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## Projects Approved for Funding by ISTC Governing Board at the 33rd Funding Session

### 1. Newly Approved Projects

1892.2 Development of Novel Technology for Bioremediation of Soils Contaminated by Phosphorus Organic Weed Killers Using Microorganisms-Degraders

Project Manager: Zharikov G A; Leading Institution: Research Center of Toxicology and Hygienic Regulation of Biopreparations (Serpukhov, Moscow reg.); Supporting Institution: Institute of Biochemistry and Physiology of Microorganisms (Puschino, Moscow reg.); Collaborators: Agricultural Research Service (Beltsville, MD, USA), Purdue University / Department of Biology (West Lafayette, IN, USA); Duration: 36 months; Funding parties: CA

2391 Development of the Methods for Encapsulation of Long-lived Nuclear Waste in the Carbon Matrixes for Storage and Transmutation

Project Manager: Novikov Yu N; Leading Institution: Nuclear Physics Institute (Gatchina, Leningrad reg.); Supporting Institutions: Institute of Macromolecular Compounds (St Petersburg), Khlopin Radium Institute (St Petersburg); Collaborators: Energiewerke Nord GmbH (Lubmin, Germany), European Commission / Joint Research Center / Institute for Transuranium Elements (Karlsruhe, Germany), JAERI / Tokai Research Establishment (Tokai Mura, Japan), RWE NUKEM Limited (Risley Warrington, Cheshire, UK); Duration: 36 months; Funding parties: CA

2585 Development of the Method for Characterization of the Samples, Containing Spontaneously Fissioning Radionuclides, by Measuring Fission Products Gamma-Radiation (for the System of NM Control and Accountability of the Federal State Unitarian Enterprise "PA"Mayak")

Project Manager: Zubarev V N; Leading Institution: MIFI (Moscow); Supporting Institutions: VNIINM Bochvar (Moscow), NPO Mayak (Oziorsk, Chelyabinsk reg.); Collaborators: Los Alamos National Laboratory / Nonproliferation and International Security Division, NIS-5, Safeguards Science & Technology (Los-Alamos, NM, USA), Radiation and Nuclear Safety Authority (Helsinki, Finland), Texas A&M University (College Station, TX, USA); Duration: 36 months; Funding parties: EU CA

2615 Synthesis of Short Peptides with Corticotropin-Like Structure and Study of Their Stress-Protector Activity

Project Manager: Navolotskaya E V; Leading Institution: Institute of Bioorganic Chemistry (Branch) (Puschino, Moscow reg.); Supporting Institution: Institute of Highly Pure Biopreparations (St Petersburg); Collaborators: Memorial Sloan-Kettering Cancer Center (New York, USA), University of Maryland / School of Medicine (Baltimore, MD, USA), University of Turku (Turku, Finland); Duration: 36 months; Funding parties: CA

2637 Developing the Experimental Model of the Device for Nuclear Material Detection by Photoneutron Technology, Optimization of Device Detection Parameters to Meet the Solution of Non-Proliferation Problems

Project Manager: Yakovlev G V; Leading Institution: Kurchatov Research Center (Moscow); Collaborators: American Science and Engineering, Inc. (Billerica, MA, USA), SCK-CEN (Mol, Belgium); Duration: 24 months; Funding parties: CA

2641 Novel Pharmaceutical Preparations for Cancer Diagnostic and Treatment on the Base of HLDF

Project Manager: Bogachuk A P; Leading Institution: Institute of Bioorganic Chemistry (Moscow); Supporting Institution: State Research Center of Virology and Biotechnology VECTOR (Koltsovo, Novosibirsk reg.); Collaborators: Harvard Medical School (Boston, MA, USA), Medizinische Hochschule Hannover (Hannover, Germany), University of Maryland at Baltimore / Department of Medicine (Baltimore, MD, USA), University of Missouri - Kansas City / School of Pharmacy (Kansas City, MO, USA), Vas Gene Therapeutics, Inc. (Los-Angeles, CA, USA); Duration: 36 months; Funding parties: US

2703 Improvement of Metallic Items' Service Characteristics due to Modification of Their Surface by the Method of Friction Plating

Project Manager: Semenov V G; Leading Institution: MISIS (Steel and Alloys) (Moscow); Supporting Institutions: AO Kompozit (Korolev, Moscow reg.), VNIICHT (Chemical Technology) (Moscow); Collaborators: Cranfield University / School of Industrial and Manufacturing Science (Cranfield, Beds, UK), Lulea University of Technology (Lulea, Sweden), TU Bergakademie Freiberg / Institut für Maschinenbau (Freiburg, Germany), VictorReinz, Dana Corp. (Lisle, USA); Duration: 30 months; Funding parties: CA

2706 Study and Creation of Pulsed UV and VUV Sources of Spontaneous Radiation with High Power Density

Project Manager: Tarasenko V F; Leading Institution: Institute of High Current Electronics (Tomsk, Tomsk reg.); Supporting Institutions: VNIIEF (Sarov, N. Novgorod reg.), Institute of General Physics named after A.M. Prokhorov RAS (Moscow); Collaborators: Alameda Applied Sciences Corporation (San Leandro, CA, USA), CNRS / Centre de Physique des Plasmas et de leurs Applications de Toulouse (Toulouse, France), Lasers, Plasmas and Photonic Processes Laboratory (LP3) (Marseille, France), Los-Alamos National Laboratory (Los-Alamos, NM, USA), Miyazaki University / Electrical Electronic Engineering (Miyazaki, Japan), Nihon Koshuha Co., Ltd. (Yokohama, Japan), University of Illinois At Urbana-Champaign (Urbana, IL, USA); Duration: 30 months; Funding parties: US

2728 Development of Single Crystal TlBr Radiation Detectors (Thallium Bromide)

Project Manager: Zaletin V M; Leading Institution: Institute of Physical-Technical Problems (Dubna, Moscow reg.); Supporting Institution: State Research and Design Institute of Rare-Metal Industry (Moscow); Collaborators: Brookhaven National Laboratory (Upton, NY, USA), European Space Agency / Science Payload and Advanced Concepts Office (Noordwijk, Netherlands), Institut de Protection et de Surete Nucleaire (Fontenay aux Roses, France), Universität Ulm / Faculty of Engineering (Ulm, Germany), University of California / Santa Cruz Institute for Particle Physics (Santa Cruz, CA, USA); Duration: 24 months; Funding parties: US CA

2730 Studies on Immobilization Technologies of Long-Lived Radionuclides with Use of "Reactor" Palladium

Project Manager: Pokhitonov Yu A; Leading Institution: Khlopin Radium Institute (St Petersburg); Collaborators: British Nuclear Fuels Ltd (BNFL) / Waste Disposal Research Group Sellafield R&D (Seascale, Cumbria, UK), Idaho National Engineering and Environmental Laboratory (Idaho Falls, ID, USA); Duration: 24 months; Funding parties: EU

2732 Development of a Technology for Seeking a Neutron Source in Compactly Built-up Urban Areas and Design of a Prototype Survey Radiometer

Project Manager: Chernov M Yu; Leading Institution: NIIT (Pulse Techniques) (Moscow); Collaborator: Lawrence Livermore National Laboratory (Livermore, CA, USA); Duration: 18 months; Funding parties: US

2750 Study of Prion Proteins using Relevant Aptamers, Obtained by SELEX, Aimed to Develop New Approaches in Diagnostics and Therapy of Prion-Mediated Diseases

Project Manager: Antipin A A; Leading Institution: State Scientific Center of Genetics and Selection of Industrial Microorganisms (GosNIIGenetica) (Moscow); Supporting Institutions: Russian Cardiology Research Center / Institute of Experimental Cardiology (Moscow), VIEV (Experimental Veterinary) (Moscow), Institute of Immunological Engineering (Lyubuchany, Moscow reg.); Collaborators: AGOWA GmbH (Berlin, Germany), Institute for Animal Health (Compton, UK), University of Illinois (Chicago, IL, USA), University of Kent at Canterbury (Canterbury, UK); Duration: 36 months; Funding parties: CA

2762 Process Adaptation for Treatment of HLW and ILW by Extraction with Zirconium Salt of HDBP and its Testing Using Real Radwaste

Project Manager: Fedorov Y S; Leading Institution: Khlopin Radium Institute (St Petersburg); Collaborators: British Nuclear Fuels Ltd (BNFL) / Waste Disposal Research Group Sellafield R&D (Seascale, Cumbria, UK), COGEMA (Velizy, France), European Commission / Joint Research Center / Institute for Transuranium Elements (Karlsruhe, Germany), Florida State University / Department of Chemistry and Biochemistry (Tallahassee, FL, USA), University of Manchester / Centre for Radiochemistry Research (Manchester, UK); Duration: 36 months; Funding parties: US CA

2764 The Development of Information Technology of Geological Environment Stability Assessment with Long-Term Storage and Disposal of Radioactive Waste in Geological Formations

Project Manager: Kamnev E N; Leading Institution: VNIPI Promtechnology (Moscow); Supporting Institution: Institute of Physics of the Earth (Moscow); Collaborators: CODATA (Paris, France), Deutsche Gesellschaft zum Bau und Betrieb von Endlagern für Abfallstoffe mbH (DBE) (Peine, Germany), Geological Survey of

Japan (Tsukuba, Japan), Institut de Physique du Globe (Paris, France), National Geophysical Data Center (Boulder, CO, USA); Duration: 36 months; Funding parties: EU

2766 New Methods of Computational Annotation of Bacterial Genomes: Development and Application

Project Manager: Lyubetsky V A; Leading Institution: Institute of Strategic Stability (Moscow); Supporting Institution: Institute of Problems of Information Transmission (Moscow); Collaborators: Forschungszentrum für Umwelt und Gesundheit GmbH (GSF) / Institute for Bioinformatics (Neuherberg, Germany), Lawrence Berkeley National Laboratory / Center for Bioinformatics and Computational Genomics (Berkeley, CA, USA), Massachusetts Institute of Technology (MIT) / Division of Health Sciences and Technology (Cambridge, MA, USA); Duration: 36 months; Funding parties: CA

2773 Atmosphere Composition Investigations Over the Northern Eurasia Using the Mobile Carriage-Laboratory

Project Manager: Elansky N F; Leading Institution: Institute of Atmospheric Physics (Moscow); Supporting Institutions: Scientific Research Institute of Rail Transport (Moscow), Karpov Institute of Physical Chemistry (Moscow); Collaborators: Finnish Meteorological Institute (Helsinki, Finland), Max-Planck-Institut für Chemie (Mainz, Germany), Max-Planck Society / Max-Planck-Institute für Biogeochemie (Jena, Germany), University of Helsinki (Helsinki, Finland), US Department of Commerce / National Oceanic and Atmospheric Administration / Climate Monitoring and Diagnostics Laboratory. (Boulder, CO, USA); Duration: 36 months; Funding parties: EU

2809 Development and Research of New Class of Microcrystalline Aluminum-Silicon Alloys for High-Resource and High-Strength Internal Combustion Engine Pistons

Project Manager: Chuvil'deev V N; Leading Institution: State University of Nizhny Novgorod / Research Physical and Technical Institute (N. Novgorod, N. Novgorod reg.); Supporting Institution: VNIIEF (Sarov, N. Novgorod reg.); Collaborator: Lawrence Livermore National Laboratory (Livermore, CA, USA); Duration: 24 months; Funding parties: US

2864 Development of Analytical Methods of Hydrogen and Helium Embrittlement of Nuclear Reactor Materials and Containers for Storage and Transport of Radioactive Materials

Project Manager: Martynenko Yu V; Leading Institution: Kurchatov Research Center (Moscow); Supporting Institution: Tomsk Polytechnical University (Tomsk, Tomsk reg.); Collaborator: Fraunhofer Institute Zerstörungsfreie Prüfverfahren (Saarbrücken, Germany); Duration: 36 months; Funding parties: EU

2868 Development of Synergetic Welding Based on Combination of Coherent and Polychrome Energy Radiation for Motor-Car and Aerospace Industries

Project Manager: Bulkin Yu N; Leading Institution: VNIIEF (Sarov, N. Novgorod reg.); Supporting Institution: Babakin Science and Research Space Center (Khimki, Moscow reg.); Collaborators: Northeast Science & Technology (Williamsburg, VA, USA), Rheinisch-Westfälische Technische Hochschule / Institut fuer Schweisstechnische Fertigungsverfahren (Aachen, Germany), Schafer Corporation (Albuquerque, NM, USA); Duration: 24 months; Funding parties: EU

2876 Research and Development of Photoelectrochemical Light Energy Converters Based on Organic Semiconductors Using the Principles of Photobionics

Project Manager: Ptitsin G A; Leading Institution: Institute of Chemical Physics (2) (Moscow); Supporting Institution: VNIITF (Snezhinsk, Chelyabinsk reg.); Collaborators: Johannes Kepler Universität Linz / Linzer Institut für Organische Solarzellen (Linz, Austria), Universidad Autónoma de Madrid / Department of Organic Chemistry (Madrid, Spain); Duration: 24 months; Funding parties: EU US

2881 Controllable Magnetosensitive Sensors Intended for Operation in Extreme Physical Fields

Project Manager: Filatov M M; Leading Institution: NIIT (Pulse Techniques) (Moscow); Supporting Institutions: Institute of Microelectronics Technology and High Purity Materials (Chernogolovka, Moscow reg.), Joint Institute of Nuclear Research (Dubna, Moscow reg.); Collaborators: Instituto de Ciencia de Materiales de Madrid (Madrid, Spain), Technische Universität Dresden / Institut fuer Energiemaschinen und Maschinenlabor (Dresden, Germany); Duration: 36 months; Funding parties: EU

2883 Investigation and Mathematical Modeling of Radiation-Chemical Processes in the PuO<sub>2</sub> – Absorbed Water System

Project Manager: Vladimirova M V; Leading Institution: VNIINM Bochvar (Moscow); Collaborators: British Nuclear Fuels Ltd (BNFL) / Waste Disposal Research Group Sellafield R&D (Seascale, Cumbria, UK), CEA / Direction de l'Energie Nucleaire (DEN) / Department de Radiochimie et Procèdes (Bagnoles sur Sèze, France), Los Alamos National Laboratory (Los-Alamos, NM, USA); Duration: 36 months; Funding parties: CA

2886 Distribution of Artificial Radionuclides and Winter Convection in the Japan Sea

Project Manager: Karasev E V; Leading Institution: Far Eastern Regional Hydrometeorological Research Institute (Vladivostok, Primorsky reg.); Supporting Institution: MIFI (Moscow); Collaborators: JAERI (Tokyo, Japan), Korea Ocean Research and Development Institute (Seoul, Korea), Kyushu University / Research Institute for Applied Mechanics (Fukuoka, Japan); Duration: 36 months; Funding parties: JP

2888 Alvarez-Type Accelerating Structure for Room-Temperature Part of the CERN SPL Project

Project Manager: Pershin V I; Leading Institution: ITEF (ITEP) (Moscow); Supporting Institution: VNIIEF (Sarov, N. Novgorod reg.); Collaborator: CERN (Geneva, Switzerland); Duration: 24 months; Funding parties: EU

2889 Design and Manufacture of DTL-RFQ Focusing and Accelerating Structure Prototype for a 3-40 MeV H- Linac of CERN SPL Project

Project Manager: Ivanov S V; Leading Institution: Institute for High Energy Physics (IHEP) (Protvino, Moscow reg.); Supporting Institution: VNIIEF (Sarov, N. Novgorod reg.); Collaborator: CERN (Geneva, Switzerland); Duration: 24 months; Funding parties: EU

2894 Development of a Non-Destructive Method and Equipment for Determination of Welding Residual Stress on the Basis of Coherent Photonics and Computer Modeling

Project Manager: Shchepinov V P; Leading Institution: MIFI (Moscow); Supporting Institution: Kurchatov Research Center / Institute of Reactor Technologies and Materials (Moscow); Collaborator: Ecole National Supérieure des Arts et Industries de Strasbourg (Strasbourg, France); Duration: 36 months; Funding parties: US

2901 Development of Effective Cathode-Luminescent Light Source with Field Emission Cathode Made of Nanostructured Carbon Materials

Project Manager: Sheshin E P; Leading Institution: Moscow Institute of Physics and Technology (Dolgoprudny, Moscow reg.); Supporting Institution: Institute of Chemistry named after V.I.Nikitin, Academy of Sciences, Republic of Tajikistan (Dushanbe, Tajikistan); Collaborators: MER Corporation (Tucson, AZ, USA), University of New Orleans (New Orleans, LA, USA); Duration: 24 months; Funding parties: US

2908 Remote Sensing Technology Development for a Locust Mass Breeding Areas Mapping in Order to Secure Ecologically Safety Measures of Agricultural Fields Protection

Project Manager: Zhalmuhamedova Z; Leading Institution: Research and Production Center for Environmental Monitoring "RACEM" (Kirov, Kirov reg.); Supporting Institution: Russian Academy of Science / Center for Ecological Safety (St Petersburg); Duration: 36 months; Funding parties: US

2916 Development of the Models for Nuclear Fuel Behavior During Active Phase of Chernobyl Accident

Project Manager: Borovoi A A; Leading Institution: Kurchatov Research Center (Moscow); Supporting Institution: Institute of Nuclear Safety (Moscow); Collaborators: CEA / Institut de Radioprotection et de Surete Nucleaire (Saint-Paul-lez-Durance, France), Forschungszentrum Karlsruhe GmbH (Karlsruhe, Germany), GRS mbH (Berlin, Germany); Duration: 30 months; Funding parties: EU CA

2927 Study of Roles of pH6 Antigen in Promoting Virulence and Immunity in Yersinia

Project Manager: Anisimov A P; Leading Institution: State Research Center for Applied Microbiology (Obolensk, Moscow reg.); Collaborator: University of Kentucky / Department of Microbiology and Immunology (Lexington, KY, USA); Duration: 24 months; Funding parties: CA

2936 Modelling of Reactor Core Behaviour under Severe Accident Conditions. Melt Formation, Relocation and Evolution of Molten Pool

Project Manager: Veshchunov M S; Leading Institution: Institute of Nuclear Safety (Moscow); Collaborators: CEA / Institut de Radioprotection et de Surete Nucleaire (Saint-Paul-lez-Durance, France), European Commission / Joint Research Center / Institute for Transuranium Elements (Karlsruhe, Germany), Forschungszentrum Karlsruhe GmbH (Karlsruhe, Germany); Duration: 36 months; Funding parties: EU RK

2937 Development of Oil Bio Destruction Suppression Methods in Industrial and Natural Storages

Project Manager: Kuznetsov O P; Leading Institution: VNIIEF (Sarov, N. Novgorod reg.); Supporting Institution: Moscow State University / Department of Chemistry (Moscow); Collaborator: Museum National d'Histoire Naturelle / Ecosystems et Interactions Toxiques (Paris, France); Duration: 36 months; Funding parties: CA

2939 Development of Biological Preparation Based on Natural Microorganisms Strains for Control of Perennial Weeds

Project Manager: Kolombet L V; Leading Institution: Research Center of Toxicology and Hygienic Regulation of Biopreparations (Serpukhov, Moscow reg.); Collaborator: Biotechnica Consultants (Montpellier, France); Duration: 36 months; Funding parties: CA

2942 Thermodynamic Stable Metal Compositions for Improvement of an Operational Safety of Constructional Materials under Conditions of Multifactor Loadings of an Aggressive Environment

Project Manager: Sobko S A; Leading Institution: VNIITF (Snezhinsk, Chelyabinsk reg.); Supporting Institution: MIFI (Moscow); Collaborators: Ceramatec Inc. (Salt Lake City, UT, USA), University of Oklahoma / Institute for Science and Public Policy (Norman, OK, USA); Duration: 36 months; Funding parties: US

2947 Tree-Ring and Ice-Core Record Combination for Paleoclimatic Reconstructions in the Tien Shan, Kamchatka, and Taymir / Franz Josef Land / Severnaya Zemlia

Project Manager: Nagornov O V; Leading Institution: MIFI (Moscow); Supporting Institution: Institute of Geography (Moscow); Collaborators: Bavarian Academy of Sciences / Commission for Glaciology (Munich, Germany), College of Wooster (Wooster, Ohio, USA), Columbia University / Lamont-Doherty Earth Observatory (Palisades, NY, USA), Hokkaido University / Institute of Low Temperature Science (Sapporo, Japan), National Institute of Polar Research (Tokyo, Japan), Ohio State University / Byrd Polar Research Center (Columbus, OH, USA), Universität Stuttgart / Institut fuer Geographie (Stuttgart, Germany), Universiteit Utrecht / Instituut voor Marien en Atmosferisch Onderzoek Utrecht (Utrecht, Netherlands), University of Arizona (Tucson, AZ, USA), University of Colorado / Institute of Arctic and Alpine Research (Boulder, CO, USA), University of Massachusetts (Amherst, MA, USA); Duration: 36 months; Funding parties: EU

A-1033 Periodically and Chirped Periodically Poled Lithium Niobate Crystals with Strong Suppressed Photorefraction for Advanced Quantum Electronics

Project Manager: Kokanyan E P; Leading Institution: Institute for Physical Research (Ashtarak-2, Armenia); Collaborators: Montana State University / Department of Physics (Bozeman, MT, USA), San Jose State University / College of Science (San Jose, CA, USA), Universidad Autonoma de Madrid / Facultad de Ciencias (Madrid, Spain), Universita Degli Studi di Pavia / Dipartimento di Elettronica (Pavia, Italy), Universität Osnabrück / Fachbereich Physic (Osnabrück, Germany), Université de Metz / Laboratoire Matériaux Optiques, Photonique et Systemes (Metz, France), University of Southampton / Optoelectronics Research Center (Southampton, UK); Duration: 24 months; Funding parties: US

A-1055 The Role of Intestinal Microflora on the Pathogenesis Familial Mediterranean Fever

Project Manager: Sarkisyan N N; Leading Institution: Institute of Molecular Biology (Yerevan, Armenia); Collaborators: Harvard Medical School / Beth Israel Deacones Medical Center (Boston, MA, USA), Montana State University / Department of Microbiology (Bozeman, MT, USA), National Institute of Livestock and Grassland Science (Ibaraki, Japan), Rowett Research Institute (Aberdeen, UK), Tufts-New England Medical Center (Boston, MA, USA), University of Aberdeen / Department of Medicine and Therapeutics (Aberdeen, UK), University of Dundee / Ninewells Hospital Medical School (Dundee, UK), University of Massachusetts / Medical School (Worcester, MA, USA); Duration: 36 months; Funding parties: EU

A-1095 Quantum Information Storage in Solids via Atomic Coherence

Project Manager: Malakyan Yu P; Leading Institution: Institute for Physical Research (Ashtarak-2, Armenia); Supporting Institution: Russian Academy of Science / Institute of Applied Physics (N. Novgorod, N. Novgorod reg.); Collaborators: Texas A&M University / Department of Electrical Engineering (College Station, TX, USA), Texas A&M University / Institute for Quantum Studies (College Station, TX, USA), Universitat Autonoma de Barcelona (Barcelona, Spain), Universitat Kaiserslautern / Fachberaich Physik (Kaiserlautern, Germany), Université Libre de Bruxelles / Optique Nonlinéaire Théorique (Brussels, Belgium), University of Electro-Communications / Department of Applied Physics and Chemistry (Tokyo, Japan); Duration: 36 months; Funding parties: EU CA

A-892 Reinforced Polymeric Composite Materials of Frictional and General-Technical Purpose

Project Manager: Karapetyan K A; Leading Institution: Institute of Mechanics (Yerevan, Armenia); Collaborators: Clarkson University / Department of Civil and Environmental Engineering (Potsdam, NY, USA), Clarkson University (Potsdam, NY, USA), Universitat Kaiserslautern / Institut fuer Verbundwerkstoffe (Kaiserlautern, Germany), Virginia Polytechnic Institute and State University (Blacksburg, VA, USA); Duration: 24 months; Funding parties: US

B-1029 High-Efficiency Thin Film Solar Cells and Modules Based on Complex Quaternary Chalcopyrite Materials on Flexible Dielectric and Metal Substrates

Project Manager: Zalesski V B; Leading Institution: Belarussian Academy of Sciences / Institute of Electronics (Minsk, Belarus); Supporting Institution: Institute of Solid State and Semiconductor Physics

(Minsk, Belarus); Collaborators: Center for Solar Energy and Hydrogen Research (Stuttgart, Germany), Dutch Space (Leiden, Netherlands), Solarion GmbH (Leipzig, Germany), Technical University (Freiberg, Germany), Universität Leipzig / Institut fuer Mineralogie, Kristallographie und Materialwissenschaft (Leipzig, Germany), University of Strathclyde (Glasgow, UK); Duration: 30 months; Funding parties: CA

B-1043 Ultra-Violet – Green Light Emitting Devices and High Electron Mobility Transistors Based on GaN-Heterostructures Grown on Si Substrates

Project Manager: Yablonskij G P; Leading Institution: B.I. Stepanov Institute of Physics (Minsk, Belarus); Collaborators: Aixtron (Aachen, Germany), Rheinisch-Westfälische Technische Hochschule / Institut fuer Theoretische Elektrotechnik (Aachen, Germany), Sincrotrone Trieste (Trieste, Italy), Université de Liege (Liege, Belgium); Duration: 36 months; Funding parties: EU

B-1063 Atmosphere Aerosol and Ozone Monitoring in CIS Regions through Lidar Network (CIS-LiNet)

Project Manager: Chaikovskiy A P; Leading Institution: B.I. Stepanov Institute of Physics (Minsk, Belarus); Supporting Institutions: Siberian Branch of RAS / Institute of Atmospheric Optics (Tomsk, Tomsk reg.), Institute of Applied Geophysics (Fedorov) (Moscow), Surgut State University (Surgut), Il'ichev's Pacific Oceanological Institute (Vladivostok, Primorsky reg.), Kyrgyz-Russian Slavonic University (Bishkek, Kyrgyzstan); Collaborators: Max-Planck-Institut fuer Meteorologie (Hamburg, Germany), NASA / Goddard Space Flight Center (Greenbelt, MD, USA), Tokyo University of Mercantile Marine (Tokyo, Japan), Université des Sciences et Technologies de Lille / Laboratoire d'Optique Atmosphérique (Villeneuve d'Ascq, France); Duration: 36 months; Funding parties: CA

B-984 A Search for Effective Novel HIV Inhibitors Based on the Polydisulfide Class Compounds

Project Manager: Losev Yu P; Leading Institution: Belarussian State University (Minsk, Belarus); Supporting Institution: Belarussian Research Institute for Epidemiology and Microbiology (Minsk, Belarus); Collaborators: Johannes Gutenberg-Universität Mainz / Institut für Physiologische Chemie (Mainz, Germany), Università di Camerino / Dipartimento di Scienze Farmacologiche e Medicina Sperimentale (Camerino, Italy); Duration: 36 months; Funding parties: EU

B-986 Models, Methods and Tools for Decision Support of Designing and Scheduling for the Engineering Systems with Parallel and Series Structure

Project Manager: Gordon V S; Leading Institution: Belarussian Academy of Sciences / Institute of Informatics Problems (Minsk, Belarus); Collaborators: Christian-Albrechts-Universität Kiel / Institut für Betriebswirtschaftslehre (Kiel, Germany), CNRS / Université Joseph Fourier / Institut National Polytechnique de Grenoble / Laboratoire Leibniz - Institut IMAG (Grenoble, France), Politecnico di Torino (Torino, Italy), TU Bergakademie Freiberg / Institut für Informatik (Freiburg, Germany), Universität Siegen / Lehrstuhl für Wirtschaftsinformatik (Siegen, Germany), University of Southampton (Southampton, UK); Duration: 36 months; Funding parties: EU

G-1074 Aerosols-Climate Interactions: the Relationship Between Desertification, Aerosols, and Climate in the Caucasus

Project Manager: Didebulidze G G; Leading Institution: Abastumani Astrophysical Observatory (Tbilisi, Georgia); Collaborator: University of Michigan / College of Engineering (Ann Arbor, MI, USA); Duration: 36 months; Funding parties: US

G-1096 Development of Technology and Creation of Industrial Explosives on the Basis of the Utilized Ammunition

Project Manager: Khomeriki S K; Leading Institution: G.Tsulukidze Mining Institute (Tbilisi, Georgia); Collaborators: Pennsylvania State University / Department of Civil and Environmental Engineering (Cato Park, USA), South Dakota School of Mines and Technology / College of Material Science and Engineering (Rapid City, SD, USA), Technische Universität Clausthal / Lehrstuhl für Tagebau und Internationaler Bergbau (Clausthal-Zellerfeld, Germany); Duration: 36 months; Funding parties: EU

G-416.2 Elaboration of an Improved Technology of Obtaining Heterogeneous Anti-Anthrax Immunoglobulin for Urgent Treatment and Prevention of Anthrax in Bacteriological Contamination of the Places of Distribution of the Troops, Firing Grounds and Inhabited Localities of Georgia

Project Manager: Gogiashvili D A; Leading Institution: Georgian Academy of Sciences / Institute of Bacteriophage, Microbiology and Virology (Tbilisi, Georgia); Collaborators: Battelle Memorial Institute (Columbus, OH, USA), University of Maryland / School of Medicine / Department of Epidemiology and Preventive Medicine (Baltimore, MD, USA); Duration: 36 months; Funding parties: EU

G-725 Regeneration of Na-Cation Exchangers with Sulphate-Natrium Solution and Recycling of Spent Regenerating Solution

Project Manager: Megrelshvili Z N; Leading Institution: Georgian Technical University / Batumi Polytechnical Institute (Batumi, Georgia); Collaborator: RAMBOLL (Virum, Denmark); Duration: 36 months; Funding parties: US

G-982 Investigation and Development of Effective Means of Increase of Nuclear and Radiation Safety of Nuclear Plants

Project Manager: Nioradze M; Leading Institution: Tbilisi State University / High Energy Physics Institute (Tbilisi, Georgia); Collaborators: Technische Universität München / Forschungs-Neutronenquelle (Garching, Germany), University of Tennessee / College of Arts and Sciences (Knoxville, TN, USA); Duration: 36 months; Funding parties: CA

K-449.2 Development of Technology for Complex Processing of Annually Renewable Vegetative Raw Material (Rice Hulls) with the Object of Producing Silicocarbon and Organic Product Used in Various Areas of Technology, Agriculture and Medicine

Project Manager: Sukharnikov Yu I; Leading Institution: The National Center for Mineral Raw Materials Complex Processing (Almaty, Kazakstan); Supporting Institution: Machine Building Plant (Almaty, Kazakstan); Collaborator: Center for Advanced Mineral & Metallurgical Processing (Butte, MT, USA); Duration: 34 months; Funding parties: US

K-759 Genetic Effects in Natural Plant and Animal Populations Exposed to Radioactive Contamination an Semipalatinsk Test Site (Kazakhstan)

Project Manager: Seisebaev A T; Leading Institution: National Nuclear Center of the Republic of Kazakstan / Institute of Nuclear Safety and Ecology (Kurchatov, Kazakstan); Supporting Institution: Institute of Botany and Phytointroductioin (Almaty, Kazakstan); Collaborators: SCK-CEN (Mol, Belgium), Université de Rennes 1 (Rennes, France); Duration: 36 months; Funding parties: EU

K-847 Development and Production of Reagents for Diagnosis of Dangerous Bacterial Zoonotic Infections

Project Manager: Suleimenov B M; Leading Institution: Kazak Scientific Center for Quarantine and Zoonotic Diseases (Almaty, Kazakstan); Collaborator: Centers for Disease Control and Prevention (CDC) (Atlanta, GA, USA); Duration: 36 months; Funding parties: CA

K-925 Development of Technology for Production of Precipitated Silicon Dioxide ("White Soot") from the Waste of Phosphorus Industry

Project Manager: Abisheva Z S; Leading Institution: Institute for Metallurgy and Ore Concentration (Almaty, Kazakstan); Supporting Institutions: National Nuclear Center of the Republic of Kazakstan / Institute of Nuclear Physics (Almaty, Kazakstan), Zhambyl Branch Kazphosphate Ltd. (Taraz, Kazakstan); Collaborators: Center for Advanced Mineral & Metallurgical Processing (Butte, MT, USA), University of Florida / Institute of Food and Agricultural Sciences / Indian River Research and Education Center (Fort Pierce, FL, USA); Duration: 36 months; Funding parties: CA

KR-1103 Creation of the Working Model of Water Balance and Water Quality in Basin of the Syr Darya River

Project Manager: Alekhina V M; Leading Institution: Institute of Physics of National Academy of Sciences (Bishkek, Kyrgyzstan); Collaborator: Sandia National Laboratories / Geosciences and Environment Center (Albuquerque, NM, USA); Duration: 36 months; Funding parties: US

T-1105 Genome Analysis of Cereal Crops and Their Relatives in Tajikistan

Project Manager: Nasyrova F Yu; Leading Institution: Institute of Plant Physiology and Genetics (Dushanbe, Tajikistan); Collaborator: Thomas Jefferson University (Doylestown, PA, USA); Duration: 36 months; Funding parties: US

## 2. Project Development Grants

2722 Gastrin Modified Fragments as Drug Delivery Systems for Gastrointestinal Track Tumours Treatment Synthesis and Biological Efficiency Investigation

Project Manager: Tungusova E E; Leading Institution: State Research Institute of Organic Chemistry and Technology (Moscow); Supporting Institution: Cancer Research Center (Moscow); Collaborator: University of Kansas (Lawrence, KS, USA); Duration: 36 months; Funding parties: US

2915 Development of the Biotechnology of the Yeast Recombinant Alpha-Fetoprotein: Design of the Highly Specific Anticancer Drug for the Tumor-Selective Triggering of Apoptosis

Project Manager: Dudich E I; Leading Institution: Institute of Immunological Engineering (Lyubuchany, Moscow reg.); Supporting Institution: State Scientific Center of Genetics and Selection of Industrial Microorganisms (GosNII Genetica) (Moscow); Collaborators: Serometrix LLC (East Syracuse, NY, USA),

State of New York Department of Health (Albany, NY, USA), Università Degli Studi di Pavia / Department of Animal Biology (Pavia, Italy), University of Ioannina / Medical School (Ioannina, Greece), University of Turku / Finnish-Russian Joint Biotechnology Laboratory (Turku, Finland); Duration: 36 months; Funding parties: US CA

KR-614 New Manufacturing Technology of the Vaccine Against Sheep Pox, the Development of the Peroral Vaccine

Project Manager: Gusev B N; Leading Institution: National Academy of Sciences of Kyrgyzstan / Biotechnology Institution (Bishkek, Kyrgyzstan); Collaborators: Colorado State University / College of Veterinary Medicine and Biomedical Sciences (Fort Collins, CO, USA), Institute for Animal Health / Pirbright Laboratory (Pirbright, UK), US Department of Agriculture / Agricultural Research Center (Athens, GA, USA); Duration: 36 months; Funding parties: US

KR-993 Development of the Highly Effective Biological Means for the Optimization of the Nutrient and the Protection of the Plants

Project Manager: Kydraliev K A; Leading Institution: National Academy of Sciences of Kyrgyzstan / Institute of Chemistry and Chemical Technology (Bishkek, Kyrgyzstan); Supporting Institution: AO Biochimash (Moscow); Collaborator: Washington State University (Pullman, WA, USA); Duration: 36 months; Funding parties: US

### 3. Reallocation of Funds for Earlier Approved Projects

2065 Analysis of Sources of Hazard and Probabilistic Evaluation of Risk during Storage of Chemical Warfare Agents

Project Manager: Kharchenko A I; Leading Institution: VNIIEF (Sarov, N. Novgorod reg.); Supporting Institution: Udmurtia State University / Institute of Natural and Technogenic Disasters (Izhevsk, Udmurtia); Duration: 24 months; Funding parties: EU US

2643 Generation of Sub-Femtosecond (Attosecond) Probing Photoelectron Bunches with Quasi-Stationary Electromagnetic Fields

Project Manager: Schelev M Ya; Leading Institution: Institute of General Physics named after A.M. Prokhorov RAS (Moscow); Supporting Institutions: VNIIEF (Sarov, N. Novgorod reg.), NIIIT (Pulse Techniques) (Moscow); Collaborators: CORDIN Co. (Salt Lake City, UT, USA), University of Central Florida / Center for Research and Education in Optics and Lasers / School of Optics (Orlando, FL, USA); Duration: 36 months; Funding parties: US CA

2679 Development and Implementation of Physical and Technological Principles of Logical Elements of All-Optical Computer with Ultra-High Speed and Minimized Thermal Losses

Project Manager: Zapasskii V S; Leading Institution: Vavilov State Optical Institute (GOI) (St Petersburg); Collaborators: Universidad Complutense de Madrid (Madrid, Spain), University of Arizona / Optical Sciences Center (Tucson, AZ, USA); Duration: 36 months; Funding parties: EU US

KR-994 Creation of Analytical and Informational Base for the Impact Environmental Monitoring of the Inhabiting Zone of the Issyk-Kul Lake

Project Manager: Kidibaev M M; Leading Institution: Tynystanov State University (Karakol, Kyrgyzstan); Supporting Institution: Ural State Technical University (Ekaterinburg, Sverdlovsk reg.); Collaborators: CNRS/Université de Claude Bernard-Lyon 1 / Laboratoire de Physico-Chimie des Matériaux Luminescents (Lyon, France), Oppenheimer Institute for Science & International Cooperation (London, UK), Sandia National Laboratories / The Cooperative Monitoring Center (Albuquerque, NM, USA), University of New Mexico (Albuquerque, NM, USA), Wismuth GmbH (Chemnitz, Germany); Duration: 36 months; Funding parties: EU US