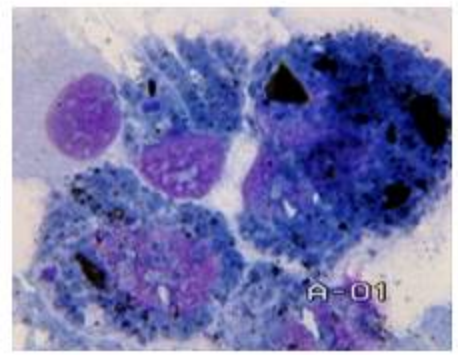
DEVELOPMENT OF ECOLOGICAL TRENDS AND OCCUPATIONAL MEDICINE

Development of methods of monitoring and forecasting of the state of atmosphere of inhabited areas with consideration of physical and chemical transformation of technological emissions in troposphere and population risk assessment

Assessment of influence of technological pollution of various nature on morbidity and mortality of the population

Development of methodology and mathematical description of damage reparation for production victims





LAWS OF EXTERNAL MANAGEMENT OF FUCTIONAL HUMAN ORGANISM SYSTEMS AND THEIR CONTROL

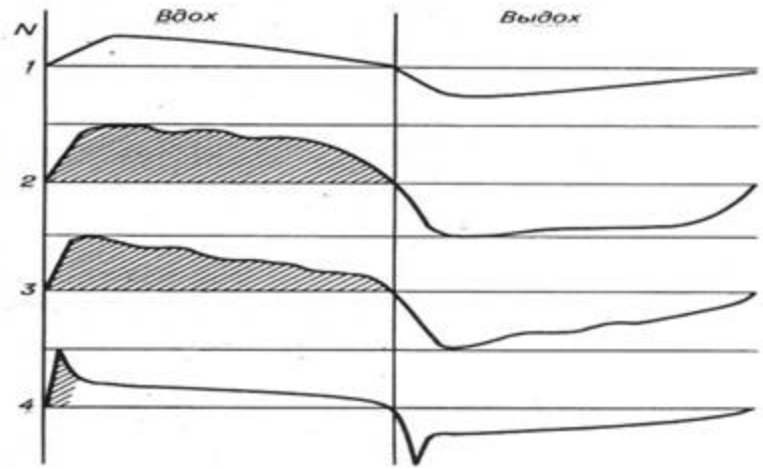
- **Development of software and hardware complexes for the control of mechanical treatment in rehabilitation and sport**
- Control of stress mechanisms basing on chaos-self-organization systems theory; personal approach (transcranial electrostimulation combined with electrophoresis of serotonine)
- Neurophysiological mechanisms of management human organisms functional systems control
- Development of innovative infrared spectrography and spectrobiopsy of blood for personalised medicine
- Development of training devices for breathing muscles
- Therapeutic approaches to the treatment of chronic skeletomuscular pain under the conditions of comorbidity

Control of stress mechanisms basing on chaos-self-organization systems theory personal approach (transcranial electrostimulation with electrophoresis of serotonine)

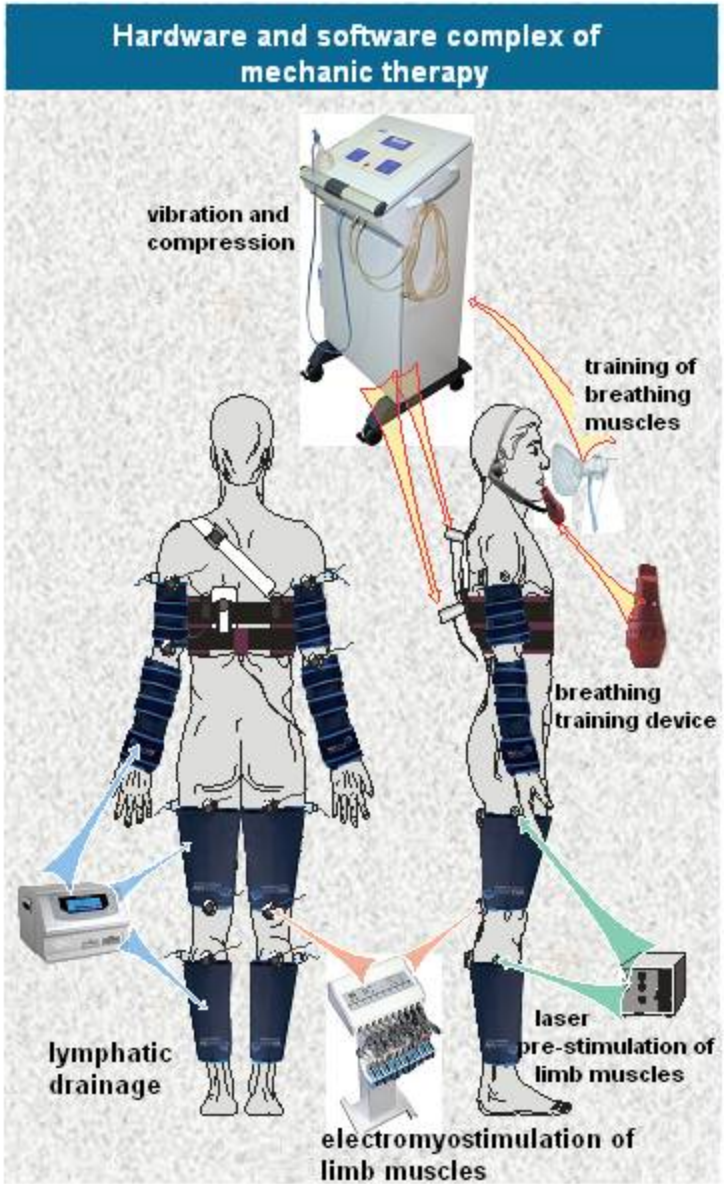
- **Device MAGNON-DKS for transcranial electrostimulation, mesodiencephalic modulation and for transcerebral diagnostics (75 Hz - 80 Hz)**

Development of training devices for breathing muscles

- **Training devices with resistance to inspiration and/or expiration:**
  - **with elastic resistance to air flow**
  - **with resistive resistance to air flow (constant)**
  - **with peak resistance to air flow**
- **Devices with external compression on chest**
- **Devices with vibration and vibration-impulse on chest**
- **Devices for compression on limbs (lymph drainage, increase of venous return)**



Development of software and hardware complexes for the control of mechanical treatment in reabilitation and sport



- **Method of training of breathing muscles (without excess fatigue) and the device for regulated peak resistance at the initial stages of inspiration and expiration is proposed. Higher efficiency of the proposed method in comparison with the known devices is revealed.**

•Improved permeability of the bronchial tree
•Improved quality of the bronchial mucus
•Normalization of ventilation and improved clood supply of poorly ventilated alveoli
•Stimulation of regeneration and recovery of lung tissue
•Optimization of bronchiectasis
•Training of breathing muscles

NEUROPHYSIOLOGICAL MECHANISMS OF MANAGEMENT OF functional systems and stress mechanisms basing on chaos-self-organisation theory

- **Apart from the known since H. Selye's times Кроме известной со времен Г. Селье *Hypothalamic- Pituitary- Adrenal system*, we revealed the role of its antagonist – *hypothalamic-pituitary-reproductive system*. *Their sinergetic work was proved Phasatonic brain theory*, based on the interaction of gamma-aminobutyric acid and dopamine was proved**

TECHNOLOGIES OF EXTERNAL CONTROL

- **laser phoresis technology**
- **Technology of control of differentiation of stem cells with electromagnetic emission**
- **Technology of control of carcinogenesis in mammal generations, radiated with nonionizing radiation**
- **Technology of control of fundamental vital functions under the exposure of multivector magnetic fields**
- **Technology of spatial pathophysiological and transgenic transmission of bioinformation between bio-objects in the transmitted electromagnetic radiation**
- **Development of the theory of control over the life activities of biological and medical systems from the point of view of synergetics**

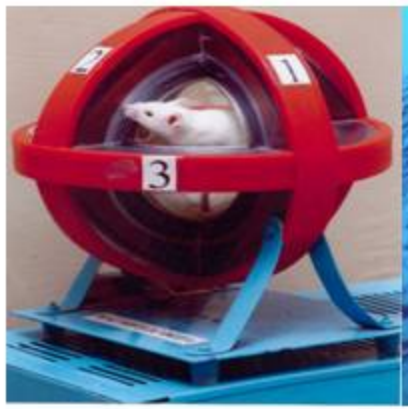
Electromagnetic effect

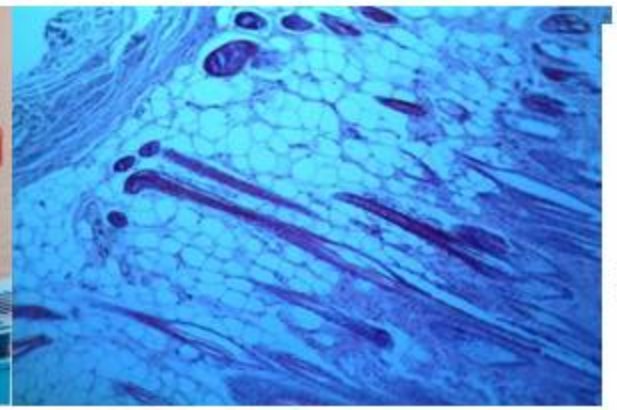
- Features of the formation of antitumor resistance in an experiment with the combined effects of stem cells and electromagnetic radiation of extremely high frequency and terahertz radiation

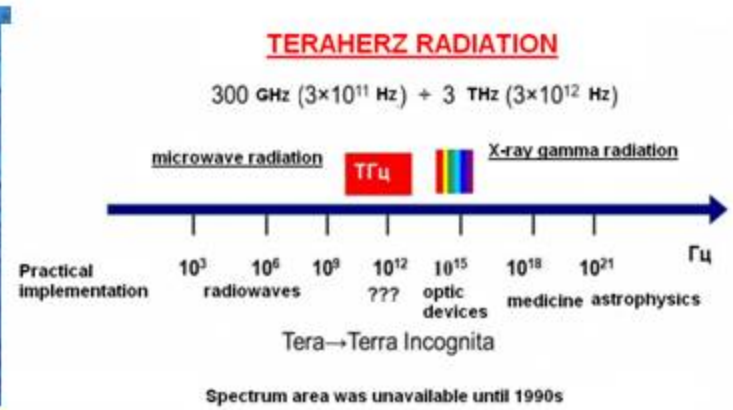
- Ultra-high-frequency electromagnetic radiation in combination with cellular technologies as a factor in the correction of diabetes mellitus

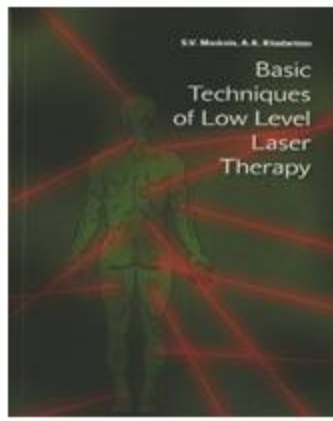
- The use of ultra-high-frequency and terahertz radiation for targeted delivery of regulatory peptides into tissues

- The use of laser radiation for targeted delivery of drugs into tissues (laser ionophoresis)





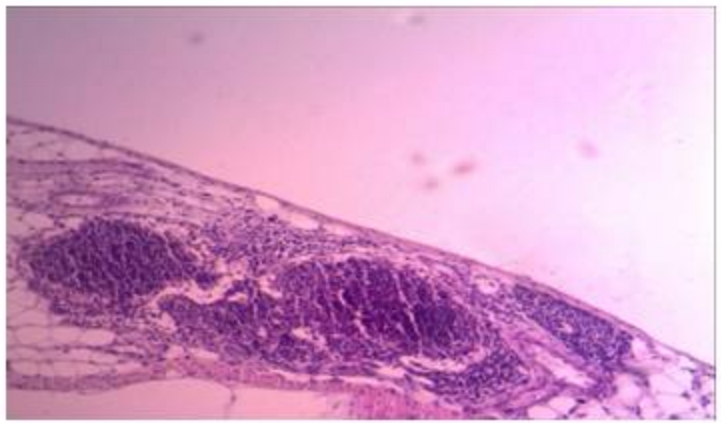




NANOPHARMACOLOGICAL TRENDS

- **Development of targeted delivery of nanopreparations to organs and tissues using various types of radiation (terahertz, ultra-high frequency, laser)**

- **We carried out a study of the antibacterial activity of silver nanoparticles. In laboratory animals, experimental inflammation was simulated by intraperitoneal and intracerebral administration of 0.5 ml of a suspension of staphylococcus containing 12x108 / ml (4 on the McF scale) of microbial bodies.**
- **Mode of use of silver nanoparticles: before infection, animals received nanosilver in a prophylactic dose of 5 mg 0.2 mg / day. Total - 1 mg of *AgNPs* per animal. The study was conducted on 48 male outbred rats with an initial weight of 100–120 g.**



icrosection of the peritoneum of the animal of the control group, under the peritoneum infiltration is localized (x600)

EHF

Microsection of the peritoneum of the animal of experimental group, visible intact peritoneum without signs of inflammatory infiltration (x600)


THANK YOU!