

Projects and grants since the laboratory's establishment (1994):

1. "New Efficient Biocatalysts Based on Immobilized Cells Entrapped in Poly(vinyl alcohol) Cryogel Carriers" (1994-1996) - Grant of the Programme "The Newest Methods of Bioengineering" (The Russian Ministry for Science and Technology).
2. "Cryotropic Gelation of Starch Polysaccharides" (1996-1997) - The grant sponsored by Unilever Research, UK.
3. "Cryotropic Gelation of Food Biopolymers" (1997-1998) - The grant sponsored by Unilever Research, UK.
4. "Physical Principles of Polymer Self-Organisation: Engineering of AB-Co-polymers" (1999-2001) - INTAS Project, EU.
5. "Asymmetric Synthesis of Biologically and Industrially Important Compounds Using Chemical Methods and Immobilized Enzymes" (1999-2001) - Integrated Long-Term Programme of Cooperation in Science and Technology between India and Russia.
6. "New generation of smart polymers and polymeric materials for biotechnology" (2001-2003) – INTAS Project, EU.
7. "Sequence design of bioinspired copolymers with functionality on the nano-metre scale" (2002-2005) – INTAS Project, EU.
8. "New generation of biocatalysts with fractal supramolecular structure" (2002-2005) – INTAS Project, EU.
9. "New approaches to the bioremediation of oil-contaminated soils and crude oil wastes using immobilized hydrocarbon-oxidizing bacteria" (2002-2005) – INTAS Project, EU.
10. "Integration" (2002-2004) – Integrated Long-Term Programme of cooperation between the Russian Academy of Sciences and Russian High Schools/Universities.
11. "Development and Study of Macromolecules and Macromolecular Structures of Novel Generations" (2003-2005) – the Programme of the Division of Chemistry of Materials Science of the Russian Academy of Sciences.
12. "Development of Catalysts Based on the Principles Inherent in Functioning of Enzymes" (2005-2006) – Federal Target Scientific & Technical Program 'R&D in Priority Directions of Science and Engineering' (Russian Ministry of Education and Science).
13. "Synthesis and Preparation of Stabilized Forms of Dinitrosyl Iron Complexes with Different Ligands" (2006) – the Project with All-Russian Scientific Centre for Cardiology.
14. "Development of biocatalysts based on immobilized rhodococcal cells for production of biologically-active compounds and environmental protection" (2007-2008) – the grant of Russian Foundation for Basic Research.
15. "Synthesis and Study of Enzyme-Like Copolymers" (2007-2008) – the Programme of the Division of Chemistry of Materials Science of the Russian Academy of Sciences.
16. "Polymeric Gels with Controlled Molecular Memory" (2007-2009) – the Programme of the Division of Chemistry of Materials Science of the Russian Academy of Sciences.
17. "Quantitative study of the hydration of enzyme-like copolymers with zwitterionic groups" (2007-2008) – the grant of Russian Foundation for Basic Research.
18. "Novel family of promising materials for biotechnology – polymeric cryogels" (2007-2008) – the grant of Russian Foundation for Basic Research.
19. "Novel technology of bulk (in porous polymeric scaffolds) culturing of mammalian and bird cells for the efficient production of physiologically-significant proteins, humanized miniantibodies and recombinant viruses" (2007-2008) – the grant of Russian Foundation for Basic Research.
20. "Designing of cardiovascular medicines on the base of dinitrosyl-iron complexes with thiol-containing ligands" (2007-2008) – the grant of Russian Foundation for Basic Research.
21. "New Biomaterials by Enzyme Immobilization in/on Cryogel-Based Macroporous Carriers" (2007-2008) – the grant of Russian Foundation for Basic Research for the international (Russia-Romania) joint Project.
22. "Novel propagation systems for recombinant pseudoadenoviral nanoparticles based on

implementation of wide-porous polymeric cryogels capable of solubilizing under physiological conditions” (2008-2009) – the grant of Russian Foundation for Basic Research.

23. “New type of high-efficient immobilized biocatalysts for revealing and processing of organophosphorus toxicants” (2008-2009) – the grant of Russian Foundation for Basic Research.

24. “Synthesis, properties and catalytic activity of copolymers, whose macromolecules possess the protein-like conformation in aqueous media (“Synthetic enzymes”)” (2009-2010) – the Programme of the Division of Chemistry of Materials Science of the Russian Academy of Sciences.

25. “Dinitrosyl-iron complexes as candidates on the role of endothelium-derived relaxing factor” (2009-2010) – the grant of Russian Foundation for Basic Research.

26. “Adhesion, proliferation and multilineage differentiation of mesenchymal stem cells upon the three-dimensional culturing in macroporous matrices based on polymeric cryogels that contain drafted “anchor” nano-particles” (2009-2010) – the grant of Russian Foundation for Basic Research for the international (Russia-Ukraine) joint Project.

27. “Bioremediation of soil polluted by organophosphorous compounds with application of immobilized nano- and microbiocatalysts” (2009-2011) – the grant of Russian Foundation for Basic Research.

28. “Synthesis and study of water-soluble copolymers that manifest the conformation-dependents enzyme-like catalytic activity” (2010-2011) – the Programme of the Division of Chemistry of Materials Science of the Russian Academy of Sciences.

29. “Synthesis and study of new molecularly-imprinted cryogels capable of thermally-induced “recognoting” of specific ligands” (2011-2012) – the Programme of the Division of Chemistry of Materials Science of the Russian Academy of Sciences.

30. “Influence of the low-molecular diphilic substances on physicochemical characteristics and macroporous morphology of poly(vinyl alcohol) cryogels: An approach to the adjustment of the properties of such gel systems” (2012-2013) – the grant of Russian Foundation for Basic Research.

31. “Biocompatible cryogels with new set of functional and specialized mechanical properties” (2012-2013) – the grant of Russian Foundation for Basic Research for the international (Russia-Turkey) joint Project.

32. “The role of physicochemical and structure-morphological properties of polymeric carrier of immobilized cyanobactium cells in the provision of their efficiency and long-term high-producing functioning upon the region/stereo-selective transformation of steroid substrates” (2012-2013) – the grant of the Russian Foundation for Basic Research.

33. “Biomimetic molecular systems, bioinspired nanocatalysts, polymers self-organization, protein-like copolymers, computer sequence design, multiscale modeling, synthesis” (2014-2016) – the grant of the Russian Scientific Foundation.

34. “Cryochemical approaches to the creation of new hybrid nanosystems and nanostructures for targeted delivery of drug substances” (2016-2018) – the grant of the Russian Scientific Foundation.

35. “Complex interdisciplinary study directed to the elaboration and properties modification of the wide-pore biocompatible constructs and implants based on polymeric cryogels” (2018-2020) – the Programme of the Presidium of Russian Academy of Sciences.