



Protocol of the RFBR-BNSF Panel Meeting for selection on Joint Research Projects

19.11.2020

Participants:

Bulgarian National Science Fund

Prof. S. Nikolov, Chairman of the Executive Board of Bulgarian Science Fund
Prof. G. Vayssilov, Manager of Bulgarian Science Fund
Ms. L. Hristova, secretary of the bilateral commission

Russian Foundation for Basic Research

Prof.Dr. V.V.Kvardakov, Deputy Board Chairman
Dr. A.V.Usoltsev, Head of International Relations Department
Dr. A.S.Akhmanov, Head of Department of Physics, Astronomy and Engineering
Ms. S.A. Shevereva, Deputy Head of Division of International Bilateral Cooperation

186 projects have been submitted in response to the joint RFBR-BNSF call 2020. After evaluation of the projects performed by RFBR and BNSF 33 Joint Research Projects were selected for funding as an outcome of the joint call. The projects selected for funding are listed in the following table.

Prof. DSc. Georgi Vayssilov
Manager of the Bulgarian National Science Fund

Prof.Dr. Vladimir Kvardakov
Deputy Board Chairman
Russian Foundation for Basic Research

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Projects selected for funding for the joint RFBR-BNSF call 2020

No	BNSF №	RFBR Number	Title of the project	Team leader from Bulgaria	Organization from Bulgaria	Team leader from Russia	Organization from Russia	Title of the project in Russia
1	16	20-53-18007	Highly effective hybrid extraction processes for the separation of organic and inorganic substances based on the principles of liquid membranes and liquid-liquid chromatography	Professor Doctor Dragomir Yankov	Institute of Chemical Engineering	Andrey A. Voshkin	Kurnakov Institute of General and Inorganic Chemistry of the Russian Academy of Sciences (IGIC RAS)	Highly effective hybrid extraction processes for the separation of organic and inorganic substances based on the principles of liquid membranes and liquid-liquid chromatography
2	81	20-52-18012	Ultra-Compact Objects in Einstein and modified gravity and photon structure	Chief assistant professor Doctor Galin Gylchev	Sofia University "St. Kliment Ohridski"	Dmitry Vladimirovich Gal'tsov	Moscow Lomonosov State University	Ultracompact objects in Einstein and modified gravity and photon structure
3	144	20-54-18008	Biogeographic connections between the Caucasus and the Balkans – evidence from molecular and cybertaxonomic studies on millipedes of the family Julidae (Myriapoda: Diplopoda)	Chief assistant professor Doctor Boyan Vagalinski	Institute of Biodiversity and Ecosystem Research	Aleksandr Evsyukov	Don State Technical University	Biogeographic connections between the Caucasus and the Balkans – evidence from molecular and cybertaxonomic studies on millipedes of the family Julidae (Myriapoda: Diplopoda)
4	79	20-51-18002	Algebraic, Combinatorial and Geometric Problems in Coding Theory	Professor Doctor Peter Boyvalenkov	Institute of Mathematics and Informatics	Leonid Bassalygo	Institute for information transmission problems – IPPI, RAS	Algebraic, Combinatorial and Geometric Problems in Coding Theory

5	124	20-51-18009	New Highly Efficient Stochastic Simulation Methods and Applications	Professor Doctor Ivan Dimov	Institute of Information and Communication Technologies	Karl Sabelfeld	Institute of Computational Mathematics and Mathematical Geophysics of Siberian Branch of Russian Academy of Sciences, Novosibirsk, Russia	New highly efficient stochastic simulation methods and applications.
6	12	20-59-18004	Vectors of historical development and national identity in the Balkans (XVIII-XXI c.)	Associate Professor Doctor of Science Yura Konstantinova	Institute for Balkan Studies and Centre of Thracology	Volokitina Tatiana	Institute of Slavic Studies of the Russian Academy of Sciences	Vectors of historical development and national identity in the Balkans in XVIII-XXI centuries
7	154	20-51-18004	NUMERICAL METHODS AND ALGORITHMS IN THE THEORY AND APPLICATIONS OF CLASSICAL HYDRODYNAMICS AND MULTIPHASE FLUIDS IN POROUS MEDIA	Associate Professor Doctor Yuriy Dimitrov Kandilarov	RUSE UNIVERSITY "ANGEL KANCHEV"	Yuri Andreevich Poveshchenko	Keldysh Institute of Applied Mathematics of RAS	Numerical methods and algorithms in the theory and applications of classical hydrodynamics and multiphase fluids in porous media
8	63	20-52-18004	Investigation of new magneto-optical effects in alkali-metal atoms prepared in long-lived coherent states for application to quantum magnetometry	Associate Professor Doctor Christina Andreeva Markovska	Institute of Electronics "Academician Emil Djakov"	Alexey Vladimirovich Taichenachev	Novosibirsk State University, Novosibirsk, Russia	Investigation of new magneto-optical effects in alkali-metal atoms prepared in long-lived coherent states for applications to quantum magnetometry

9	41	20-54-18006	Analysis of the major components and study of the mechanisms determining the antioxidant properties of the bacteria Bifidobacterium longum and Lactobacillus brevis	Professor Doctor Albert Krastanov	University of Food Technologies – Plovdiv	Olga Averina	Institute of General Genetics “N. I. Vavilov”, Russian Academy of Sciences, Moscow	Analysis of the major components and study of the mechanisms determining the antioxidant properties of the bacteria Bifidobacterium longum and Lactobacillus brevis
10	180	20-57-18012	Investigation of the interactions of Langmuir-Blodgett nano biofilms with various types of acoustic waves in piezoelectric structures (Acronym: LB-piezo)	Associate Professor Doctor George Ivanov	University of Architecture, Civil Engineering and Geodesy – Sofia	Gorbachev Ilya	Kotelnikov Institute of Radioengineering and Electronics of Russian academy of sciences	Investigation of Langmuir-Blodgett nano biofilms deposition and its interaction with various types of acoustic waves in piezoelectric structures
11	116	20-52-18015	Investigation of binary systems with a compact object with use of Doppler tomography	Professor Doctor Nikolai Tomov	Institute of Astronomy with National Astronomical Observatory	Pavel Kaygorodov	Institute of Astronomy of RAS	Investigation of binary systems with a compact object with use of Doppler tomography
12	128	20-53-18003	Development of hybrid COMpositE COATings for osteostimulating implants in OSTEOporosis	Professor Doctor Margarita Apostolova	Institute of Molecular Biology "Academic Rumen Tsanev"	Sergei Tverdokhlebov	Tomsk Polytechnic University - School of Nuclear Science & Engineering, The Weinberg Research Center	Development of hybrid composite coatings for osteostimulating implants in osteoporosis

13	76	20-58-18013	Experimental and numerical study of heat and mass transfer in the region of interaction of the respiration flow and transit ventilation flow	Associate Professor Doctor Detelin Markov	Technical University – Sofia	Nikolay Ivanov	Peter the Great St.Petersburg Polytechnic University	Experimental and numerical study of heat and mass transfer in the region of interaction of the respiration flow and transit ventilation flow
14	107	20-53-18008	Volatile amphiphiles at interfaces in multicomponent systems: experimental and theoretical studies of adsorption and evaporation under dynamic and equilibrium conditions	Professor Doctor Theodor Gurkov	Sofia University “St. Kliment Ohridski”	Larisa Tsarkova	Moscow State University M. V. Lomonosov, Faculty of Chemistry	Volatile amphiphiles at interfaces in multicomponent systems: experimental and theoretical studies of adsorption and evaporation under dynamic and equilibrium conditions
15	153	20-59-18007	From regional conflicts to an age of global transformations: Russian and Bulgarian historical perspectives on the international relations in the late 19th - early 21st century	Associate Professor Doctor Mira Markova	Sofia University “St. Kliment Ohridski”	Lev Belousov	Moscow State University	From regional conflicts to an age of global transformations: Russian and Bulgarian historical perspectives on the international relations in the late 19th – early 21th century
16	34	20-515-18008	Glutamatergic system as a target for the relief of neuropathic pain in diabetes mellitus	Associate Professor Doctor Pavlina Gateva	Medical University– Sofia	Natalia Shestakova	Sechenov Institute of Evolutionary Physiology and Biochemistry, Russian Academy of Sciences, Saint Petersburg	Glutamatergic system as a target for the relief of neuropathic pain in diabetes mellitus

17	93	20-54-18004	Epigenetic regulation of the interaction between the stem holoparasitic plant <i>Cuscuta campestris</i> and its hosts	Associate Professor Doctor Lyuben Zagorchev	Sofia University "St. Kliment Ohridski"	Vasili Ashapkin	Federal State Budgetary Educational Institution of Higher Education Lomonosov Moscow State University	Epigenetic regulation of the interaction between the stem holoparasitic plant <i>Cuscuta campestris</i> and its hosts
18	74	20-53-18006	Synthesis and study of the biological activity of new targeted drug delivery systems based on Au, FeOx and Au-FeOx nanoparticles	Chief assistant professor Doctor Tsvetelina Batsalova	Plovdiv University "Paisii Hilendarski"	Alexander Vasil'kov	A.N. Nesmeyanov Institute of Organoelement Compounds (INEOS), Russian Academy of Sciences, Moscow, Russia	Synthesis and study of the biological activity of new targeted drug delivery systems based on Au, FeOx and Au-FeOx nanoparticles
19	101	20-512-18006	Verbalization of cultural memory: precedent phenomena in psycholinguistic thesaurus of young Russians and Bulgarians	Associate Professor Doctor Nadya Petrova Cherneva	University of Plovdiv Paisii Hilendarski	Valeriy Anatolievich Efremov	Russian State Pedagogical University "A.I.Herzen"	Verbalization of cultural memory: precedent phenomena in psycholinguistic thesaurus of young Russians and Bulgarians
20	174	20-54-18002	Modeling of potential ranges of invasive species <i>Heracleum sosnowskyi</i> and <i>Heracleum mantegazzianum</i> in Eastern Europe	Professor Doctor Alexandar Tashev	University of Forestry – Sofia	Dalke Igor	Federal Research Centre "Komi Science Centre of the Ural Branch of the Russian Academy of Sciences"	Modeling of potential ranges of invasive species <i>Heracleum sosnowskyi</i> and <i>Heracleum mantegazzianum</i> in Eastern Europe

21	78	20-512-18005	The ontology of the stative situations in the models of language: a contrastive analysis of Bulgarian and Russian languages	Professor Doctor Svetla Koeva	Institute for the bulgarian language	Elena Ivanova	Federal State Budgetary Educational Institution of Higher Education «Saint- Petersburg State University»	The ontology of the stative situations in the models of language: a contrastive analysis of Bulgarian and Russian languages
22	19	20-55-18003	Investigation of the geomagnetic disturbances propagation to mid-latitudes and their interplanetary drivers identification for the development of mid-latitude space weather forecast	Associate Professor Doctor Veneta Guineva	Institute for Space Research and Technology	Irina Despirak	Polar Geophysical Institute	Investigation of the geomagnetic disturbances propagation to mid-latitudes and their interplanetary drivers identification for the development of mid-latitude space weather forecast
23	112	20-55-18010	Development of spatial structural and functional models of coastal territorial tourist and recreational systems for Pacific Russia, Crimea and Bulgaria	Professor Doctor Vasil Marinov	Sofia University “St. Kliment Ohridski”	Alexander Kosolapov	Pacific Geographical Institute, Far- Eastern Branch, Russian Academy of Sciences	Development of spatial structural and functional models of coastal territorial tourist and recreational systems for Pacific Russia, Crimea and Bulgaria
24	100	20-512-18001	Medieval Texts in the Contemporary Context (Modern Methods and Principles of Presentation of Medieval Texts to the Nowadays Users)	Professor Doctor Maria Yovcheva	Sofia University “St. Kliment Ohridski”	Oleg Zholobov	Kazan Federal University	Medieval Texts in the Contemporary Context (Modern Methods and Principles of Presentation of Medieval Texts to the Nowadays Users)
25	7	20-511-18002	Hierarchy and Coordination of Sources of Law in Contemporary National Legal Systems of Russia and Bulgaria	Prof. Dr. Yanaki Stoilov	Sofia University “St. Kliment Ohridski”	Anton Vasilyev	Altay State University	Hierarchy and coordination of sources of law in the national legal systems of Russia and Bulgaria

26	106	20-52-18008	Efficacy and antitumor mechanisms of photodynamic therapy using photosensitizers based on bacteriochlorins with different molecular charges.	Associate Professor Doctor Ivan Angelov	Institute of Electronics "Academician Emil Djakov"	Evgenija Kogan	Federal State Autonomous Educational Institution of Higher Education I.M. Sechenov First Moscow State Medical University of the Ministry of Healthcare of the Russian Federation (Sechenovskiy University)	Efficacy and antitumor mechanisms of PDT using photosensitizers based on bacteriochlorins with different molecular charges.
27	126	20-51-18006	Three-dimensional boundary value problems for equations of mixed type, problems with a spectral parameter and integral equations	Professor Doctor Nedyu Popivanov	Institute of Information and Communication Technologies	acad. Evgeniy Moiseev	M.V. Lomonosov Moscow State University	Three-dimensional boundary value problems for equations of mixed type, problems with a spectral parameter and integral equations
28	157	20-55-18017	Eclogites from high-grade metamorphic terrains in South Bulgaria and South Ural Mnt. – protolithic age and time of HP metamorphism	Professor Doctor Philip Machev	Sofia University "St. Kliment Ohridski"	Plotkina Yulia Vladimirovna	Institute of Precambrian Geology and Geochronology RAS	Eclogites from high-grade metamorphic terrains in South Bulgaria and South Ural Mnt. – protolithic age and time of metamorphism.

29	136	20-58-18002	Investigation of the dynamic behavior of deformable solids taking into account the material heredity	Professor Doctor Maria Datcheva	Institute of Mechanics	Sergey Pshenichnov	Lomonosov Moscow State University, Institute of Mechanics, Moscow, Russian Federation	Investigation of the dynamic behavior of deformable solids taking into account the material heredity.
30	21	20-55-18008	Modeling of seismicity and recognition of earthquake-prone areas in the Bulgarian region	Associate Professor Doctor Reneta Raykova	Sofia University "St. Kliment Ohridski"	Alexander Soloviev	Institute of Earthquake Prediction Theory and Mathematical Geophysics, Russian Academy of Sciences	Modeling of seismicity and recognition of earthquake-prone areas in the Bulgarian region
31	65	20-58-18007	Coherent optical methods based on multi-spectral and structured illumination for comprehensive study of biological objects	Professor Doctor Elena Stoykova	Institute of Optical Materials and Technologies "Acad. Jordan Malinowski"	Alexander Machikhin	Federal State Budgetary Institution of Science (FSBIS) Scientific and Technological Center of Unique Instrumentation of the Russian Academy of Sciences	Coherent optical methods based on multi-spectral and structured illumination for comprehensive study of biological objects

32	80	20-53-18002	Creation of high refractory modified chromium coatings and sol-gel oxide coatings on laminated multicomponent alloys on the basis of molybdenum and niobium	Associate Professor Doctor Vladimir Petkov	Institute of Metal Science, Equipment and Technologies "Acad. A. Balevski" with Hydro-aerodynamics Centre – Varna	Korzhov Valeriy	Institute of Solid State Physics RAS	Development of heat-resistant layered composites from multicomponent alloys of molybdenum and niobium and heat-resistant modified chromium and sol-gel-oxide protective coatings.
33	167	20-53-18001	Design of Active and Stable Catalysts for Complete Methane Oxidation by modification of Pd/Al ₂ O ₃ with cobalt and nickel. Experimental and theoretical study	Professor Doctor Silviya Todorova	Institute of Catalysis	Alexander Larin	M.V. Lomonosov Moscow State University, Moscow, Russian	Design of Active and Stable Catalysts for Complete Methane Oxidation by modification of Pd/Al ₂ O ₃ with cobalt and nickel. Experimental and theoretical study.