Collaborative S&T projects

France

Prof. Jan Borm

PARTICIPANT			
Gender	☒ Mr	☐ Ms	Title Professor
First name	Jan		
Last name	Borm		
Position	Director of CEARC		

ORGANISATION DETAILS				
Organisation name	European Center for the Arctic (CEARC)			
Street *	11 boulevard d'Alembert			
ZIP *	78280	City * Guyancourt		Country * France
Phone *	+3380285509		Fax	
Email *	eugenia.shadlova@uvsq.fr		Web	
Employees	☐ 1-10	☐ 11 - 50	☐ 51 - 250	☐ 250 +
Organisation type	☐ Higher Education Institution	☒ Research Institution	☐ Industry	☐ SME ☐ other
Department				
Short description of your company or organization	Created in 2009, European Center for the Arctic is a public research laboratory at the University of Versailles Saint-Quentin-en-Yvelines. CEARC research is based on multidisciplinary approach and covers different fields: geo- and environmental sciences, interaction between man-environment, social sciences and humanities			

TOPICS OF INTEREST REGARDING THE CALL IN "COLLABORATIVE S&T PROJECTS"
Sub-topic of exercise
1. Innovative materials and cutting edge technological processes ultrahigh-power laser sources ☐ intelligent materials and nanomaterials ☐ quantum optics ☐

2. Environmental research and cl **matic change**biodiversity and ecophysiology of natural ecosystems ☐ climate change in the arctic and subantarctic regions ☒ Material sciences connected with energy convergion and storage ☐ **3. Research on serious human health problems** viral infections: HIV and Hepatitis ☐ auto-immune diseases ☐ neurodegenerative diseases ☐ **4. Contemporary socio-economic studies** Social security systems and welfare state (in the context of globalization) ☐ Labour, labour market, and employment ☐ Transformation of the educational system ☐
Areas of activity *(Free keywords)* climate change, environment, human ecology, geography, anthropology,socio-economic dynamics

PROJECT IDEA(S)	
Short description of project	This project will be dedicated to the impact of climate change on the people of the Northern territories of the Russian Federation, with a particular attention to the Lena and Ob rivers, as well as the Kola peninsula.
Description of scientific expertise offered	The European Center for the Arctic (CEARC) is an interdisciplinary reseach laboratory with expertise in the geosciences,social and human sciences, working in close association with the climatologists and specialists in sustainability of University of Versailles Saint-Quentin en Yvelines (UVSQ).
Description of technical expertise offered	The results of the project will be fed into the multidisciplinary databank of CEARC operated together with the Institute of Geophysics of the Russian Academy of Science.
Description of requested partner scientific expertise	Firsthand knowledge of the fields of investigation in the Russian North (geography, ecology, anthropology, socio-economic dynamics)
Description of requested partner technical expertise	expertise in the logistics of expeditions to the Russian North
Potential partners (name, organisation, address …)	The Federal University of the Russian Northwest, Arkhangelsk, the Federal University of Russian Northeast, Yakutsk, Institute of Geophysics/Russian Academy of Sciences, Moscow

Prof. Eric Crubézy

PARTICIPANT			
Gender	X ☐ Mr	☐ Ms	Title : University Professor (Anthropobiology)
First name	Eric		
Last name	CRUBEZY		
Position	Dir. UMR 5288 du CNRS		

ORGANISATION DETAILS				
Organisation name	UMR 5288-AMIS (CNRS/University of Toulouse 3/University of Strasbourg			
Street *37, allées Jules Guesde				
ZIP *31073	City *Toulouse Cedex		Country *France	
Phone *+ 33 (0)5 61 55 80 94		Fax +33 (0)5 61 55 80 80		
Email *crubezy.eric@free.fr		Web : http://www.anthropobiologie.fr		
Employees	☐ 1-10	☐ 11 - 50 X	☐ 51 - 250	☐ 250 +
Organisation type	☐ Higher Education Institution	X☐ Research Institution	☐ Industry	☐ SME ☐ other
Department	INEE du CNRS			
Short description of your company or organization	The Laboratory "Molecular Anthropology and Image Synthesis" AMIS of the CNRS unit/University of Toulouse/University of Strasbourg includes 40 members of Universities and of CNRS who work in the area of fundamental studies in anthropobiology in close connection with industry and medicine for studying the opportunities for application of the obtained findings in legal medicine (degraded DNA, virtual postmortem examination) orthodontics and surgery. The originality of the laboratory is in realization of its research taking into consideration a large area of investigations, the territory work and the high precision studies in the area of palaeogenetics, genetics and image synthesis. The last eight years of anthropobiological research on the settlement of eastern Siberia has allowed to the AMIS laboratory, UMR 5288, in collaboration with Krasnoyarsk State Medical University and North East Federal University (Yakutsk), to plan research about the coevolution of man and environment in Arctic (Verkhoyansk) and subarctic region from Siberia (Central Yakoutia and Viljujsk). In France, our grant supports are first the French Ministry of Foreign and European Affairs (MAEE) for the archaeological part in Verkhoyansk in collaboration with the Interdisciplinary Laboratory of Evolution of Nature and Man in the North from the North East Federal University, second the French Polar Institute Paul Emile Victor (IPEV) for the project HUMAD n° 1038 (Coevolution of man and environment in Siberia) and for the Russian part the : Interdepartmental Laboratory of Integrative Anthropology from the Krasnoyarsk State Medical University and Interdisciplinary Laboratory of Evolution of Nature and Man in the North from the North East Federal University. Until 2010 the collaboration was a strong collaboration between French and Russian researchers but since the end of 2010 an international department (international laboratory COSIE) which will unite the researches of the three departments (two Russians on French) is planed by our institutions.			

TOPICS OF INTEREST REGARDING THE CALL IN "COLLABORATIVE S&T PROJECTS"
Sub-topic of exercise
1. Innovative materials and cutting edge technological processes ultrahigh-power laser sources ☐ intelligent materials and nanomaterials ☐ quantum optics ☐ **2. Environmental research and climatic change** biodiversity and ecophysiology of natural ecosystems ☐ X climate change in the artic and subartic regions ☐X Material sciences connected with energy convergion and storage ☐ **3. Research on serious human health problems** viral infections: HIV and Hepatitis ☐ auto-immune diseases ☐ neurodegenerative diseases ☐ **4. Contemporary socio-economic studies** Social security systems and welfare state (in the context of globalization) ☐ Labour, labour market, and employment ☐ Transformation of the educational system ☐
Areas of activity *(Free keywords) :* Anthropobiology – palaeogenetic – biodiversity and human ecology – infectious diseases - parasitology

PROJECT IDEA(S)	
Short description of project	Project : Coevolution of man and environment in a dynamic perspective including the last five centuries and present days populations and environments. A special focus on the interaction between man/parasitism/infectious diseases (especially tuberculosis) will be done. Interest : . Elective research : Biodiversity and human ecology with exceptional sampling. . Applied research : Implications in public health for Arctic and Subarctic populations (autochthonous and modern ones) from Siberia will be precised. Until now we have try to understand and precise the patterns of settlement of Arctic and Subarctic regions from Siberia with a special interest for the north east. In this field our specificity with our Russians colleagues is to study well preserved human, frozen bodies from the last five centuries. These frozen bodies make it possible to study the evolution of the population in a dynamic point of view with comparison over time from ancient and present day data. Several papers have been published since 2002 (two books, one in French in 2007 and one in Russian at the North East Federal University in 2011) and a synthesis in 2010 (Crubezy *et al.*, 2010, Human evolution in Siberia: from frozen bodies to ancient DNA. *BMC Evol. Biol.*). In the same time, with the resolution and precision of the human settlement on genetics data, the coevolution of man and environment became more and more central in our problematic. We address it with the study of the evolution of parasitism and infectious disease, especially tuberculosis.

	The choice of parasitism and infectious disease is caused by our discoveries and the interest and specificity of the French and Russian teams. In the field we have given rise to an epidemic phase of tuberculosis in subarctic associated to the first European people with a peak during the eighteenth century and a decrease. Our first results in Arctic region suggest a move back in time with a peak during the nineteenth century. These epidemic phase suggest also a selection of the population and/or an evolution of the mycobacteria but in any case a coevolution between man and environment which must be more described and analysed (what form of tuberculosis, their evolution, the evolution of the human genome, differences between arctic and subarctic regions, implications for modern populations and public health). In the same time with our colleagues we have just began a massive approach of diagnosis and infectious and parasitism disease in past and present day populations to precise and understand the coevolution of man and disease. For past population our first results using a genomic approach of the whole DNA of the teeth of frozen bodies buried together at the beginning of the nineteen century has been submitted to an international journal in January. Fort the first time at an international level it was possible, without any underlying hypothesis, to detect an ancient bacterium responsible of death. Such studies must be developed and result must be compared to present day populations. For present day populations we have begin a seroepidemiology survey of zoonoses A seroepidemiology survey of nine zoonoses was carried out and Crimea-Congo hemorrhagic fever had an 11.1% seroprevalence rate, indicating that Viljujsk is the most northern focus of this infection may be in relation with climatic changes (Magnaval *et al.*, 2010, Seroepidemiology of Nine Zoonoses in Viljujsk, Republic of Sakha (Northeastern Siberia, Russian Federation), *Vector Borne Zoonotic Dis*. 2010). This discovery at the border of biodiversity, man and disease had several implications in public health because it suggests a potential involvement of Crimea-Congo hemorrhagic fever agent, or of another member of the Bunyaviridae family, in the genesis of the so-called Viljujsk encephalomyelitis which is an important public health in subarctic regions and which could expand in arctic region with climatic changes. The French and Russians teams have the possibility to undertake such a large program because they complete one another, the Russians have the deep understanding of the field and of the specificities of their biodiversity and the French team is embarked in the field of ancient DNA, parasitism and infectious disease since more 20 years. It will be useful at that time to develop the program on a wide scale with the participation of partners specialised in climatic changes and/or palaeo environmental conditions to precise the association that we were able to suspect during the last 9 years. We can propose a first idea of the program which will be of course discussed between the different partners and adjusted, but we think that it prove our capacity to have very quickly fundamental results with an implication in public health. The first year of the program : *In the field :* - Sampling of well defined present day populations in arctic and subarctic areas for seroepidemiology studies of zoonoses and for identification and genotyping of Mycobacterium tuberculosis complex. - Precising the epidemic tuberculosis in nineteen century in the Arctic (sampling). - The climatologic team will define it's program in association with Russian and French team to try to understand relation between man and environments. *In laboratories :* - Identification and genotyping of Mycobacterium tuberculosis complex species by use of a SNaPshot Minisequencing-based assay in ancient and present day samples (in Russia or in France, the French team is at the origins of one of the test – Bouakaze *et al.*, J Clin Microbiol. 2010). - Genomic analysis of ancient samples to diagnose ancient epidemic diseases.

	- Study of the evolution of the frequency of the SNP associated to susceptibility to tuberculosis in the human genom from 15th century until present day. Climatologic team : to define. The second year of the program : Only laboratory and synthesis or only some precisions in the field. Last 6 month : publications.
Description of scientific expertise offered	Genetic, palaeogenetics, parasitism, evolution, tuberculosis. 8 years of experience in north Siberia.
Description of technical expertise offered	Palaeogenetics and palaeogenomics methods, parasitology, evolution of tuberculosis
Description of requested partner scientific expertise	Climatology, palaeoenvironmentalists, settlement pattern
Description of requested partner technical expertise	Specialist from the field for parasitism studies, excavations, ecology
Potential partners (name, organisation, address …)	In Siberia : - Krasnoyarsk : Interdepartmental Laboratory of integrative anthropology of Krasnoyarsk State Medical University (Pr. Valerian NIKOLAEV or pdt Yvan ARTUKHOV) - Yakutsk : Interdisciplinary Laboratory of Evolution of Nature and Man in the North of North-East Federal University (Pdt Anatoly ALEXEEV)

Dr Jean Jouzel

PARTICIPANT			
Gender	Male	☐ Ms	Title Dr
First name	Jouzel		
Last name	Jean		
Position	Senior Scientist at LSCE Saclay (Director of Research at CEA)		

ORGANISATION DETAILS				
Organisation name : CEA				
Street * LSCE/IPSL CEA-CNRS-UVSQ				
ZIP * 91190	City : Gif / Yvette		Country : France	
Phone 01 69087713 or 0684759682		Fax 01 69087716		
Email * jean.jouzel@lsce.ipsl.fr		Web		
Employees	☐ 1-10	☐ 11 - 50	☐ 51 - 250	☐ 250 +
Organisation type	☐ Higher Education Institution	☐ Research Institution	☐ Industry	☐ SME ☐ other
Department				
Short description of your company or organization				

TOPICS OF INTEREST REGARDING THE CALL IN "COLLABORATIVE S&T PROJECTS"
Sub-topic of exercise
1. Innovative materials and cutting edge technological processes ultrahigh-power laser sources ☐ intelligent materials and nanomaterials ☐ quantum optics ☐ **2. Environmental research and climatic change** biodiversity and ecophysiology of natural ecosystems ☐ climate change in the arctic and subarctic regions ☒ Material sciences connected with energy conversion and storage ☐ **3. Research on serious human health problems** viral infections: HIV and Hepatitis ☐ auto-immune diseases ☐

neurodegenerative diseases ☐ **4. Contemporary socio-economic studies** Social security systems and welfare state (in the context of globalization) ☐ Labour, labour market, and employment ☐ Transformation of the educational system ☐
Areas of activity *(Free keywords)*

PROJECT IDEA(S)	
Short description of project	The project will primarily aim to improve our knowledge of the water and carbon cycles (both climate related) in the sub arctic largely based on the establishment, in collaboration with Dr Zakharov' team, of permanent sampling sites where both greenhouse gases and their isotopes will be continuously measured as well as water isotopes (in water vapor and precipitation). We will aim to optimally combine carbon and water isotopes with dedicated modelling. Other complementary aspects, we are interested in, include paleoclimate studies from isotopes (carbon, hydrogen and oxygen) and permafrost studies.
Description of scientific expertise offered	We have expertise both in water (team of Valérie Masson - Delmotte) and carbon isotopes (team of Philippe Ciais), both teams being associated with this project, and with isotope modeling (both for water and carbon isotopes). On the experimental side, we are running greenouse gases and carbon isotopes measurements in numerous sites (Amsterdam Island, Mace head in Ireland, Greenland, …) and we are establishing stations for measurements of water isotopes in Arctic sites as part of an Arctic network. LSCE/IPSL is at the forefront of isotope modeling both for water and carbon isotopes.
Description of technical expertise offered	
Description of requested partner scientific expertise	
Description of requested partner technical expertise	
Potential partners (name, organisation, address …)	Professor Vyacheslav I. Zakharov Head of Global Ecology & Remote Sensing Lab Department of Physics The Ural State University 51 Lenin Ave., Ekaterinburg city 620083, Russia Phone / Fax: 7-343-261 67 78 E-mail: v.zakharov@remotesensing.ru

	Professor Vladimir V. Vasin Head of Department of Ill-Posed Problems and Application Institute of Mathematics and Mechanics RAS 16 S.Kovalevskaya street 620219, Ekaterinburg GSP-384, Russia Telephone: (343) 3743292 (office) E-mail: vasin@imm.uran.ru

Prof. Mioara Mandea

PARTICIPANT			
Gender	☐ Mr	☐ Ms	Title Professor
First name	Mioara		
Last name	MANDEA		
Position	deputy-director of CEARC		

ORGANISATION DETAILS				
Organisation name	European Center for the Arctics (CEARC)			
Street *	11 boulevard d'Alembert			
ZIP * 78280	City * Guyancourt		Country * France	
Phone * +331 80 28 55 09		Fax		
Email * mioara.mandea@uvsq.fr		Web www.mioara-mandea.eu		
Employees	☐ 1-10	☐ 11 - 50	☐ 51 - 250	☐ 250 +
Organisation type	☐ Higher Education Institution	☒ Research Institution	☐ Industry	☐ SME ☐ other
Department				
Short description of your company or organization	Created in 2009, European Center for the Arctic is a public research laboratory at the University of Versailles Saint-Quentin-en-Yvelines. CEARC research is based on multidisciplinary approach and covers different fields: geo- and environmental sciences, interaction between man-environment, social sciences and humanities			

TOPICS OF INTEREST REGARDING THE CALL IN "COLLABORATIVE S&T PROJECTS"
Sub-topic of exercise
1. Innovative materials and cutting edge technological processes ultrahigh-power laser sources ☐ intelligent materials and nanomaterials ☐ quantum optics ☐ **2. Environmental research and cl** **matic change**biodiversity and ecophysiology of natural ecosystems ☐ climate change in the artic and subartic regions ☒ Material sciences connected with energy convergion and storage ☐ **3. Research on serious human health problems** viral infections: HIV and Hepatitis ☐ auto-immune diseases ☐

neurodegenerative diseases ☐ **4. Contemporary socio-economic studies** Social security systems and welfare state (in the context of globalization) ☐ Labour, labour market, and employment ☐ Transformation of the educational system ☐
Areas of activity *(Free keywords)* climate change, environment, data analysis, socio-economic dynamics, human ecology

PROJECT IDEA(S)	
Short description of project	The proposed project focuses on the Arctic region and proposes to study the polar irregular patterns through the implementation of new mathematical tools in data. Algorithms based on Scale-Space Information Flux Approach are proposed to be developed and implemented, and they can be applied to all available data offered by two different regions: Spitzberg, and north of Siberia (from Yakutsk to Tiksi, along the Lena river). The geo-science data analysis may crosscorrelate with knowledge provided by people in northern Yakutia with respect of their own perception of climate change.
Description of scientific expertise offered	CEARC is a very new research lab, but proposes a very broad field of activities, covering a large spectrum of relations between research, education, commercial and industrial activity, governance, society and intercultural mediation to favour sustainable and acceptable development of the Arctic, which requires an integrated approach. Expertise in geophysics and signal processing are offered for this specific project.
Description of technical expertise offered	Members or associated members of CEARC have been involved in Arctic expeditions, have a large experience in implementing geophysical observatories, and in satellite data exploitation.
Description of requested partner scientific expertise	The success of the project needs partners involved in geophysical studies, Arctic environment, data processing. An important part of the project will need development of new mathematical algorithms and their implementation.
Description of requested partner technical expertise	The project might demand the installation of new observational stations.
Potential partners (name, organisation, address …)	North-Eastern Federal University Geophysical Institut of Russian Academy of Sciences (Moscow)

Dr Jacques Ranger

PARTICIPANT			
Gender	X Mr	☐ Ms	Title Dr
First name	RANGER		
Last name	Jacques		
Position	Senior Scientist		

ORGANISATION DETAILS				
Organisation name	INRA			
Street *				
ZIP * 54280	City * CHAMPENOUX		Country * FRANCE	
Phone * 33 3 83 39 40 68		Fax 33 3 83 39 40 76		
Email * ranger nancy.inra.fr		Web http//www.nancy.inra.fr		
Employees	☐ 1-10	☐ 11 - 50	☐ 51 - 250	> 250 pers
Organisation type	☐ Higher Education Institution	x Research Institution	☐ Industry	☐ SME ☐ other
Department	EFPA (Ecology of Forest, Meadows and aquatic systems)			
Short description of your company or organization	Research conducted at INRA is determined by scientific and socio economic issues in the area of food and nutrition, agriculture and the environment. It contributes to increasing knowledge, creating innovations for the good of society and providing insight to decision-makers, both public and private. This mission adopted by INRA is known as mission-oriented research.			

TOPICS OF INTEREST REGARDING THE CALL IN "COLLABORATIVE S&T PROJECTS"	
Sub-topic of exercise	
1. Innovative materials and cutting edge technological processes ultrahigh-power laser sources ☐ intelligent materials and nanomaterials ☐ quantum optics ☐ **2. Environmental research and climatic change** biodiversity and ecophysiology of natural ecosystems x climate change in the artic and subartic regions ☐ Material sciences connected with energy convergion and storage ☐ **3. Research on serious human health problems** viral infections: HIV and Hepatitis ☐ auto-immune diseases ☐	XXXXXX

neurodegenerative diseases ☐ **4. Contemporary socio-economic studies** Social security systems and welfare state (in the context of globalization) ☐ Labour, labour market, and employment ☐ Transformation of the educational system ☐
Areas of activity *(Free keywords)* Forest, soils, geochemistry, nutrient cycles,

PROJECT IDEA(S)	
Short description of project	How climatic changes impact the vegetation equilibrium ? How climatic changes impact the soil carbon storage ? The objectives are to identify the soil changes, to characterize the mecanisms and the and to formalize the results in models in order to simulate the processes and to predict the changes.
Description of scientific expertise offered	INRA research teams have the expertise in forest science, soil science, microbiology and ecophysiology necessary for developing joint collaborations with Russian partners.
Description of technical expertise offered	INRA has numerous technical experience from classical methodologies to cutting age techniques (isotopy, labelling, molecular biology, dendrochronology). INRA projects lean on long term monitored experimental natural ecosystems sites for climate, vegetation and soils.
Description of requested partner scientific expertise	The requested partner expertise concerns soil science, plant ecophysiology and modeling.
Description of requested partner technical expertise	Database on long term vegetation and soil ; sampling strategy ; model development
Potential partners (name, organisation, address …)	Institute of physico-chemical and biological problems in soil science of the Russian Academy of Science Moscow (Dr E BLAGODATSKYA) Sate Academy of Forestry Engineering Voronezh Russia Institute of soil science and agrochemistry of the Russian Academy of Sciences at Novosibirsk (P. Barsukov) And many others

Dr Dominique Raynaud

PARTICIPANT			
Gender	M ☐ Mr	☐ Ms	Title Dr.
First name	Dominique		
Last name	Raynaud		
Position	Directeur de Recherche Emerite CNRS		

ORGANISATION DETAILS				
Organisation name CNRS and University Joseph Fourier (UJF)				
Street * 54 rue Moliere				
ZIP * 38402	City *Saint-Martin-d'Heres		Country *France	
Phone *+33 (0)4 76 82 42 52		Fax		
Email * raynaud@lgge.obs.ujf-grenoble.fr		Web		
Employees	☐ 1-10	☐ 11 - 50	☐ 51 - 250	☐ 250 +
Organisation type	☐ Higher Education Institution	X☐X Research Institution	☐ Industry	☐ SME ☐ other
Department	LGGE			
Short description of your company or organization	CNRS is a gouvernent-funded research organization involved in a large spectrum of research fields. LGGE is a laboratory located in the Grenoble area and devoted to glaciological, climatic and environmental studies with a specific focus on the polar and montainous regions.			

TOPICS OF INTEREST REGARDING THE CALL IN "COLLABORATIVE S&T PROJECTS"
Sub-topic of exercise
1. Innovative materials and cutting edge technological processes ultrahigh-power laser sources ☐ intelligent materials and nanomaterials ☐ quantum optics ☐ **2. Environmental research and climatic change** biodiversity and ecophysiology of natural ecosystems ☐ climate change in the artic and subartic regions X☐X Material sciences connected with energy convergion and storage ☐ **3. Research on serious human health problems** viral infections: HIV and Hepatitis ☐ auto-immune diseases ☐

neurodegenerative diseases ☐ **4. Contemporary socio-economic studies** Social security systems and welfare state (in the context of globalization) ☐ Labour, labour market, and employment ☐ Transformation of the educational system ☐
Areas of activity *(Free keywords)* Climate, ice sheets, Greenland

PROJECT IDEA(S)	
Short description of project	The Greenland ice core record provides a wealth of climatic and environmental information about the past condition prevailing at high northern latitude as well as the changes in the ice sheet over the last 100,000 years. The project aims to improve and apply an original and new method to date in a most accurate manner the long Greenland paleoclimatic record and to infer the past change in the volume of the ice sheet and their influence on the sea level. Such information is relevant to the understanding of the impact of a partial melting of the Greenland ice sheet in the future.
Description of scientific expertise offered	The LGGE is one of the leading laboratory at the international level for ice core studies and interpreting the paleorecord covering the last million of years. He has also a leading position in the field of the modeling the response of the ice sheet to a climatic change.
Description of technical expertise offered	The LGGE, together with the Artic and Antarctic Research Institute (AARI) in Saint Petersburg, has developed an original and most precise method to measure the amount of air entrapped in the polar ice cores. This property is a powerful lool to improve the chronology of the ice cores and an indicator of the past changes in the surface elevation of Greenland.
Description of requested partner scientific and technical expertise	AARI will provide, together with LGGE, the expertise on air content measurements and the method to interprete it as a dating tool and an indicator of the past changes in ice sheet. LSCE will provide another information for improving the ice chronology based on measurements of the O2/N2 ratio and the isotopic oxygen composition of the air entrapped in the ice The Niels Bohr Institute is the main institution responsible for the NEEM ice core project which provide the Greenland ice core under study. This Institute has the leadership in most of the Greenland ice core recoveries and studies and is very well known for modeling the ice sheet and studying the past climatic record in Greenland
Description of requested partner technical expertise	see section above
Potential partners (name, organisation, address …)	1. Arctic and Antarctic Research Institute (AARI), Roshydromet, Beringa street, Saint Petersburg, Russia 2. LSCE, CEA, CNRS, UVSQ, Gif- sur-Yvette, France 3. Niels Bohr Institute, Center for ice and climate, University of Copenhagen, Copenhagen, Denmark

Mr Lasse Herbert Pettersson

PARTICIPANT			
Gender	☐ Mr		Title Mr.
First name	Lasse Herbert		
Last name	PETTERSSON		
Position	Director International cooperation/ Leading Scientist		

ORGANISATION DETAILS				
Organisation name	Nansen Environmental and Remote Sensing Center			
Street *	Thormoehelnsgate 47			
ZIP * 5006	City * Bergen		Country * NORWAY	
Phone * + 47 55205800		Fax +47 55205801		
Email * admin@nersc.no		Web http://www.nersc.no		
Employees			☐ 51 - 250	
Organisation type	☐ Higher Education Institution	☒ Research Institution	☐ Industry	☐ SME ☐ other
Department				
Short description of your company or organization	The Nansen Center generate interdisciplinary scientific knowledge in Earth system environmental and climate research, satellite remote sensing, ocean modeling and data assimilation.			

TOPICS OF INTEREST REGARDING THE CALL IN "COLLABORATIVE S&T PROJECTS"
Sub-topic of exercise
1. Innovative materials and cutting edge technological processes ultrahigh-power laser sources ☐ intelligent materials and nanomaterials ☐ quantum optics ☐ **2. Environmental research and climatic change** biodiversity and ecophysiology of natural ecosystems ☐ climate change in the artic and subartic regions ☒ Material sciences connected with energy convergion and storage ☐ **3. Research on serious human health problems** viral infections: HIV and Hepatitis ☐ auto-immune diseases ☐

neurodegenerative diseases ☐

4. Contemporary socio-economic studies

Social security systems and welfare state (in the context of globalization) ☐
Labour, labour market, and employment ☐
Transformation of the educational system ☐

Areas of activity *(Free keywords):* Marine research, arctic research, climate and environmental research, satellite remote sensing, modeling and data assimilation, training and education of PhD students

PROJECT IDEA(S)	
Short description of project	1. Studies and modeling of climate change processes in the Arctic by integrated use of field observations, satellite remote sensing and numerical modeling. 2. Development and validation of sea ice parameters derived from satellite remote sensing, including sea ice extent, sea ice types and sea ice thickness. 3. Implications of and conditions for increased shipping activities in Arctic waters.
Description of scientific expertise offered	Extensive experience in sea ice process and climate studies, remote sensing algorithm development and validation, as well as ocean and sea ice modeling.
Description of technical expertise offered	Algorithms for processing of sea ice parameters. Ocean and sea ice models, including iceberg drift model.
Description of requested partner scientific expertise	Arctic sea ice and climate studies. Sea ice process studies.
Description of requested partner technical expertise	Field observations of ice parameters - historical and new data records.
Potential partners (name, organisation, address …)	Nansen International Environmental and Remote Sensing Center, St. Petersburg , Russia, and the network of Russian partners established through this center

Dr Matthias Zielke

PARTICIPANT			
Gender	● Mr	○ Ms	Title **Dr.**
First name	Matthias		
Last name	Zielke		
Position	Researcher		

ORGANISATION DETAILS				
Organisation name	Bioforsk – Norwegian Institute for Agricultural and Environmental Research			
Street *	Fredrik Dahls vei 20			
ZIP * N-1432	City * Ås		Country * Norway	
Phone * +47 40 60 41 00		Fax +47 77 65 51 43		
Email * post@bioforsk.no		Web www.bioforsk.no		
Employees	○1-10	○ 11-50	○ 51-250	● 250+
Organisation type	☐ Higher Education Institution ☒ Res. Institution ☐ Industry ☐ SME ☐ other			
Department	Arctic Agriculture and Land Use Division, N-9269 Tromsø			
Short description of your company or organization	Bioforsk conducts applied and specifically targeted research linked to multifunctional agriculture and rural development, plant sciences, environmental protection and natural resource management. International collaboration is given high priority. Bioforsk is a national R&D institute under the Norwegian Ministry of Agriculture and Food with 500 employees. Our head office is located in Ås, near Oslo but research divisions are represented in all major regions in Norway.			

TOPICS OF INTEREST REGARDING THE CALL IN "COLLABORATIVE S&T PROJECTS"
Sub-topic of exercise
1. Innovative materials and cutting edge technological processes ultrahigh-power laser sources ☐ intelligent materials and nanomaterials ☐ quantum optics ☐ **2. Environmental research and climatic change** biodiversity and ecophysiology of natural ecosystems ☒ climate change in the artic and subartic regions ☒ Material sciences connected with energy convergion and storage ☐ **3. Research on serious human health problems** viral infections: HIV and Hepatitis ☐ auto-immune diseases ☐

neurodegenerative diseases ☐ **4. Contemporary socio-economic studies** Social security systems and welfare state (in the context of globalization) ☐ Labour, labour market, and employment ☐ Transformation of the educational system ☐
Areas of activity *(Free keywords)* Ecology of boreal ecosystems, biodiversity, climate change, plants, biogeochemistry of boreal soils

PROJECT IDEA(S)	
Short description of project	- Characterization of the most important plant communities in boreal and mountain ecosystems and study how natural and anthropogenic factors may affect these ecosystems. - Studying how abiotic and biotic parameters affect the ecophysiology indicator plants. - Finding and studying links between plant communities and biogeochemical processes (e.g. carbon turn over, nitrogen fixation and mycorhiza-plant intercation) and links between plant communities and animals/humans (e.g. wild berries as important resource for birds, bears and humans).
Description of scientific expertise offered	- Phenology as measure for ecosystem change on community, species and specimen level - Biodiversity and taxonomy of subarctic and arctic plants - Biodiversity and ecophysiology of wild berries - Soil microbiology, biogeochemical cycles, plant-microbe interactions - Adaptogenes - Biodiversity assessment and analysis
Description of technical expertise offered	- Phytotron (climate laboratory/advanced green house) - Analysis of phytoecdysteroids - GIS
Description of requested partner scientific expertise	Several (depending on the implementation and content of the proposed project)
Description of requested partner technical expertise	Several (depending on the implementation and content of the proposed project)
PARTNERS	
Partners' names, organizations and addresses	Several (depending on the implementation and content of the proposed project)

ERA.Net RUS

SEVENTH FRAMEWORK PROGRAMME

Russia

Dr Anatoly Astakhov

PARTICIPANT			
Gender	✓ ☐ Mr	☐ Ms	Title Dr
First name	Anatoly		
Last name	Astakhov		
Position	deputy director		

ORGANISATION DETAILS				
Organisation name: V.Il'ichev Pacific Oceanological Institute (POI)				
Street * Baltiyskaya, 43				
ZIP * 690041	City * Vladivostok		Country * Russia	
Phone * 7-4232-310694		Fax 7-4232-310694		
Email * astakhov@poi.dvo.ru		Web http://www.poi.dvo.ru		
Employees	☐ 1-10	☐ 11 - 50	☐ 51 - 250	✓ ☐ 250 +
Organisation type	☐ Higher Education Institution	+☐ Research Institution	☐ Industry	☐ SME ☐ other
Department	Marine geology and geophisycs			
Short description of your company or organization	The POI is the research institution of the Russian Academy of Sciences. Main field of the studies are: - comprehensive hydrophysical, hydrochemical and hydrobiological studies of water masses in seas and oceans, their physical fields (acoustic, optical, electromagnetic, temperature), some parameters (sea wave, ocean currents, vortices, internal waves, ice cover, etc.) energy-mass exchange and the interaction of the ocean and atmosphere, marine ecosystems state; - studies of geology, geophysics and geochemistry of the Pacific and Arctic Oceans and its mineral resources; paleooceanology; - development of new methods and creation of technical means to study the ocean and atmosphere, development and application of the remote control methods, creation and analysis of the oceanography data bases.			

TOPICS OF INTEREST REGARDING THE CALL IN "COLLABORATIVE S&T PROJECTS"
Sub-topic of exercise: **2. Environmental research and climatic change: climate change in the arctic and subartic regions**
1. Innovative materials and cutting edge technological processes ultrahigh-power laser sources ☐ intelligent materials and nanomaterials ☐ quantum optics ☐

2. Environmental research and climatic change
biodiversity and ecophysiology of natural ecosystems ☐
climate change in the artic and subartic regions + ☐
Material sciences connected with energy convergion and storage ☐

3. Research on serious human health problems
viral infections: HIV and Hepatitis ☐
auto-immune diseases ☐
neurodegenerative diseases ☐

4. Contemporary socio-economic studies
Social security systems and welfare state (in the context of globalization) ☐
Labour, labour market, and employment ☐
Transformation of the educational system ☐

Areas of activity *(Free keywords)* *marine sedimentation, geochemistry, micropaleontology, paleoceanology, ice sheet, recent geological processes*

PROJECT IDEA(S)	
Short description of project	We plan to study the East sector of Russian Arctic to reveal the environmental changes at the past which can throw light on the fast enhanced sea ice-cover degradation at this region during last decades. Such specific characteristics of the surface and dated core sediments (glacial-interglacial cycles) from the Chukchi and East-Siberian Seas and its borderland will be studied as geochemical and mineralogical content as well as microfossils (diatoms, foraminifera, and pollen). The Late Holocene sections and sediments accumulated during Historical time will be studied in detail. The role of the main factors (climatic, geological, paleooceanological) leading to environmental changes at the past will be determined as well as probable conditions of the rapid ice-cover degradation at present will be established. To reconstruct high resolution changes of surface waters, productivity, sedimentation and climate for the Late Quaternary and especially during abrupt climate changes such as glacial terminations, Younger Dryas events, and the Holocene. The sea ice cover is a more sensitive indicator of the regional surface water conditions, so detailed documentation of its changes and ways of migrations in the past are also important. Study the development and interaction of basins of the Arctic and Pacific oceans through the Bering Strait including hydrology, sea-ice and sedimentation in relation to global changes of climate and sea level. There are sedimentology including study of ice rafted debris, clay and clastic mineralogy, eolian material, magnetic susceptibility), oxygen and carbon isotopic composition of planktonic and benthic foraminifera and micropaleontological methods (diatoms, silicoflagellates, radiolaria, foraminifera etc.), geochemical methods (carbonate, organic carbon and opal content in sediments) and so on.
Description of scientific expertise offered	The institute employees are experts in sedimentology, micropaleontology, paleooceanology. We have the wide experience in conducting organization of the marine expeditions in the Arctic and the North Pacific in collaboration with Swedish Polar Research Secretariat (ISSS-08), IFM-GEOMAR (KOMEX, KALMAR), and AWI (Alfred-Wegener-Institute) (INOPEX).
Description of technical expertise offered	We have the collection of the surface and core sediment samples from the Chukchi, East-Siberian and Laptev Seas as well as from the certain Arctic deep-sea regions. The samples are partly studied (grain size analysis, geochemistry, biogenic element content, diatom analysis). The institute has vessels which can work at the Arctic up to 75° North, modern geophysical and

	oceanological equipment, equipment for core and surface-sediment sampling (gravity cores, box-corer, grabs) as well as for water and surface-sediments chemical analysis.
Description of requested partner scientific expertise	We plan to collaborate with organization experienced in the Arctic field of sedimentology, paleooceanology, Quaternary stratigraphy, radiochronology for carrying out complex paleoenvironmental analysis according to oceanological, sedimentological and geological conditions.
Description of requested partner technical expertise	We need an opportunity for radioisotope dating (AMS ^{14}C, ^{210}Pb, ^{137}Cs) for creation of high-resolution age models, precise dating of regional paleoenvironment changes and there correlation with the global events, isotope analysis of C, N, O, Si from biogenic matter and possibility to obtain additional sediment cores from the deep-sea East-Siberian and Chukchi Sea borderlands.
Potential partners (name, organisation, address …)	1. Martin Jakobsson and Jan Backman - Department of Geology and Geochemistry, Stockholm University, 106 91 Stockholm, Sweden (**martin.jakobsson**@geo.su.se) 2. Leif Anderson - Department of Chemistry, Göteborg University, Göteborg, Sweden (Phone: +46(0)31-772 2774, E-mail: leifand@) 3. N. Nørgaard Pedersen - Geological Survey of Denmark and Greenland, DK-1350 Copenhagen, Denmark 4. Henk Brinkhuis – Prof., Laboratory of Palaeobotany & Palynology, Department of Biology, Utrecht University, 3584 DC Utrecht, The Netherlands (Phone: +31 30 253 7691 Email: h.brinkhuis@uu.nl) 5. Michael Kaminski - Department of Earth Sciences, University College London, London WC1E 6BT, UK **(**m.kaminski@ucl.ac.uk**)** 6. Ruediger Stein - Alfred Wegener Institute Foundation for Polar and Marine Research, D-27515 Bremerhaven, Germany (rstein@awi-bremerhaven.de) 7. Dirk Nürnberg and Martin Frank - Leibniz-Institute of Marine Sciences, IFM-GEOMAR, 24148 Kiel, Germany (dnuernberg@ifm-geomar.de) 8. Emmanuelle Pucéat - Université de Bourgogne 21000 Dijon France Tel: 33 (0)3 80 39 63 81 Email: emmanuelle.puceat@u-bourgogne.fr

Mrs Elena Cherenkova

PARTICIPANT			
Gender	☐ Mr	☒ Ms	Title PhD
First name	Elena		
Last name	Cherenkova		
Position	Researcher		

ORGANISATION DETAILS				
Organisation name	Institute of Geography Russian Academy of Sciences			
Street *				
ZIP *	City * Moscow		Country * Russia	
Phone *			Fax +7 495 9590033	
Email *			Web http://igras.ru/	
Employees	☐ 1-10	☐ 11 - 50	☐ 51 - 250	☐ 250 +
Organisation type	☐ Higher Education Institution	+ Research Institution ☐	Industry ☐	SME ☐ other ☐
Department	Laboratory of Climatology			
Short description of your company or organization	IG RAS			

TOPICS OF INTEREST REGARDING THE CALL IN "COLLABORATIVE S&T PROJECTS"
Sub-topic of exercise
1. Innovative materials and cutting edge technological processes ultrahigh-power laser sources ☐ intelligent materials and nanomaterials ☐ quantum optics ☐ **2. Environmental research and climatic change** biodiversity and ecophysiology of natural ecosystems + climate change in the artic and subartic regions ☐ Material sciences connected with energy convergion and storage ☐ **3. Research on serious human health problems** viral infections: HIV and Hepatitis ☐ auto-immune diseases ☐ neurodegenerative diseases ☐

4. Contemporary socio-economic studies Social security systems and welfare state (in the context of globalization) ☐ Labour, labour market, and employment ☐ Transformation of the educational system ☐
Areas of activity *(Free keywords)* climate change, drought, desertification

PROJECT IDEA(S)	
Short description of project	Climate change, drought risk and desertification: impacts to society and the environment
Description of scientific expertise offered	
Description of technical expertise offered	
Description of requested partner scientific expertise	
Description of requested partner technical expertise	
Potential partners (name, organisation, address …)	

Prof. Dr Efim Frisman

PARTICIPANT			
Gender	x ☐ Mr	☐ Ms	Title Prof., Dr.
First name	Efim		
Last name	Frisman		
Position	Director		

ORGANISATION DETAILS				
Organisation name Institute for Complex Analysis of Regional Problems Far Eastern Branch Russian Academy of Sciences				
Street * Sholom-Aleikhem St., 4				
ZIP * 679016	City * Birobidzhan		Country *Russian Federation	
Phone * +7 4262220405		Fax +7 4262261362		
Email * frisman@mail.ru		Web http://icarp.ru/		
Employees	☐ 1-10	☐ 11 - 50	x ☐ 51 - 250	☐ 250 +
Organisation type	☐ Higher Education Institution	x☐ Research Institution	☐ Industry	☐ SME ☐ other
Department				
Short description of your company or organization	Basic directions of scientific activity: complex analysis and modeling the processes of development for natural and nature-economic regional systems; investigating the character of interaction between nature and society in regional systems.			

TOPICS OF INTEREST REGARDING THE CALL IN "COLLABORATIVE S&T PROJECTS"
Sub-topic of exercise
1. Innovative materials and cutting edge technological processes ultrahigh-power laser sources ☐ intelligent materials and nanomaterials ☐ quantum optics ☐ **2. Environmental research and climatic change** biodiversity and ecophysiology of natural ecosystems ☐x climate change in the artic and subartic regions ☐ Material sciences connected with energy convergion and storage ☐ **3. Research on serious human health problems** viral infections: HIV and Hepatitis ☐

auto-immune diseases ☐ neurodegenerative diseases ☐ **4. Contemporary socio-economic studies** Social security systems and welfare state (in the context of globalization) ☐ Labour, labour market, and employment ☐ Transformation of the educational system ☐
Areas of activity *(Free keywords)*

PROJECT IDEA(S)	
Short description of project	Modern state and scenario for development of natural ecosystems in regions with mixed floristic and faunistic zones in conditions of climate change. Comparison of processies in different regions and optimisation of environmental management in case of negative effect.
Description of scientific expertise offered	Investigation of a role of intraspecific and interspecific competition in forming and developed stratified forest cenosis stable in time with the help of the stand dynamics individually-oriented model. Analysis of game animal species natural habitat and their seasonal arrangement for certain regional ecosystems. Evaluation of dynamics in fodder reserves effecting a reproduction, survival and seasonal migration for game animal species in changing climatic conditions. Analysis of the present-day composition of small mammals in the region with use of genetic characteristics as a part of taxonomic investigation. Assessment of formation and development of dynamic regimes in the dynamics models for a limited population with age and sex structure.
Description of technical expertise offered	Development of base dynamic model for study of interspecific interactions in the wood stratified coenosis, computational experiments with a set of basic forest-forming species of the Middle Amur Region in Russia (humid), Germany (humid and semi-arid) and Izrael (arid) regions with different and changing climatic conditions. Elaboration of dynamic models for a limited population with age and sex structure. Analysis of synchronization mechanisms in fluctuation of biological population systems connected with migrations. Assessment of game influence on the populations' development and its optimization for environmental management. Estimation of mechanisms for spatial synchronization on the example of models for spatial-temporal dynamics of heterogeneous metapopulation.
Description of requested partner scientific expertise	Estimation of biodiversity and ecophysiology of natural ecosystems in regions with mixed floristic and faunistic zones in Germany and Izrael in conditions of climate change. Comparison of processies in different regions and optimisation of environmental management in case of negative effect.
Description of requested partner technical expertise	Elaboration of dynamic models for main species in regions with mixed floristic and faunistic zones in changed climate, their verification and evaluation.
Potential partners (name, organisation, address …)	Prof. Pedro Berliner, Director, the Jacob Blaustein Institutes for Desert Research (BIDR), Sede Boqer Campus 84990, Israel Tel: 972-8-6596700, Fax: 972-8-6596703 email: dirbidr@bgu.ac.il, http://www.bgu.ac.il/BIDR Prof. Dr. Ralf Meissner, Department Bodenphysik Lysimeter Station Falkenberg, Helmholtz Centre for Environmental Research – UFZ, Dorfstrasse 55, 39615 Falkenberg, Germany Tel: +49 3918109771, Fax: +49 341235459771 email: ralf.meissner@ufz.de, http://www.ufz.de

Dr Elena Grigorieva

PARTICIPANT			
Gender	☐ Mr	x ☐ Ms	Title Dr.
First name	Elena		
Last name	Grigorieva		
Position	Scientific Secretary		

ORGANISATION DETAILS				
Organisation name Institute for Complex Analysis of Regional Problems Far Eastern Branch Russian Academy of Sciences				
Street * Sholom-Aleikhem St., 4				
ZIP * 679016	City * Birobidzhan		Country *Russian Federation	
Phone * +7 4262220543		Fax +7 4262261362		
Email * eagrigor@yandex.ru		Web http://icarp.ru/		
Employees	☐ 1-10	☐ 11 - 50	x ☐ 51 - 250	☐ 250 +
Organisation type	☐ Higher Education Institution	x ☐ Research Institution	☐ Industry	☐ SME ☐ other
Department				
Short description of your company or organization	Basic directions of scientific activity: complex analysis and modeling the processes of development for natural and nature-economic regional systems; investigating the character of interaction between nature and society in regional systems.			

TOPICS OF INTEREST REGARDING THE CALL IN "COLLABORATIVE S&T PROJECTS"
Sub-topic of exercise
1. Innovative materials and cutting edge technological processes ultrahigh-power laser sources ☐ intelligent materials and nanomaterials ☐ quantum optics ☐ **2. Environmental research and climatic change** biodiversity and ecophysiology of natural ecosystems ☐x climate change in the artic and subartic regions ☐ Material sciences connected with energy convergion and storage ☐ **3. Research on serious human health problems** viral infections: HIV and Hepatitis ☐ auto-immune diseases ☐

neurodegenerative diseases ☐ **4. Contemporary socio-economic studies** Social security systems and welfare state (in the context of globalization) ☐ Labour, labour market, and employment ☐ Transformation of the educational system ☐
Areas of activity *(Free keywords)*

PROJECT IDEA(S)	
Short description of project	Modern state and scenario for development of natural ecosystems in regions with mixed floristic and faunistic zones in conditions of climate change. Comparison of processies in different regions and optimisation of environmental management in case of negative effect.
Description of scientific expertise offered	Investigation of a role of intraspecific and interspecific competition in forming and developed stratified forest cenosis stable in time with the help of the stand dynamics individually-oriented model. Analysis of game animal species natural habitat and their seasonal arrangement for certain regional ecosystems. Evaluation of dynamics in fodder reserves effecting a reproduction, survival and seasonal migration for game animal species in changing climatic conditions. Analysis of the present-day composition of small mammals in the region with use of genetic characteristics as a part of taxonomic investigation. Assessment of formation and development of dynamic regimes in the dynamics models for a limited population with age and sex structure.
Description of technical expertise offered	Development of base dynamic model for study of interspecific interactions in the wood stratified coenosis, computational experiments with a set of basic forest-forming species of the Middle Amur Region in Russia (humid), Germany (humid and semi-arid) and Izrael (arid) regions with different and changing climatic conditions. Elaboration of dynamic models for a limited population with age and sex structure. Analysis of synchronization mechanisms in fluctuation of biological population systems connected with migrations. Assessment of game influence on the populations' development and its optimization for environmental management. Estimation of mechanisms for spatial synchronization on the example of models for spatial-temporal dynamics of heterogeneous metapopulation.
Description of requested partner scientific expertise	Estimation of biodiversity and ecophysiology of natural ecosystems in regions with mixed floristic and faunistic zones in Germany and Izrael in conditions of climate change. Comparison of processies in different regions and optimisation of environmental management in case of negative effect.
Description of requested partner technical expertise	Elaboration of dynamic models for main species in regions with mixed floristic and faunistic zones in changed climate, their verification and evaluation.
Potential partners (name, organisation, address …)	Prof. Pedro Berliner, Director, the Jacob Blaustein Institutes for Desert Research (BIDR), Sede Boqer Campus 84990, Israel Tel: 972-8-6596700, Fax: 972-8-6596703 email: dirbidr@bgu.ac.il, http://www.bgu.ac.il/BIDR Prof. Dr. Ralf Meissner, Department Bodenphysik Lysimeter Station Falkenberg, Helmholtz Centre for Environmental Research – UFZ, Dorfstrasse 55, 39615 Falkenberg, Germany Tel: +49 3918109771, Fax: +49 341235459771 email: ralf.meissner@ufz.de, http://www.ufz.de

Dr.Sc. Ivan Kalugin

PARTICIPANT			
Gender	☐ Mr	☐ Ms	Title Dr. Sc.
First name	Ivan		
Last name	Kalugin		
Position	Lead researcher		

ORGANISATION DETAILS				
Organisation name	Institute of Geology and Mineralogy Russian Academy of Sciences, Siberian Branch			
Street *	Prospekt akademika Koptyuga, 3			
ZIP * 630090	City * Novosibirsk		Country * Russia	
Phone * +7 383 333-31-12		Fax +7 383 333-27-92		
Email * ikalugin@uiggm.nsc.ru		Web		
Employees	☐ 1-10	☐ 11 - 50	☐ 51 - 250	☐ 250 +
Organisation type	☐ Higher Education Institution	☒ Research Institution	☐ Industry	☐ SME ☐ other
Department	Sedimentology Geochemistry			
Short description of your company or organization	Institute of Geology and Mineralogy Russian Academy of Sciences, Siberian Branch, was established in 1957. Basic lines of theoretical and applied research are tectonics, magmatism, fluid regime and metallogeny, as well as environmental and nature management, enviromnent monitoring, enviromnental geochemistry of natural and cultural landscapes, climate studies and reconstructions of paleoclimates and Cenozoic deposition. Analytical centre provided modern equipment is functioning within IGM. IGM provides oportunities for PhD programms in fields listed above.			

TOPICS OF INTEREST REGARDING THE CALL IN "COLLABORATIVE S&T PROJECTS"
Sub-topic of exercise
1. Innovative materials and cutting edge technological processes ultrahigh-power laser sources ☐ intelligent materials and nanomaterials ☐ quantum optics ☐ **2. Environmental research and climatic change** biodiversity and ecophysiology of natural ecosystems ☐ climate change in the artic and subartic regions ☒ Material sciences connected with energy convergion and storage ☐ **3. Research on serious human health problems** viral infections: HIV and Hepatitis ☐

auto-immune diseases ☐
neurodegenerative diseases ☐

4. Contemporary socio-economic studies
Social security systems and welfare state (in the context of globalization) ☐
Labour, labour market, and employment ☐
Transformation of the educational system ☐

Areas of activity *(Free keywords)* analytical microstratigraphy – scanning X-ray flourescence analysis on Synchrotron radiation (XRF SR) with associated methods for lake sediments: field works, lithology, physical properties measurements, counting of annual layers, isotope dating; multi-proxy climate reconstructions.,

PROJECT IDEA(S)	
Short description of project	In order to reconstruct the last millennium climate in the Khibini mountains and surrounding subartic regions we will use the multi-proxy approach. We will sample and analyze trees and sub-fossil wood (tree width, density and stable isotopes), lake sediments and glacial moraines (lichenometry, 14C, 10Be). All these proxies are independent sources of climatic information. The advantage of this multi-proxy approach is the opportunity to reconstruct different climatic parameters, forcing the climatic signals in varies proxies. Using this approach we will be able to assess the high to low frequency climatic variability and to provide high resolution reliable regional climate reconstruction for the Khibini mountains and surrounding subartic regions useful for improving existing global climatic reconstruction and for further modeling experiments.
Description of scientific expertise offered	Research group deals of high resolution paleoclimatic reconstructions by lake sediments in Central Asia. Our group within lab Cenozoic Geology and Paleoclimate specializes on the lithological-geochemical analysis of recent lake sediments and quantitative reconstructions of climate variability on annual-decadal scale for the Holocene. Annually laminated sediments are preferable objects during the last time.
Description of technical expertise offered	Our research group consists of 4 research scientists, 3 student and 1 qualified technicians. We can select sediment cores and completely to process and analyse it, including scanning XRF SR, gamma spectrometry, preparing of solid preparates, optical and SE Microscopy,measurements of physical properties – magnetic, density, grin size etc. We have experts in lithology e.g. analytical geochemistry , We also have necessary equipment for coring (box-corer, gravity and piston corers).
Description of requested partner scientific expertise	For success of this project we require partners with expertise in radiocarbon dating, in paleoclimatology as well.
Description of requested partner technical expertise	We need to include in project a laboratory to process radiocarbon dating by AMS,
Potential partners (name, organisation, address …)	Dr. Tatjana Boettger UFZ, Helmholtz Centre for Environmental Research–UFZ, Department of Isotope Hydrology, Theodor-Lieser-Strasse 4, D-06120 Halle, Germany. phone +49 3345 5585 227 / fax +49 3345 5585 449 tatjana.boettger@ufz.de

	Dr. Michael Friedrich Institute of Botany (210), Hohenheim University, Garbenstrasse 30, D-70593 Stuttgart, Germany Tel. +49 (0)711 459-22196, Fax +49 (0)711 459-23355 Michael.Friedrich@uni-hohenheim.de Dr. Jomelli Vincent Laboratoire de Geographie Physique, CNRS, UMR 8591 1 place A. Briand 92195 Meudon, France Tel. 33 1 45 07 55 81, 33 4 67 83 95 41

Dr Ilya Mordvintsev

PARTICIPANT			
Gender	☐ Mr	☐ Ms	Title Dr.
First name	Ilya		
Last name	Mordvintsev		
Position	Senior research scientist		

ORGANISATION DETAILS				
Organisation name	A.N. Severtsov Institute of Ecology and Evolution of the Russian Academy of Sciences			
Street *	33, Leninskiy prospect			
ZIP * 119071	City * Moscow		Country * Russia	
Phone * +7-926-708-78-41		Fax +7-495-135-99-71		
Email * ilia.mordvintsev@gmail.com		Web www.sevin.ru		
Employees	☐ 1-10	☐ 11 - 50	☐ 51 - 250	☐ 250 +
Organisation type	☐ Higher Education Institution	☒ Research Institution	☐ Industry	☐ SME ☐ other
Department	Laboratory for biodiversity concervancy and bioresources use			
Short description of your company or organization	The **Institute of Ecology and Evolution** of the Russian Academy of Sciences established in 1934 by academician **A.N. Severtsov** is one of the leading biological institutes of Russia. The Institute is a scientific research centre on ecology, biological diversity, ethology, evolutionary morphology and nature conservation. The principal directions of studies are: - structural and functional organization, dynamics and evolution of populations, communities and ecosystems; - ecology of organisms and mechanisms of adaptation; - ecological and evolutionary aspects of animal behavior and communications; - morphological regularities and mechanisms of animal evolution; - biological diversity and sustainable use of biological resources; - fundamental problems of nature conservation.			

TOPICS OF INTEREST REGARDING THE CALL IN "COLLABORATIVE S&T PROJECTS"
Sub-topic of exercise Improvement of the system of the methods for evaluation of the state and monitoring (including satellite remote sensing) of the objects of animal world, including the species registered in the Red Data Books of various rank, and also of their environment. Sea ice dynamics and multiyear variability in framework of global climate changes.
1. Innovative materials and cutting edge technological processes ultrahigh-power laser sources ☐ intelligent materials and nanomaterials ☐ quantum optics ☐ **2. Environmental research and climatic change** biodiversity and ecophysiology of natural ecosystems ☒

climate change in the artic and subartic regions ☒ Material sciences connected with energy convergion and storage ☐ **3. Research on serious human health problems** viral infections: HIV and Hepatitis ☐ auto-immune diseases ☐ neurodegenerative diseases ☐ **4. Contemporary socio-economic studies** Social security systems and welfare state (in the context of globalization) ☐ Labour, labour market, and employment ☐ Transformation of the educational system ☐
Areas of activity *(Free keywords)* Russian Arctic, sea ice habitats, arctic ecosystems, polar bear, Argos satellite tracking

PROJECT IDEA(S)	
Short description of project	Polar bear satellite tracking in the Russian Arctic Regions
Description of scientific expertise offered	Remote sensing (satellite and aerial) for habitat studies. Polar bear ecology.
Description of technical expertise offered	Remote sensing satellite systems (radar (SAR), passive microwave).
Description of requested partner scientific expertise	Alaska Science Center, USGS USA
Description of requested partner technical expertise	
Potential partners (name, organisation, address …)	David C. Douglas Research Wildlife Biologist USGS Alaska Science Center Biology and Geography Sciences, Juneau Office, 3100 National Park Road Juneau, AK 99801 U.S.A.

Prof. Dr Andrei Naumov

PARTICIPANT			
Gender	☐ Mr	☐ Ms	Title Prof. Dr.
First name	Andrei		
Last name	Naumov		
Position	Scientific vice-director, head of department		

ORGANISATION DETAILS				
Organization name	Institute for Spectroscopy, Russian Academy of Sciences			
Street *	Fizicheskaya Str., 5			
ZIP * 142190	City * Troitsk, Moscow region		Country * Russia	
Phone * +7(910)4706703		Fax +7(496)7510886		
Email * naumov@isan.troitsk.ru		Web www.isan.troitsk.ru		
Employees	☐ 1-10	☐ 11 - 50	☐ 51 - 250	☐ 250 +
Organisation type	☒ Higher Education Institution	☒ Research Institution	☐ Industry	☐ SME ☐ other
Department	Direction, Molecular Spectroscopy Department			
Short description of your company or organization	The Institute's activity covers practically all kinds of spectroscopies: atomic, molecular, plasma, gases, liquids, condensed matter, disordered solids, crystals, nanostructures, polymers, biological systems; as well as related fields, R&D, and education.			

TOPICS OF INTEREST REGARDING THE CALL IN "COLLABORATIVE S&T PROJECTS"
Sub-topic of exercise
1. Innovative materials and cutting edge technological processes ultrahigh-power laser sources ☒ intelligent materials and nanomaterials ☒ quantum optics ☒ **2. Environmental research and climatic change** biodiversity and ecophysiology of natural ecosystems ☐ climate change in the artic and subartic regions ☐ Material sciences connected with energy convergion and storage ☒ **3. Research on serious human health problems** viral infections: HIV and Hepatitis ☐ auto-immune diseases ☐

neurodegenerative diseases ☐

4. Contemporary socio-economic studies
Social security systems and welfare state (in the context of globalization) ☐
Labour, labour market, and employment ☐
Transformation of the educational system ☒

Areas of activity *(Free keywords)* Physics, physical chemistry, optics, spectroscopy, microscopy, diagnostics, nanotechnology, nanolithography, biophysics, lasers, atoms, molecules, plasma, condensed matter, nanostructures, metamaterials, biological systems.

PROJECT IDEA(S)	
Short description of project	Spectroscopy and imaging of single quantum objects (quantum dots, molecular complexes, dye molecules embedded into condensed matter). Spectral nanodiagnostics of structure and dynamics of disordered solids by single-molecule spectromicroscopy.
Description of scientific expertise offered	Single-molecule spectroscopy and imaging, nanoparticle detection, photon echo, low-temperature glass and polymer dynamics, theoretical quantum optics, Raman scattering, automatic images recognition.
Description of technical expertise offered	Equipment for single-molecule spectromicroscopy and photon echo in condensed matter doped with emitting nanoprobe centers in a broad range of low temperatures (from 1,5K to room temperature) at normal and high (upto 30 kbar) hydrostatic pressure.
Description of requested partner scientific expertise	Physics and physical chemistry of single quantum objects (organic dyes, molecular complexes, quantum dots, nanocrystals). Dynamics of disordered solids (relaxations, glass transition).
Description of requested partner technical expertise	Synthesis of dyes, macromolecules, polymers, molecular complexes; equipment for single-molecule spectroscopy, imaging, atomic-force microscopy, cryogenic researches; equipment for researches of disordered solids dynamics.
Potential partners (name, organisation, address …)	Prof. J. Koehler, Prof. L. Kador, Prof, E. Roessler, Bayreuth University, Germany; Prof. M. Orrit, Leiden University, The Netherlands; Prof. T. Basche, University of Mainz, Germany

Mr Valery A. Rasskazov

PARTICIPANT			
Gender	☐ Mr	☐ Ms	Title Ph.D.
First name	Valery A.		
Last name	Rasskazov		
Position	Deputy Director		

ORGANISATION DETAILS				
Organisation name: Pacific Institute of Bioorganic Chemistry of Far Eastern Branch of RAS				
Street * Prospect Stoletya 159a				
ZIP * 690022	City * Vladivostok		Country * Russian Federation	
Phone * +7(4232) 31-14-30		Fax * +7(4232) 31-40-50		
Email * raskaz@piboc.dvo.ru		Web http://www.piboc.dvo.ru/		
Employees	☐ 1-10	☐ 11 - 50	☐ 51 - 250	☐ 250+
Organisation type	☐ Higher Education Institution	☒ Research Institution	☐ Industry	☐ SME ☐ other
Department				
Short description of your company or organization	Pacific Institute of Bioorganic Chemistry conducts researches in the field of bioorganic chemistry, biochemistry, molecular immunology, marine microbiology and biotechnology. Objects of the researches are the marine organisms (including microorganisms) of Ocean and unique forests plants of the Far East of Russia. Many chemical compounds studied in Institute have been shown to possess a powerful physiological activity towards cancer cells and pathogenic viruses and bacteria, that has created the basis for production of the novel medicines and food additives for treatment and prophylaxis of the different human diseases.			

TOPICS OF INTEREST REGARDING THE CALL IN "COLLABORATIVE S&T PROJECTS"
Sub-topic of exercise
1. Innovative materials and cutting edge technological processes ultrahigh-power laser sources ☐ intelligent materials and nanomaterials ☒ quantum optics ☐ **2. Environmental research and climatic change** biodiversity and ecophysiology of natural ecosystems ☒ climate change in the artic and subartic regions ☐ Material sciences connected with energy convergion and storage ☐ **3. Research on serious human health problems**

viral infections: HIV and Hepatitis ☐ auto-immune diseases ☐ neurodegenerative diseases ☐ **4. Contemporary socio-economic studies** Social security systems and welfare state (in the context of globalization) ☐ Labour, labour market, and employment ☐ Transformation of the educational system ☐
Areas of activity *(Free keywords)* Natural compounds, marine invertebrates, marine microorganisms, algae, structure, biological activity, anticancer effect, antifungal activity, antioxidants, antiviral activity, immunostimulator, cancer-preventive activity, novel leads against fungal, parasitic, bacterial, and viral diseases.

PROJECT IDEA(S)	
Short description of project	Searching for novel bioregulators among the marine organisms, including microorganisms, studying their structure and biological activity and working out the novel technologies to obtain the novel medicines and valuable biochemical preparations for diagnostics and treatment such diseases as cancer, viral, autoimmune, cardiovascular and neurodegenerative etc.
Description of scientific expertise offered	We would need scientific expertise to this project who: - would carry out the investigations in field of the natural compounds chemistry and would carry out the investigations in field of natural compounds bioassaying; - would have the experience of the creation of the novel medicines to treat such diseases as cancer, viral, autoimmune, cardiovascular and neurodegenerative;
Description of technical expertise offered	We would need technical expertise to this project who: - would have the experience in field of working out the novel technological methods for preparations of the novel medicines; - would have the experience in assessment of market prospects for novel medicines
Description of requested partner scientific expertise	We would need scientific expertise requested partner to this project who: - would carry out the investigations in field of the natural compounds chemistry and would carry out the investigations in field of natural compounds bioassaying; - would have the experience of the creation of the novel medicines to treat such diseases as cancer, viral, autoimmune, cardiovascular and neurodegenerative;
Description of requested partner technical expertise	We would need technical expertise requested partner to this project who: - would have the experience in field of working out the novel technological methods for preparations of the novel medicines ; - would have the experience in assessment of market prospects for novel medicines
Potential partners (name, organisation, address …)	- Proteome Center Rostock, University of Rostock, Schillingallee 69, D-18057 Rostock, Germany; - Institute of Immunology, University of Rostock, Schillingallee 68, D-18057 Rostock, Germany; - AstraZeneca Global; - Novartis Institutes for Biomedical Research; - Pharma Research and Early Development, Roche;

Dr Alexander Savvichev

PARTICIPANT			
Gender	x	☐ Ms	Title Dr
First name	Alexander		
Last name	Savvichev		
Position	scientific associate		

ORGANISATION DETAILS				
Organisation name Winogradsky Institute of Microbiology RAS				
Street * Pr. 60-Letiya Oktyabrya, 7-2				
ZIP *	City * Moscow		Country * Russia	
Phone * (499) 1357977		Fax (499) 1356530		
Email * savvichev@mail.ru		Web		
Employees	☐ 1-10	☐ 11 - 50	X	☐ 250 +
Organisation type	☐ Higher Education Institution	X Research Institution	☐ Industry	☐ SME ☐ other
Department	Russian Academy of Science			
Short description of your company or organization				

TOPICS OF INTEREST REGARDING THE CALL IN "COLLABORATIVE S&T PROJECTS"
Sub-topic of exercise
1. Innovative materials and cutting edge technological processes ultrahigh-power laser sources ☐ intelligent materials and nanomaterials ☐ quantum optics ☐ **2. Environmental research and climatic change** biodiversity and ecophysiology of natural ecosystems ☐ climate change in the artic and subartic regions X Material sciences connected with energy convergion and storage ☐ **3. Research on serious human health problems** viral infections: HIV and Hepatitis ☐ auto-immune diseases ☐

neurodegenerative diseases ☐ **4. Contemporary socio-economic studies** Social security systems and welfare state (in the context of globalization) ☐ Labour, labour market, and employment ☐ Transformation of the educational system ☐
Areas of activity *(Free keywords)* Microbial processes of carbon and sulfur cycles in water column and sediments of Arctic Seas

PROJECT IDEA(S)	
Short description of project	Studying of activity of microbial processes of methane generation and oxidation in coastal water areas of the seas of Arctic regions. Revealing of the factors affect to a flux of methane to atmosphere of the Arctic region. The estimation of influence of organic matter production to rates of methane generation and oxidation. Participation in complex project researches in the seas of Arctic regions.
Description of scientific expertise offered	The applicant of the project together with scientists of laboratory of microbiology and biogeochemistry of water reservoirs Institute of microbiology of the Russian Academy of Sciences has an operational experience in Norwegian, Barents, Kara and Chukchi seas (1993 - 2010 years). Results of researches are published in scientific journals.
Description of technical expertise offered	The scientists of INMI RAS have abundant experience in the Russian American program on research of changes of a climate ("RUSALCA" program (The Joint Russian-American Long-term Census of the Arctic). Researches cover water area of Chukchi Sea and Bering Strait. Similar researches can be spent at Laptev Sea by the Russian and European scientists.
Description of requested partner scientific expertise	
Description of requested partner technical expertise	
Potential partners (name, organisation, address …)	Prof. Tina Treude, Leader of Group “Marine Geobiology”. IFM-GEOMAR, Kiel, Germany, ttreude@ifm-geomar.de Dr. Ingeborg Bussmann Alfred Wegener Institut Meeresstation Helgoland Geb. C Germany Tel. 04725-819-3230 Fax 04725- 819-3283 e-mail: ingeborg.bussmann@awi.de Dr. V. Bruchert, Dep. Of Geology and Geochemistry, Stockholm, Sweden

Dr Andrey Shmakin

PARTICIPANT			
Gender	☐ Mr	☐ Ms	Title Dr.
First name	Andrey		
Last name	Shmakin		
Position	Head of Laboratory of Climatology, Head of Russian NCP "Environment and climate change"		

ORGANISATION DETAILS				
Organisation name	Institute of Geography, Russian Academy of Sciences			
Street *	Staromonetny 29			
ZIP * 119017	City * Moscow		Country * Russia	
Phone * (7-495)959-0032		Fax (7-495)959-0033		
Email * info@igras.ru, ashmakin@igras.ru		Web http://igras.ru/		
Employees	☐ 1-10	☐ 11 - 50	☐ 51 - 250	☐ 250 +
Organisation type	☐ Higher Education Institution	X Research Institution	☐ Industry	☐ SME ☐ other
Department	Laboratory of Climatology			
Short description of your company or organization	The Laboratory of Climatology of the Institute of Geography carries out diagnostic analysis of modern changes in climate and snow cover, and their impacts on environment and human life. Research methods include numerical modeling, advanced statistics, etc. Research themes include: regional climate change in Russia and extreme climatic events now and during the last millennium; reaction of snow cover and vegetation to climate change, numerical modeling of interaction between landscapes and the atmosphere.			

TOPICS OF INTEREST REGARDING THE CALL IN "COLLABORATIVE S&T PROJECTS"
Sub-topic of exercise
1. Innovative materials and cutting edge technological processes ultrahigh-power laser sources ☐ intelligent materials and nanomaterials ☐ quantum optics ☐ **2. Environmental research and climatic change** biodiversity and ecophysiology of natural ecosystems ☐ climate change in the artic and subartic regions X Material sciences connected with energy convergion and storage ☐ **3. Research on serious human health problems** viral infections: HIV and Hepatitis ☐

auto-immune diseases ☐ neurodegenerative diseases ☐ **4. Contemporary socio-economic studies** Social security systems and welfare state (in the context of globalization) ☐ Labour, labour market, and employment ☐ Transformation of the educational system ☐
Areas of activity *(Free keywords)*

PROJECT IDEA(S)	
Short description of project	It is planned to study the snow cover and permafrost changes in the Russian North under the contemporary and future climate change. The study will include analysis of regional climate change (mean and extreme variations), and local modeling of the snow-soil-vegetation system.
Description of scientific expertise offered	The team is experienced in advanced statistical analysis of the atmospheric processes (circulation mechanisms, frequency of snowfalls/thaws) and local numerical modeling of heat/water exchange on land, including water freezing/melting, snow transformations, etc.
Description of technical expertise offered	
Description of requested partner scientific expertise	We need partners experienced in downscaling of large-scale future climate projections, including sea ice characteristics, frequency of meteorological extremes, and scenarios for future migration of vegetation zones.
Description of requested partner technical expertise	
Potential partners (name, organisation, address …)	Hadley Centre for Climate Prediction and Research (the UK Met Office) Laboratoire de Météorologie Dynamique du C.N.R.S. (France) Max Planck Institute for Meteorology (Hamburg, Germany)

Dr Olga Solomina

PARTICIPANT			
Gender	☐ Mr	☐ Ms	Title Dr.
First name	Olga		
Last name	Solomina		
Position	Deputy Director		

ORGANISATION DETAILS				
Organisation name	Institute of Geography Russian Academy of Sciences			
Street *	Staromonetny, 29			
ZIP * 119017	City * Moscow		Country * Russia	
Phone * +7 499 125-90-11		Fax +7 495 959-00-33		
Email * olgasolomina@yandex.ru		Web www.paleoglaciology.org		
Employees	☐ 1-10	☐ 11 - 50	☐ 51 - 250	☐ 250 +
Organisation type	☐ Higher Education Institution	☒ Research Institution	☐ Industry	☐ SME ☐ other
Department	Glaciology			
Short description of your company or organization	The Institute of Geogpahy Russian Academy of Sciences (IGRAS) was established in 1918. It comprises 15 departments, including physical ans social geography, paleogeography, glaciology, soil science, biogeopgraphy, cartography, climatology, hydrology etc. Several laboratories (tree-ring, pollen, 14C and electronic miroscopy) are functioning within IGRAS. IGRAS provides oportunities for PhD programms in fields listed above.			

TOPICS OF INTEREST REGARDING THE CALL IN "COLLABORATIVE S&T PROJECTS"
Sub-topic of exercise
1. Innovative materials and cutting edge technological processes ultrahigh-power laser sources ☐ intelligent materials and nanomaterials ☐ quantum optics ☐ **2. Environmental research and climatic change** biodiversity and ecophysiology of natural ecosystems ☐ climate change in the artic and subartic regions ☒ Material sciences connected with energy convergion and storage ☐ **3. Research on serious human health problems** viral infections: HIV and Hepatitis ☐ auto-immune diseases ☐

neurodegenerative diseases ☐ **4. Contemporary socio-economic studies** Social security systems and welfare state (in the context of globalization) ☐ Labour, labour market, and employment ☐ Transformation of the educational system ☐	
Areas of activity *(Free keywords)*	multi-proxy climate reconstructions, tree-ring analysis, densitometry and stable isotopes, moraine dating, lake sediments

PROJECT IDEA(S)	
Short description of project	To cope with the consequences of man-induced recent climatic warming demands reliable information regarding the natural climate variability, response of landscape, vegetation and ecosystems to climatic changes and its influences on the quality of human habitat is essential. It is necessary not only to obtain appropriate data sets from carefully selected key regions, but also to analyze these with modern methods. Climate history of the last c. 1000 years enables us to consider the man-induced changes in landscape during the last 150 years (Recent Global Warming) on the background of the Late Holocene natural climatic trends, particularly the "Medieval Climate Anomaly" (IX-XII centuries). In this project we will focus on the multi-proxy reconstructions in the tree key areas in the Northern European Russia: Kola peninsula, Solovetsky Archipelago, and Vologodsky region. We are going to use the multi-proxy approach to reconstruct the past climate variations and forest ecosystems dynamics sampling and analyzing living trees and sub-fossil wood (ring width, density and stable isotopes), as well as the lake sediments and glacial moraines in the Khibiny Mountains (14C, 10Be, lichenometry). The advantage of this multi-proxy approach consists in the opportunity to reconstruct different climatic parameters, forcing varies proxies in different ways and cross-check the reliability of individual reconstructions as soon as all these proxies are independent sources of paleoclimatic information. Using this approach we will be able to assess the high to low frequency climatic variability and to provide high resolution reliable regional climate reconstructions for the two subarctic and one taiga regions in the North of the European Russia underrepresented in the current network. The results of the project will be useful for the improvement of existing network of global climatic reconstructions and for further climate modeling experiments. They will provide us as well with means to assess anticipated dynamics of forest ecosystems under different climatic scenarios.
Description of scientific expertise offered	Our scientific expertise focuses on tree-ring dating of natural and historical events, tree-ring based paleoclimatic reconstructions, dating of moraines and reconstructions of glacier variations in the past. Recently we have included in our activity the study of lake sediments stratigraphy in order to obtain the climatic signal from these records as well (www.paleoglaciology.org).
Description of technical expertise offered	We can process tree-rings width and optical density measurements, cross-date samples and build chronologies. We have experts in pollen, diatoms, macro-fossils and radiocarbon analyses. We also have equipment and experts in lake sediment coring (Nesje' type borer), pollen and macrofossil analyses and GIS technologies.
Description of requested partner scientific expertise	For the success of this project we require partners with the scientific expertise in stable isotope analysis, cosmogenic isotope dating, the experts in lake sediments analyses, and those in the regional climate modeling.
Description of	The technical expertise lacking is stable isotopes in tree-rings, cosmogenic isotope dating, lake sediments geochemistry.

requested partner technical expertise	
Potential partners (name, organisation, address …)	Dr. Tatjana Boettger UFZ, Helmholtz Centre for Environmental Research–UFZ, Department of Isotope Hydrology, Theodor-Lieser-Strasse 4, D-06120 Halle, Germany. phone +49 3345 5585 227 / fax +49 3345 5585 449 tatjana.boettger@ufz.de Dr. Michael Friedrich Institute of Botany (210), Hohenheim University, Garbenstrasse 30, D-70593 Stuttgart, Germany Tel. +49 (0)711 459-22196, Fax +49 (0)711 459-23355 Michael.Friedrich@uni-hohenheim.de Dr. Jomelli Vincent Laboratoire de Geographie Physique, CNRS, UMR 8591 1 place A. Briand 92195 Meudon, France Tel. 33 1 45 07 55 81, 33 4 67 83 95 41 jomelli@cnrs-bellevue.fr Dr. Ivan Kalugin and Dr. Andrey Darin Institute of geology and mineralogy RAS Kaptiuga, 3, 630090, Novosibirsk, Russsia Tel.: +7 (383) 333-26-00 Fax: +7 (383) 333-27-92 ikalugin@uiggm.nsc.ru, avd@uiggm.nsc.ru

Dr Alexey Trofimov

PARTICIPANT			
Gender	☐ Mr	☐ Ms	Title Dr.
First name	Alexey		
Last name	Trofimov		
Position	Head of the Research Laboratory for Photo- and Chemiluminescence		

ORGANISATION DETAILS				
Organisation name	Emanuel Institute of Biochemical Physics, Russian Academy of Sciences			
Street *	ul. Kosygina, 4 processes			
ZIP * 119334	City * Moscow		Country * Russia	
Phone * +7 (495) 9397358	+7 916 196-47-04 mob		Fax +7 (499) 1374101	
Email * avt_2003@mail.ru			Web	
Employees	☐ 1-10	☐ 11 - 50	☐ 51 - 250	☐ 250 +
Organisation type	☐ Higher Education Institution	☒ Research Institution	☐ Industry	☐ SME ☐ other
Department	Photochemistry and Photobiology			
Short description of your company or organization	Studying the physical and chemical fundamentals of biological and environmental processes, energy conversion and storage			

TOPICS OF INTEREST REGARDING THE CALL IN "COLLABORATIVE S&T PROJECTS"
Sub-topic of exercise
1. Innovative materials and cutting edge technological processes ultrahigh-power laser sources ☐ intelligent materials and nanomaterials ☐ quantum optics ☐ **2. Environmental research and cl** **matic change** biodiversity and ecophysiology of natural ecosystems ☐ climate change in the artic and subartic regions ☐ Material sciences connected with energy convergion and storage ☒ **3. Research on serious human health problems** viral infections: HIV and Hepatitis ☐ auto-immune diseases ☐

neurodegenerative diseases ☐ **4. Contemporary socio-economic studies** Social security systems and welfare state (in the context of globalization) ☐ Labour, labour market, and employment ☐ Transformation of the educational system ☐
Areas of activity *(Free keywords)* Physical organic chemistry, photochemistry, chemiluminescence, bioantioxidants;

PROJECT IDEA(S)	
Short description of project	Conversion of chemical energy into light: Formation of "light depositories" in natural and synthetic materials
Description of scientific expertise offered	Chemistry of high-energy intermediates in organic processes;
Description of technical expertise offered	Developing the chemi- and bioluminescent approaches;
Description of requested partner scientific expertise	Organic chemistry; natural product chemistry;
Description of requested partner technical expertise	Methods of organic synthesis; preparative methods in natural product chemistry;
Potential partners (name, organisation, address …)	Miscellaneous

Prof. Peter Zavialov

PARTICIPANT			
Gender Male	☐ Mr	☐ Ms	Title Prof.
First name	Peter		
Last name	Zavialov		
Position	Deputy Director		

ORGANISATION DETAILS				
Organisation name	**P.P.Shirshov Institute of Oceanology**			
Street *	**36, Nakhimovsky Prospect Ave.**			
ZIP * **117997**	City * **Moscow**		Country * **Russia**	
Phone * **(7-499)-124-5994**		Fax **(7-499)-124-5983**		
Email * **peter@ocean.ru**		Web **www.ocean.ru**		
Employees	☐ 1-10	☐ 11 - 50	☐ 51 - 250	☐ 250 +
Organisation type	☐ Higher Education Institution	☒ Research Institution	☐ Industry	☐ SME ☐ other
Department	Physical Oceanography			
Short description of your company or organization	The largest Russian institute in the field of oceanography focused on interdisciplinary research of the ocean and the inland seas			

TOPICS OF INTEREST REGARDING THE CALL IN "COLLABORATIVE S&T PROJECTS"
Sub-topic of exercise
1. Innovative materials and cutting edge technological processes ultrahigh-power laser sources ☐ intelligent materials and nanomaterials ☐ quantum optics ☐ **2. Environmental research and climatic change** biodiversity and ecophysiology of natural ecosystems ☒ climate change in the artic and subartic regions ☒ Material sciences connected with energy convergion and storage ☐ **3. Research on serious human health problems** viral infections: HIV and Hepatitis ☐

auto-immune diseases ☐ neurodegenerative diseases ☐ **4. Contemporary socio-economic studies** Social security systems and welfare state (in the context of globalization) ☐ Labour, labour market, and employment ☐ Transformation of the educational system ☐
Areas of activity *(Free keywords)* Oceanography, Marine ecosystems, Climate change, Anthropogenic impacts, Continental discharges

PROJECT IDEA(S)	
Short description of project	An interdisciplinary study of impacts of climate change and anthropogenic pressures on marine ecosystems based on historical and recent in situ data and modeling. Emphasis will be made on the seas of Russia, especially in the Arctic, and the regions of freshwater influence exposed to river discharges
Description of scientific expertise offered	The Institute has a longstanding experience of physical, biological, and other relevant oceanographic research of the seas washing Russia, as well as the World ocean. We have in possession vast data bases on the Russian seas.
Description of technical expertise offered	The Institute operates a fleet of several research vessels equipped with state-of-the-art instruments for oceanographic research. A few teams of the Institute have been involved in collaborative international projects, including at least 3 projects within EU FP7.
Description of requested partner scientific expertise	We are open for a joint effort with any Partner institution whose research interests are relevant to the scope described above.
Description of requested partner technical expertise	- " -
Potential partners (name, organisation, address …)	Alfred Wegener Institute for Polar and Marine Research, Bremerhaven, Germany. Geoforschung Zentrum, Potsdam, Germany. University of Girona, Spain. Brunnel University,London, UK.

Spain

Dr. Felix Javier Barrio de Migue

PARTICIPANT			
Gender	x Mr	☐ Ms	Title Dr
First name	Felix Javier		
Last name	Barrio de Miguel		
Position	Head of the International relations and Cooperation		

ORGANISATION DETAILS				
Organisation name	CIEMAT (Center for Energy, Environment and Technology Research)			
Street *	Avenida Complutense 22 ,			
ZIP * 28040	City * Madrid		Country * Spain	
Phone * +34 913466004		Fax +34 91 3466082		
Email * felix.barrio@ciemat.es		Web www.ciemat.es		
Employees	☐ 1-10	☐ 11 - 50	☐ 51 - 250	x ☐ 250 +
Organisation type	☐ Higher Education Institution	☒ Research Institution	☐ Industry	☐ SME ☐ other
Department	International Relations And Cooperation			
Short description of your company or organization	CIEMAT is a Spanish public Research Centre, attached to the Ministry of Science and Innovation. The areas of research cover Energy, Environmental matters, several fields of technological development and some fields of Basic Science research. Especially significant is the role in basic and technological research in renewable energies, with emphasis to the broad exploitation of Concentration Solar Power, where we have one of the most significant installations all over the world, The Solar Platform of Almería.			

TOPICS OF INTEREST REGARDING THE CALL IN "COLLABORATIVE S&T PROJECTS"
Sub-topic of exercise
1. Innovative materials and cutting edge technological processes ultrahigh-power laser sources ☐ intelligent materials and nanomaterials ☐ quantum optics ☐ **2. Environmental research and climatic change** biodiversity and ecophysiology of natural ecosystems ☐ climate change in the artic and subartic regions ☐ Material sciences connected with energy convergion and storage ☒

3. Research on serious human health problems viral infections: HIV and Hepatitis ☐ auto-immune diseases ☐ neurodegenerative diseases ☐ **4. Contemporary socio-economic studies** Social security systems and welfare state (in the context of globalization) ☐ Labour, labour market, and employment ☐ Transformation of the educational system ☐
Areas of activity *(Free keywords)* Energy and materials

PROJECT IDEA(S)	
Short description of project	Development of cost effective thermal storage systems for CSP. The motivation is basically to reduce the high costs in existing systems. Analysis of the different CSP technologies and definition of their specific requirements concerning thermal storage (temperatures, pressures, sensible or latent heat,…). Development of improved thermal storage systems
Description of scientific expertise offered	Ciemat has an important group (more than 100) of scientist working in different aspects of the Concentrated Solar Power systems including the thermal storage.
Description of technical expertise offered	Ciemat has one of the best installations in the world for that studies, the solar platform of Almería. A facility with more than 150 workers where all technologies related to this issue are presented.
Description of requested partner scientific expertise	Knowledge in of different thermochemical reactions to be used in thermochemical storage systems. Knowledge for the Development of reactor concepts and designs
Description of requested partner technical expertise	Development of reactor concepts and designs Study and definition of optimum operation of the whole plant to optimize the integration into the grid and the electricity production, taking into consideration a possible hybridization with biomass.
Potential partners (name, organisation, address …)	UPC (Spain), CIEMAT (Spain), TECNALIA (Spain)

Prof. Dr. Umit Erdem

PARTICIPANT			
Gender	X ☐ Mr	☐ Ms	Title Prof. Dr.
First name	Umit		
Last name	ERDEM		
Position	Director of Ege University Centre For Environmental Studies		

ORGANISATION DETAILS				
Organisation name	Ege University			
Street *	Ege University Campus			
ZIP * 35100	City * Izmir		Country * Bornova	
Phone * + 90 2323112975 - + 90 5323372054		Fax +90 232 3885952		
Email * umit.erdem@ege.edu.tr		Web http://www.cevremerkezi.ege.edu.tr/		
Employees	☐ 1-10	☐ 11 - 50	☐ 51 - 250	X ☐ 250 +
Organisation type	☒ Higher Education Institution	☒ Research Institution	☐ Industry	☐ SME ☐ other
Department	Centre For Environmental Studies			
Short description of your company or organization	Ege University Center for Environmental Studies was established according to the decision (dated Jan 23, 1990 and registered as 1/7) made by Ege University Senate and approval (dated Nov 30, 1990) of the Council of Higher Education. Directive of our center published in the Official Journal and entered into force on Dec 20, 1990 (Article no: 20731). While the Center continued applied studies confronting environmental problems, education and training were taken into consideration. Therefore application related to the establishment of Environmental Sciences Division was made. Therefore following the application the Council of Higher Education (YOK) directors council assessed the application and decided to establish the ENVIRONMENTAL SCIENCES Division within the organization of Ege University Institute of Natural and Applied Sciences according to the directive covering higher education, training, their administration and operation on Feb 25, 1994. Since then the Center has been giving higher education on multidisciplinary basis. Amongst the various tasks of Centre are; □ To carry out scientific researches towards implication, to develop techniques for solving related problems, □ To prepare master plans and projects for environmental problems of both state and private sectors as facilities or have them prepared and act as consultant for land use decisions, □ To carry out supplementary works, to establish standards, to prepare scientific reports, □ To serve as technical consultant on subjects like, technology transfers and feasibility reports, □ To support and contribute studies being carried out at different departments the university aiming to solve environmental problems. □ To support studies educating and training future scholars of environmental sciences and to establish circumstances to have this available, □ To carry on cooperative a studies and to share knowledge with related institutions and centers in and abroad,			

	□ To support studies on environmental studies publishing, accelerating, share knowledge, informing the public and to do this, establishing educational programs, organizing seminars, courses, conferences, publications and certificating the attendants, □ To give education and training, to organize exchanges of scholars within related fields both from abroad and to.

TOPICS OF INTEREST REGARDING THE CALL IN "COLLABORATIVE S&T PROJECTS"
Sub-topic of exercise
1. Innovative materials and cutting edge technological processes ultrahigh-power laser sources ☐ intelligent materials and nanomaterials ☐ quantum optics ☐ **2. Environmental research and climatic change** biodiversity and ecophysiology of natural ecosystems ☒ climate change in the artic and subartic regions ☐ Material sciences connected with energy convergion and storage ☐ **3. Research on serious human health problems** viral infections: HIV and Hepatitis ☐ auto-immune diseases ☐ neurodegenerative diseases ☐ **4. Contemporary socio-economic studies** Social security systems and welfare state (in the context of globalization) ☐ Labour, labour market, and employment ☐ Transformation of the educational system ☐
Areas of activity *(Free keywords)*

PROJECT IDEA(S)	
Short description of project	**Proposed Project Title** Interactions of Tourism, Agriculture and Biodiversity Within the Coastal Zone Management **Summary** Favorable biophysical and climatic conditions, together with the ease of communication and navigation frequently offered by coastal sites, have attracted human activities in coastal areas since prehistoric times. Presently about 40% of the world's population lives within 100 kilometers of the coasts. As population density and economic activity in the coastal zone increases, pressures on coastal ecosystems increase. Land use /land cover changes can be showed one of the most important pressures on coastal ecosystems and this pressure can lead to loss of biodiversity. Main objectives of the study are; • To determine land-cover transition rates and location because of tourism and agriculture

	• To determine affects on and interactions these land use and cover changes with biodiversity. • To project alternative future interactions.
Description of scientific expertise offered	**RESEARCH PROJECTS CARRIED BY EGE UNIVERSITY CENTRE FOR ENVIRONMENTAL STUDIES** "AIR QUALITY AND URBAN DEVELOPMENT IN IZMIR-BORNOVA Duration: 1996-1999 Financial Source: Volkswagen Foundation Scientific Coordinator: H. G. BARTH Partners: Hannover University & Stuttgart University & Dokuz Eylul University & Ege University "IMPROVEMENT OF URBAN HABITAT: URBAN FORESTRY/GREENING MASTER PLAN FOR KARSIYAKA MUNICIPALITY, IZMIR-MASTER PLAN AND STRATEGY" Project No:TUR/97/008/A/01/12 Duration: 1999-2001 Financial Source: UNDP-Republic of Turkey Government Project Partners: Karsıyaka Municipality & Ege University "AGRICULTURE AND URBANIZATION IN THE MEDITERRANEAN REGION: ENABLING POLICIES FOR SUSTAINABLE USE OF SOIL AND WATER" Financial Source: European Commission INCO-DC (Dg XII) Scientific Coordinator: Dino BORRI, Contractor: CIHEAM-IAMB Partners: Polytechnic of Bari & Ege University for 2nd International Meeting, 2001. "PLANT COVER S AND LAND DEGRADATION RELATIONSHIP ON AEGEAN COASTAL ZONE" Duration: 2001-2003 Financial Source: CIHEAM-MAICh Partners: CIHEAM-MAICh & Ege University & Aristotle University,(continued.) “MICROORGANISMS, PATHOGENS AND SUGGESTED STANDARDS IN VARIOUS WATERS” Duration: 1997-1999 Financial Source: Ege University Research Fund “SEARCHES FOR Yersinia enterocolitica and Aeromonas hydrophila IN PART OF IZMIR TOP WATER DISTRIBUTION NETWORK FED BY SOUTHERN SPRINGS” Duration: 1998-2001 Financial Source: Ege University Research Fund “THE EXAMINATION OF THE EFFECT OF SEVERAL POLYMERS ON MECHANICAL DEWATERING OF ATATÜRK INDUSTRIAL AREA□S WASTEWATER TREATMENT SLUDGES AND FILTER DESIGN” Duration: 2000-2001 Financial Source: Ege University Research Fund “RESEARCHES ON ENVIRONMENTAL CHANGES IN THE CASE STUDY AREA OF EGLENHOCA VILLAGE, OVACIK QUARTER IN KARABURUN PENINSULA” Duration: 2000-2002

	Financial Source: Ege University Research Fund “EFFECTS OF SEA TRAFFIC ON KUŞADASI COASTAL ECOSYSTEM” Duration: 2001-2004 Financial Source: Ege University Research Fund “INVESTIGATION ON IMPACTS OF COASTAL CAGE AQUACULTURE TO AQUATIC ENVIRONMENTAL IN SIĞACIK (SEFERIHISAR-IZMIR) REGION”, Duration: 2002-2004 Financial Source: Ege University Research Fund “INVESTIGATION OF RADIOSEZIUM LEVELS IN COASTAL AND AGRICULTURAL AREAS IN AEGEAN REGION” Duration: 2002-2005 Financial Source: Ege University Research Fund “OCEANOGRAPHIC RESEARCH AT ÇEŞME FISHERMAN□S REFUGE AND ITS IMMEDIATE SURROUNDINGS” Duration: 2002-2006 Financial Source: Ege University Research Fund “LAND USE DECISIONS WITHIN TOURISM AND RELATION BETWEEN TOURISM POTENTIAL AND COASTAL ECOSYSTEM ON ÇEŞME PENINSULA” Duration: 2002-2006 Financial Source: Ege University Research Fund “THE STUDY OF PRODUCTION OF ACTIVATED CARBONS FROM THE SOLID WASTES GENERATED BY LEATHER INDUSTRY” Duration: 2003-2005 Financial Source: Ege University Research Fund “RESEARCH OF ANIONIC DETERGENT LEVELS IN IZMIR BAY” Duration: 2004-2006 Financial Source: Ege University Research Fund "POTENTIAL OF VEGETABLE FRUIT WASTES OF MARKETS IN BORNOVA DISTRICT OF IZMIR PROVINCE AS ANIMAL FEED" Duration: 2007-2008 Financial Source: Ege University Research Fund ""UTILIZATION OF PRODUCTS OBTAINED FROM COPYROLOSIS OF OIL SHALE AND PLASTIC” Duration: 2008-2009 Financial Source: Ege University Research Fund
Description of technical expertise offered	**LABORATORY FACILITIES OF EGE UNIVERSITY CENTRE FOR ENVIRONMENTAL STUDIES** Within our body there are determiners and analysers for air (dissolved oxygen meter, pH/ISE meter, conductivity TDS meter, SO2 analyser, etc.) water (B.O.D tools, BOD incubator, etc.) and noise pollutions (noise determiner). In environmental planning, GIS (Geographical Information Systems), remote sensing and

	modelling of land use/land cover changes softwares are being used. In our computer lab which is being expanded by international projects, Geo Media Professional 5.1, Image Analyst, Arc Info 9.3.1, are being used for analysing works.
Description of requested partner scientific expertise	
Description of requested partner technical expertise	
Potential partners (name, organisation, address …)	

This event is funded by the Seventh Framework Programme, European Commission

ERA.Net RUS

SEVENTH FRAMEWORK PROGRAMME

28 February 2011, Ekaterinburg, Brokerage Event
ERA.Net-RUS Pilot Joint Call
For Collaborative S&T Projects

PROFILE FORM

PARTICIPANT			
Gender	☐ Mr	☐ Ms	Title Mr.
First name	Andrey		
Last name	Aksenov		
Position	Head of the Laboratory of Chemistry of Plant Biopolymers		

ORGANISATION DETAILS				
Organisation name	Institute of Ecological Problems of the North of the Ural Branch of Russian Academy of Sciences			
Street *	Severnoy Dvinu Emb., 23			
ZIP * 163000	City * Arkhangelsk		Country * Russia	
Phone * +7(8182)287688		Fax +7(8182)287636		
Email * biopolimer@iepn.ru		Web www.iepn.ru		
Employees	☐ 1-10	☐ 11 - 50	☑ 51 - 250	☐ 250 +
Organisation type	☐ Higher Education Institution	■ Research Institution	☐ Industry	☐ SME ☐ other
Department	Laboratory of Chemistry of Plant Biopolymers			
Short description of your company or organization	Research areas: - Integral assessment of environmental problems of the Northwest of Russia and neighboring Arctic water basins - Scientific basis for the development and rational use of mineral resources and biologically renewable natural resources - Deep structure, geodynamics, seismicity and mineralogy of the Earth's Northern territories			

TOPICS OF INTEREST REGARDING THE CALL IN "COLLABORATIVE S&T PROJECTS"
Sub-topic of exercise
1. Innovative materials and cutting edge technological processes ultrahigh-power laser sources ☐ intelligent materials and nanomaterials ☐ quantum optics ☐ **2. Environmental research and climatic change**

This event is funded by the Seventh Framework Programme, European Commission

biodiversity and ecophysiology of natural ecosystems ■
climate change in the artic and subartic regions ■
Material sciences connected with energy convergion and storage ■

3. Research on serious human health problems
viral infections: HIV and Hepatitis ☐
auto-immune diseases ☐
neurodegenerative diseases ☐

4. Contemporary socio-economic studies
Social security systems and welfare state (in the context of globalization) ☐
Labour, labour market, and employment ☐
Transformation of the educational system ☐

Areas of activity *(Free keywords)*	Biopolymers, biosensors, complex wood treatment, biotechnology, enzymology, hydrochemistry

PROJECT IDEA(S)	
Short description of project	Title: ARCTIC ECOSYSTEM'S BIODIVERSITY AND GLOBAL CLIMATE CHANGE: MARGIN WAYS OF BIOSPHERE'S DEVELOPMENT UNDER THE DISTURBANCE OF PLANETARY HEAT AND MOISTURE BALANCE Description:. The aim of the Project is to study the influence of Global climate change towards the present state and history of development of Arctic biota under different ways of disturbance of heat and moisture balance. Historically acting under different thermal conditions, zonal and altitudinal ecosystems, as well as ecosystems of geothermal fields should be compared. Complex assessment of biodiversity of ecosystems (by the example of number of groups of land and water animals and plants) is planned. Main environmental factors are to be studied: microclimate, structure of underlying rocks, plants, biogeochemical processes. Paleozoological (mollusks shells, arthropods' remains), paleobotanical (pollen, fruits, remains and prints of leaves and branches), sklerochronological (mollusk shells), dendrochronological (wood) and other approaches will be used in order to study history of development of Arctic biota of different ecosystems during Pleistocene-Holocene Ages. Studies on the age of layers will be performed by isotopic analysis (stable U and C isotopes). Based on the data mentioned above, models of historical evolving of different ecosystems under different climate conditions will be developed. Forecast of influence of climate change towards local communities and natural management for several simulated ways of disturbance of heat and moisture balance will be made.
Description of scientific expertise offered	Research group consisting of biologists, environmental engineers, chemists, geographers, hydrogeologists (including 4 Doctors of Sciences, 7 Candidates of Sciences, 9 PhD students) is ready to take part in the Project's implementation. The group gained huge experience on implementation of research expeditions and field studies within Arctic region, as well as within other regions (Fennoscandia, Ural, Baikal, Caucasus, Amazon and Orinoko rivers' water basins). The group published 5 monographs and more than 30 articles within the framework of the Project's idea.
Description of technical expertise offered	Georadar SIR System 3000, equiped by Subeho and GSSI antennas, microscopes Leica and Karl Zeiss (Germany), drone aircraft CropCam, equipped by MicroPilot system, Atomic-absorbtion spectrometer novAA-315 (Analytik Jena AG, Germany), Scanning spectrophotometer UV-VIS-1800 (Shimadzu, Japan), IR-interference spectrometer IRAFFINITY-1 (Shimadzu, Japan), Analizator of particles' size HORIBA LB 550 (Japan), equipment for development and safe work of field camps under Arctic conditions (living quartrs, power generators, vehicles, boats, motors), etc..

This event is funded by the Seventh Framework Programme, European Commission

ERA.Net RUS

Description of requested partner scientific expertise	Partners should have an experience in field studies under Arctic and sub-Arctic environment. There is a need in genetic research (studies on genetic distances between the populations of species of Arctic biota, including inhabitants of geothermal fields), isotopic analysis (radioisotope dating of samples from natural deposits – bottom sediments, travertines, peat, etc.)
Description of requested partner technical expertise	Partners should have equipment for: 1. genetic analysis of DNA of Arctic spices (mollusks, insects); 2. samples' radiocarbon dating (C14).
PARTNERS	
Partners' names, organizations and addresses	

This event is funded by the Seventh Framework Programme, European Commission

ERA.Net RUS

SEVENTH FRAMEWORK PROGRAMME

28 February 2011, Ekaterinburg, Brokerage Event
ERA.Net-RUS Pilot Joint Call
For Collaborative S&T Projects

PROFILE FORM

PARTICIPANT			
Gender	☐ Mr		Title **PhD**
First name	**Andreev**		
Last name	**Oleg**		
Position	**composite electrolytes group leader**		

ORGANISATION DETAILS				
Organisation name: **Institute of High Temperature Electrochemistry**				
Street * : **S.Kovalevskoy ul., 22**				
ZIP * **620219**	City * **Yekaterinburg**		Country * **Russia**	
Phone * **(343) 362-31- 81**		Fax **(343) 374-59-92**		
Email * **e-mail: aol33@rambler.ru**		Web **http://www.ihte.uran.ru /**		
Employees			☐ 51 - 250	
Organisation type	☐ Higher Education Institution	■ Research Institution	☐ Industry	☐ SME ☐ other
Department	**Ural Branch of the Russian Academy of Sciences**			
Short description of your company or organization	**High-temperature physical chemistry and electrochemistry of molten salts and solid electrolytes are the basic scientific direction of the Institute of High-Temperature Electrochemistry. The subjects of researches cover the synthesis of ionic and electronic conductors, the thermodynamic, electrical, optical, diffraction and other properties of the electrolytes, electrode materials and interface between them, the kinetics of the electrode reactions as well as the theory of the high-temperature electrochemical phenomena. One of the most important directions of Institute activity is the development of electrochemical devices including power sources.**			

TOPICS OF INTEREST REGARDING THE CALL IN "COLLABORATIVE S&T PROJECTS"	
Sub-topic of exercise	all solid state batteries, composite electrolytes
1. Innovative materials and cutting edge technological processes ultrahigh-power laser sources ☐ intelligent materials and nanomaterials ☐ quantum optics ☐	

This event is funded by the Seventh Framework Programme, European Commission

ERA.Net RUS

2. Environmental research and climatic change biodiversity and ecophysiology of natural ecosystems ☐ climate change in the artic and subartic regions ☐ Material sciences connected with energy convergion and storage ☒ **3. Research on serious human health problems** viral infections: HIV and Hepatitis ☐ auto-immune diseases ☐ neurodegenerative diseases ☐ **4. Contemporary socio-economic studies** Social security systems and welfare state (in the context of globalization) ☐ Labour, labour market, and employment ☐ Transformation of the educational system ☐
Areas of activity *(Free keywords)*

PROJECT IDEA(S)	
Short description of project	Modern lithium ion batteries have certain drawbacks. One of the most important is low safety due to the employment of flammable liquid organic electrolyte. This drawback may be overcome completely with a solvent-free all-solid-state rechargeable lithium-ion battery. The application of solid electrolytes with single-ion lithium conductivity results in a significant improvement of the battery safety, extension of lifetime due to the suppression of the degradation processes, and an improvement of the electrical storage properties. Thin and strong films must be obtained in order to be used as lithium conductive membranes. We propose to explore three approaches to reach this goal: 1) glass-ceramics lithium elecctrolytes 2) composite polymer electrolytes 3) ceramic electrolytes.
Description of scientific expertise offered	In the way of the project running there were 14 articles published and 5 reports presented for different conferences in Russia.
Description of technical expertise offered	Materials synthesis, glass defitrification, scanning electron microscopy, diffractometry, AC and DC transport properties measurements, molecular dynamics, DSC
Description of requested partner scientific expertise	Reserchers in the fields of power sources, electrode materials, materials structure, positron annihilation, glass devitrification
Description of requested partner technical expertise	Thin-layer technology, batteries design, atom-force microscopy

PARTNERS	
Partners' names, organizations and addresses	

This event is funded by the Seventh Framework Programme, European Commission

ERA.Net RUS

SEVENTH FRAMEWORK PROGRAMME

28 February 2011, Ekaterinburg, Brokerage Event
ERA.Net-RUS Pilot Joint Call
For Collaborative S&T Projects

PROFILE FORM

PARTICIPANT			
Gender	☐ Mr	☐ Ms	Title Candidate of technical sciences
First name	Natalia		
Last name	Antoninova		
Position	Senior scientific worker		

ORGANISATION DETAILS				
Organisation name	The Institute of Mining			
Street *	Mamin-Sibiryak			
ZIP *		City * Ekaterinburg		Country * Russia
Phone * 8 (343)350-50-35			Fax 8(343)350-46-19	
Email * natal78@list.ru			Web	
Employees	☐ 1-10	☐ 11 - 50	☐ 51 - 250	☐ 250 +
Organisation type	☐ Higher Education Institution	☒ Research Institution	☐ Industry	☐ SME ☐ other
Department	Ecology laboratory of mining production			
Short description of your company or organization	At the present day, the Institute is able to solve the most difficult academic and applied problems in exploring and exploiting deep-seated deposits of mineral raw materials with difficult mining-and-geological bedding conditions. In the intervening years the Institute has: • worked out fundamentally new technologies and facilities of exploiting deep-seated deposits of mineral raw materials; • prepared scientific basis and methods of engineering new and reconstructing old operating mining enterprises; • worked out technologies and facilities of mined-land reclamation and normalization of open pit atmosphere; • created new means of diagnosing geodynamical activity of land using modern aerospace geodesy facilities and satellite navigation systems, aimed at enhancing security of compound industrial objects of subsurface resource management.			

TOPICS OF INTEREST REGARDING THE CALL IN "COLLABORATIVE S&T PROJECTS"

This event is funded by the Seventh Framework Programme, European Commission

ERA.Net RUS

Sub-topic of exercise
1. Innovative materials and cutting edge technological processes ultrahigh-power laser sources ☐ intelligent materials and nanomaterials ☐ quantum optics ☐ **2. Environmental research and climatic change** biodiversity and ecophysiology of natural ecosystems ☒ climate change in the artic and subartic regions ☐ Material sciences connected with energy convergion and storage ☐ **3. Research on serious human health problems** viral infections: HIV and Hepatitis ☐ auto-immune diseases ☐ neurodegenerative diseases ☐ **4. Contemporary socio-economic studies** Social security systems and welfare state (in the context of globalization) ☐ Labour, labour market, and employment ☐ Transformation of the educational system ☐
Areas of activity *(Free keywords)* restoration of the broken earths, technogenic deposits, zonalno-geographical features.

PROJECT IDEA(S)	
Short description of project	Currently, technological aspects of georesources, defining complex impact on the environment, causing the need for research into the characteristics of the effects of extraction and redistribution of natural resources to restore the area man-made landscapes The problem of restoring damaged lands solved individually, depending on many factors such as technical-technological, and natural. The variety of mineral reserves and zonal-geographical features of the region, located in several natural zones, differing in soil and vegetation, climate, geology, socio-economic conditions rule out the possibility of using common technological and biological methods of remediation after mastering georesources.
Description of scientific expertise offered	Various zonal-geographical features of the development of natural and man-made materials of the Urals from the zone of permafrost in the Arctic to the dry steppes of the southern borders in conjunction with the mining technology of extraction, including man-made materials, specifying the type of valuable components violations and the tendency of quantitative and qualitative increase, cause adjustment ways to recover man-made landscapes.
Description of technical expertise offered	Much of the waste disposal facilities (more than 95% of all waste disposal sites ferrous and nonferrous metallurgy) remain valid, exert maximum impact on the environment. One of the areas to reduce the negative impact of mining and metallurgical industries on the environment must be the restoration of damaged and degraded lands
Description of requested partner scientific expertise	

This event is funded by the Seventh Framework Programme, European Commission

Description of requested partner technical expertise	
PARTNERS	
Partners' names, organizations and addresses	Galina M. Chaikina, Lubov A. Shubina The Institute of Mining

This event is funded by the Seventh Framework Programme, European Commission

ERA.Net RUS

SEVENTH FRAMEWORK PROGRAMME

28 February 2011, Ekaterinburg, Brokerage Event
ERA.Net-RUS Pilot Joint Call
For Collaborative S&T Projects

PROFILE FORM

PARTICIPANT			
Gender	☐ Mr	☐ Ms	Title Mr.
First name	Ivan		
Last name	Bolotov		
Position	Vice-Director for Research Work		

ORGANISATION DETAILS				
Organisation name	Institute of Ecological Problems of the North of the Ural Branch of Russian Academy of Sciences			
Street *	Severnoy Dvinu Emb., 23			
ZIP * 163000	City * Arkhangelsk		Country * Russia	
Phone * +7(8182)287688		Fax +7(8182)287636		
Email * biopolimer@iepn.ru		Web www.iepn.ru		
Employees	☐ 1-10	☐ 11 - 50	☒ 51 - 250	☐ 250 +
Organisation type	☐ Higher Education Institution	■ Research Institution	☐ Industry	☐ SME ☐ other
Department	Laboratory of Chemistry of Plant Biopolymers			
Short description of your company or organization	Research areas: - Integral assessment of environmental problems of the Northwest of Russia and neighboring Arctic water basins - Scientific basis for the development and rational use of mineral resources and biologically renewable natural resources - Deep structure, geodynamics, seismicity and mineralogy of the Earth's Northern territories			

TOPICS OF INTEREST REGARDING THE CALL IN "COLLABORATIVE S&T PROJECTS"
Sub-topic of exercise
1. Innovative materials and cutting edge technological processes ultrahigh-power laser sources ☐ intelligent materials and nanomaterials ☐ quantum optics ☐ **2. Environmental research and climatic change**

biodiversity and ecophysiology of natural ecosystems ■ climate change in the artic and subartic regions ■ Material sciences connected with energy convergion and storage ☐ **3. Research on serious human health problems** viral infections: HIV and Hepatitis ☐ auto-immune diseases ☐ neurodegenerative diseases ☐ **4. Contemporary socio-economic studies** Social security systems and welfare state (in the context of globalization) ☐ Labour, labour market, and employment ☐ Transformation of the educational system ☐
Areas of activity *(Free keywords)* Biology, zoology, global climate change, Arctic ecosystems

PROJECT IDEA(S)	
Short description of project	Title: ARCTIC ECOSYSTEM'S BIODIVERSITY AND GLOBAL CLIMATE CHANGE: MARGIN WAYS OF BIOSPHERE'S DEVELOPMENT UNDER THE DISTURBANCE OF PLANETARY HEAT AND MOISTURE BALANCE Description:. The aim of the Project is to study the influence of Global climate change towards the present state and history of development of Arctic biota under different ways of disturbance of heat and moisture balance. Historically acting under different thermal conditions, zonal and altitudinal ecosystems, as well as ecosystems of geothermal fields should be compared. Complex assessment of biodiversity of ecosystems (by the example of number of groups of land and water animals and plants) is planned. Main environmental factors are to be studied: microclimate, structure of underlying rocks, plants, biogeochemical processes. Paleozoological (mollusks shells, arthropods' remains), paleobotanical (pollen, fruits, remains and prints of leaves and branches), sklerochronological (mollusk shells), dendrochronological (wood) and other approaches will be used in order to study history of development of Arctic biota of different ecosystems during Pleistocene-Holocene Ages. Studies on the age of layers will be performed by isotopic analysis (stable U and C isotopes). Based on the data mentioned above, models of historical evolving of different ecosystems under different climate conditions will be developed. Forecast of influence of climate change towards local communities and natural management for several simulated ways of disturbance of heat and moisture balance will be made.
Description of scientific expertise offered	Research group consisting of biologists, environmental engineers, chemists, geographers, hydrogeologists (including 4 Doctors of Sciences, 7 Candidates of Sciences, 9 PhD students) is ready to take part in the Project's implementation. The group gained huge experience on implementation of research expeditions and field studies within Arctic region, as well as within other regions (Fennoscandia, Ural, Baikal, Caucasus, Amazon and Orinoko rivers' water basins). The group published 5 monographs and more than 30 articles within the framework of the Project's idea.
Description of technical expertise offered	Georadar SIR System 3000, equiped by Subeho and GSSI antennas, microscopes Leica and Karl Zeiss (Germany), drone aircraft CropCam, equipped by MicroPilot system, Atomic-absorbtion spectrometer novAA-315 (Analytik Jena AG, Germany), Scanning spectrophotometer UV-VIS-1800 (Shimadzu, Japan), IR-interference spectrometer IRAFFINITY-1 (Shimadzu, Japan), Analizator of particles' size HORIBA LB 550 (Japan), equipment for development and safe work of field camps under Arctic conditions (living quartrs, power generators, vehicles, boats, motors), etc..

Description of requested partner scientific expertise	Partners should have an experience in field studies under Arctic and sub-Arctic environment. There is a need in genetic research (studies on genetic distances between the populations of species of Arctic biota, including inhabitants of geothermal fields), isotopic analysis (radioisotope dating of samples from natural deposits – bottom sediments, travertines, peat, etc.)
Description of requested partner technical expertise	Partners should have equipment for: 1. genetic analysis of DNA of Arctic spices (mollusks, insects); 2. samples' radiocarbon dating (C14).
PARTNERS	
Partners' names, organizations and addresses	

This event is funded by the Seventh Framework Programme, European Commission

ERA.Net RUS

SEVENTH FRAMEWORK PROGRAMME

28 February 2011, Ekaterinburg, Brokerage Event
ERA.Net-RUS Pilot Joint Call
For Collaborative S&T Projects

PROFILE FORM

PARTICIPANT			
Gender	☐ Ms		Title: **Professor, Doctor of Science**
First name	**Olga**		
Last name	**Bushkova**		
Position	**low-temperature lithium batteries group leader**		

ORGANISATION DETAILS			
Organisation name: **Institute of High Temperature Electrochemistry**			
Street * : **S.Kovalevskoy ul., 22**			
ZIP * **620219**	City * **Yekaterinburg**		Country * **Russia**
Phone * **(343) 362-33- 84**		Fax **(343) 374-59-92**	
Email * **ovbushkova@rambler.ru**		Web **http://www.ihte.uran.ru /**	
Employees		☐ 51 - 250	
Organisation type	☐ Higher Education Institution ■ Research Institution ☐ Industry ☐ SME ☐ other		
Department	**Ural Branch of the Russian Academy of Sciences**		
Short description of your company or organization	**High-temperature physical chemistry and electrochemistry of molten salts and solid electrolytes are the basic scientific direction of the Institute of High-Temperature Electrochemistry. The subjects of researches cover the synthesis of ionic and electronic conductors, the thermodynamic, electrical, optical, diffraction and other properties of the electrolytes, electrode materials and interface between them, the kinetics of the electrode reactions as well as the theory of the high-temperature electrochemical phenomena. One of the most important directions of Institute activity is the development of electrochemical devices including power sources.**		

TOPICS OF INTEREST REGARDING THE CALL IN "COLLABORATIVE S&T PROJECTS"	
Sub-topic of exercise	Copper slag, soils
1. Innovative materials and cutting edge technological processes ultrahigh-power laser sources ☐ intelligent materials and nanomaterials ☐	

.

quantum optics ☐

2. Environmental research and climatic change
biodiversity and ecophysiology of natural ecosystems ☐
climate change in the artic and subartic regions ☐
Material sciences connected with energy convergion and storage ☒

3. Research on serious human health problems
viral infections: HIV and Hepatitis ☐
auto-immune diseases ☐
neurodegenerative diseases ☐

4. Contemporary socio-economic studies
Social security systems and welfare state (in the context of globalization) ☐
Labour, labour market, and employment ☐
Transformation of the educational system ☐

Areas of activity *(Free keywords)*

PROJECT IDEA(S)	
Short description of project	The subjects of the research proposed are new materials for all-solid-state lithium-ion batteries: - solvent-free polymer electrolytes with single-ion lithium conductivity of 10^{-4}-10^{-3} Sm cm^{-1} at ambient temperatures; - transition-metal dichalcogenides as cathode materials; - nano-Si and nano-Si-based composites as anode materials. The goal of the project is the development of all-solid-state lithium-ion batteries with high performance and enhanced safety.
Description of scientific expertise offered	In the way of the project running there were about 25 articles published and about 50 reports presented for different conferences in Russia and Europe.
Description of technical expertise offered	Materials synthesis and preparation, quantum chemical calculations of electrolyte structure, X-ray diffraction, vibrational spectroscopy, thermal analysis, ac and dc transport properties measurements, test cells assembling and measurements
Description of requested partner scientific expertise	Researchers in the field of lithium batteries
Description of requested partner technical expertise	Lithium batteries design, material structure analysis

PARTNERS	
Partners' names, organizations and	

addresses	

This event is funded by the Seventh Framework Programme, European Commission

ERA.Net RUS

28 February 2011, Ekaterinburg, Brokerage Event
ERA.Net-RUS Pilot Joint Call
For Collaborative S&T Projects

PROFILE FORM

PARTICIPANT			
Gender	☐ Mr	● Ms	Title Ph.D. in Biology
First name	Olga		
Last name	Chashchina		
Position	Scientific Secretary		

ORGANISATION DETAILS				
Organisation name	Ilmen State Reserve of the Ural Branch of the Russian Academy of Sciences			
Street *				
ZIP * 456317	City * Miass		Country * Russian Federation	
Phone * +7 3513 591551		Fax +7 3513 570286		
Email * valizer@ilmeny.ac.ru		Web http://igz.ilmeny.ac.ru		
Employees	☐ 1-10	☐ 11 - 50	● 51 - 250	☐ 250 +
Organisation type	☐ Higher Education Institution	☒ Research Institution	☐ Industry	☐ SME ☐ other
Department	Ural Branch of the Russian Academy of Sciences			
Short description of your company or organization	It is one of the most authoritative scientific establishment for nature preservation in Russia and in the Ural region. It is the oldest mineralogical reserve not only in Russia but also abroad in which mineralogical and biological variety of the Southern Urals is protected and thoroughly studied.			

TOPICS OF INTEREST REGARDING THE CALL IN "COLLABORATIVE S&T PROJECTS"
Sub-topic of exercise
1. Innovative materials and cutting edge technological processes ultrahigh-power laser sources ☐ intelligent materials and nanomaterials ☐ quantum optics ☐ **2. Environmental research and climatic change** biodiversity and ecophysiology of natural ecosystems ☒

climate change in the artic and subartic regions ☐
Material sciences connected with energy convergion and storage ☐

3. Research on serious human health problems
viral infections: HIV and Hepatitis ☐
auto-immune diseases ☐
neurodegenerative diseases ☐

4. Contemporary socio-economic studies
Social security systems and welfare state (in the context of globalization) ☐
Labour, labour market, and employment ☐
Transformation of the educational system ☐

Areas of activity *(Free keywords) Biodiversity, Anthropogenic Change, Climate Change, Rational management of Ecosystems, Protected Natural Areas, Biomonitoring, Adaptation Opportunities of Ecosystems*

PROJECT IDEA(S)	
Short description of project	
Description of scientific expertise offered	
Description of technical expertise offered	
Description of requested partner scientific expertise	
Description of requested partner technical expertise	
PARTNERS	
Partners' names, organizations and addresses	

This event is funded by the Seventh Framework Programme, European Commission

ERA.Net RUS

SEVENTH FRAMEWORK PROGRAMME

28 February 2011, Ekaterinburg, Brokerage Event
ERA.Net-RUS Pilot Joint Call
For Collaborative S&T Projects

PROFILE FORM

PARTICIPANT			
Gender	**Mrs**		Title **candidate of science**
First name	**Larisa**		
Last name	**Chekanova**		
Position	**Senior Staff Scientist, Laboratory of Organic Complexing Reagents**		

ORGANISATION DETAILS			
Organisation name: **Institute of Geology and Geochemistry**			
Street * : **Korolev, 3**			
ZIP * **614013**	City * **Perm**		Country * **Russia**
Phone * **(342) 237 8246**		Fax **(342) 237 82 62**	
Email * **e-mail: larchek@mail.ru**		Web **http://www.itch.perm.ru**	
Employees		100 -110	
Organisation type	☐ Higher Education Institution ■ Research Institution ☐ Industry ☐ SME ☐ other		
Department	**Ural Branch of the Russian Academy of Sciences**		
Short description of your company or organization	**Institute of Technical Chemistry has been conducting research work in chemistry since 1985. General areas: (a) design of materials with a set of ordered physic-chemical and mechanical properties and structures on the basis of organic polymers and inorganic compounds; (b) development of the theory of chemical structure and of synthesis methods for organic compounds including those with biological activity.**		

TOPICS OF INTEREST REGARDING THE CALL IN "COLLABORATIVE S&T PROJECTS"
Sub-topic of exercise: Treatment of industrial sewage
1. Innovative materials and cutting edge technological processes ultrahigh-power laser sources ☐ intelligent materials and nanomaterials ☐ quantum optics ☐ **2. Environmental research and climatic change** biodiversity and ecophysiology of natural ecosystems ■

climate change in the artic and subartic regions ☐ Material sciences connected with energy convergion and storage ☐ **3. Research on serious human health problems** viral infections: HIV and Hepatitis ☐ auto-immune diseases ☐ neurodegenerative diseases ☐ **4. Contemporary socio-economic studies** Social security systems and welfare state (in the context of globalization) ☐ Labour, labour market, and employment ☐ Transformation of the educational system ☐
Areas of activity *(Free keywords)* Flotation reagents, non-ferrous metals, ion flotation

PROJECT IDEA(S)	
Short description of project	**Removal of toxic metals from industrial wastes by flotation method with the use of organic reagents.** Industrial enterprises of mining, machinery, non-ferrous metallurgy and electronics are sources of pollution of the environment with toxic metals – Cu(II), Ni(II), Zn(II), Cr(III) and others. Among various methods for treatment of sewage waters containing hundreds and thousands mg/l of metals, ion flotation method is one of most promising. The progress in this area is significantly dependent on production of novel high-performance reagents called collectors. N,O-containing organic chelating compounds have been investigated as collectors for ion flotation of Cu(II) and non-ferrous metals. Reagents enabling one-stage treatment of sewage waters and production of household water containing only maximum permissible concentrations of toxic metals have been designed. We recommend using the offered flotation reagents in after-treatment of water for removal of heavy metals' ions after reagent sedimentation thereof as well as for removal of non-ferrous metals' ions from ammoniac rinsing water in galvanic productions.
Description of scientific expertise offered	During investigations, 15 scientific articles have been published, 2 inventions patented in the RF.
Description of technical expertise offered	Reagents have been tested on samples of sewage waters from galvanic productions.
Description of requested partner scientific expertise	Industrial enterprises of mining, machinery, non-ferrous metallurgy and electronics.

Description of requested partner technical expertise	
PARTNERS	
Partners' names, organizations and addresses	

This event is funded by the Seventh Framework Programme, European Commission

ERA.Net RUS

SEVENTH FRAMEWORK PROGRAMME

28 February 2011, Ekaterinburg, Brokerage Event
ERA.Net-RUS Pilot Joint Call
For Collaborative S&T Projects

PROFILE FORM

PARTICIPANT			
Gender	**Mrs**		Title **Candidate of science**
First name	**Galina**		
Last name	**Chernova**		
Position	**Academic Secretary**		

ORGANISATION DETAILS			
Organisation name: **Institute of Technical Chemistry**			
Street * : **Korolev, 3**			
ZIP * **614013**	City * **Perm**		Country * **Russia**
Phone * **(342) 237 82 69**		Fax **(342) 237 82 62**	
Email * **e-mail: itch-uro-ran@yandex.ru**		Web **http://www.itch.perm.ru**	
Employees		100-110	
Organisation type	☐ Higher Education Institution ■ Research Institution ☐ Industry ☐ SME ☐ other		
Department	**Ural Branch of the Russian Academy of Sciences**		
Short description of your company or organization	**Institute of Technical Chemistry has been conducting research work in chemistry since 1985. General areas: (a) design of materials with a set of ordered physic-chemical and mechanical properties and structures on the basis of organic polymers and inorganic compounds; (b) development of the theory of chemical structure and of synthesis methods for organic compounds including those with biological activity.**		

TOPICS OF INTEREST REGARDING THE CALL IN "COLLABORATIVE S&T PROJECTS"
1. Innovative materials and cutting edge technological processes ultrahigh-power laser sources ☐ intelligent materials and nanomaterials ■ quantum optics ☐ **2. Environmental research and climatic change** biodiversity and ecophysiology of natural ecosystems ■

climate change in the artic and subartic regions ☐ Material sciences connected with energy convergion and storage ☐ **3. Research on serious human health problems** viral infections: HIV and Hepatitis ■ auto-immune diseases ☐ neurodegenerative diseases ☐ **4. Contemporary socio-economic studies** Social security systems and welfare state (in the context of globalization) ☐ Labour, labour market, and employment ☐ Transformation of the educational system ☐
Areas of activity *(Free keywords)*

PROJECT IDEA(S)	
Short description of project	
Description of scientific expertise offered	
Description of technical expertise offered	
Description of requested partner scientific expertise	
Description of requested partner technical expertise	

PARTNERS	
Partners' names, organizations and addresses	

This event is funded by the Seventh Framework Programme, European Commission

ERA.Net RUS

SEVENTH FRAMEWORK PROGRAMME

28 February 2011, Ekaterinburg, Brokerage Event
ERA.Net-RUS Pilot Joint Call
For Collaborative S&T Projects

PROFILE FORM

PARTICIPANT			
Gender	☒ Mr	☐ Ms	Title Dr.
First name	Alexander		
Last name	Gavrilyuk		
Position	Scientific Researcher		

ORGANISATION DETAILS				
Organization name	Institute of Mathematics and Mechanics, Ural Branch, Russian Academy of Sciences (IMM UrB RAS)			
Street *	S. Kovalevskaya, 16			
ZIP * 620990	City * Yekaterinburg		Country * Russian Federation	
Phone * +7(343)374-83-32		Fax +7(343) 374-25-81		
Email * alexander.gavriliouk@gmail.com		Web www.imm.uran.ru		
Employees	☐ 1-10	☐ 11 - 50	☐ 51 - 250	☒ 250 +
Organisation type	☐ Higher Education Institution	☒ Research Institution	☐ Industry	☐ SME ☐ other
Department	Algebra and Topology			
Short description of your company or organization	The Institute of Mathematics and Mechanics is a research institution covering important directions of modern and classic mathematics: mathematical theory of control processes, analytical and numerical methods of continuum mechanics, the theory of ill-posed problems and generalized functions, the theory of approximation of functions and operators, methods of convex optimization and pattern recognition, in the field of modern algebra and topology.			

TOPICS OF INTEREST REGARDING THE CALL IN "COLLABORATIVE S&T PROJECTS"
Sub-topic of exercise
1. Innovative materials and cutting edge technological processes ultrahigh-power laser sources ☐ intelligent materials and nanomaterials ☐ quantum optics ☐ **2. Environmental research and climatic change** biodiversity and ecophysiology of natural ecosystems ☐

climate change in the artic and subartic regions ☐
Material sciences connected with energy convergion and storage ☒

3. Research on serious human health problems
viral infections: HIV and Hepatitis ☐
auto-immune diseases ☐
neurodegenerative diseases ☐

4. Contemporary socio-economic studies
Social security systems and welfare state (in the context of globalization) ☐
Labour, labour market, and employment ☐
Transformation of the educational system ☐

Areas of activity *(Free keywords)*
Solid oxide fuel cells, image analysis, microstructure modeling, design of experiments

PROJECT IDEA(S)	
Short description of project	The main goal of the project is development of algorithms and software for image analysis and microstructure modeling for researches and engineers working in the area of SOFCs (Solid Oxide Fuel Cells). The project includes: 1) Design of the experiments; 2) SEM imaging; 3) Image analysis; 4) Stochastic microstructure modeling.
Description of scientific expertise offered	Experience in microstructure characterization via image analysis, stochastic modeling of cathode's and anode's functional layers in SOFCs.
Description of technical expertise offered	Supercomputing center of IMM UrB RAS.
Description of requested partner scientific expertise	Materials sciences.
Description of requested partner technical expertise	Electronic microscopy.
PARTNERS	
Partners' names, organizations and addresses	1) Dr. Robert Steinberger-Wilckens, Forschungszentrum Jülich (IEK-PBZ), 52425, Germany, Jülich, Leo-Brandt-Str. 2) Ananyev Maxim, Institute of High Temperature Electrochemistry, UB RAS (IHTE): 620990, Russian Federation, Yekaterinburg city, S. Kovalevskaya, 22. 3) Florence Lefebvre-Joud, Commissariat a l'Energie Atomique, BP6 - 92265 Fontenay-

	aux-Roses cedex, France. 4) Dr. Jari Kiviaho, Valtion teknillinen tutkimuskeskus, P.O. Box 1000, FI-02044 VTT, Finland. 5) Dr. Philippe Baranek, Electricite de France, France.

This event is funded by the Seventh Framework Programme, European Commission

ERA.Net RUS

SEVENTH FRAMEWORK PROGRAMME

ERA.Net-RUS Pilot Joint Call
For Collaborative S&T Projects

PROFILE FORM

PARTICIPANT				
Gender	☒ Mr	☐ Ms	Title	
First name	Olga			
Last name	Kadebskaya			
Position	The research assistant			
ORGANISATION DETAILS				
Organisation name	Mining Iinstitute Ural Branch of Russian academy of sciences			
Street *	Sibirskaya 78-a			
ZIP * 614007	City * Perm		Country * Russia	
Phone * 7 (342) 216-39-00		Fax 7(342) 2-16-75-02		
Email * OliKad@Mi-Perm.ru		Web www.mi-perm.ru		
Employees	☐ 1-10	☐ 11 - 50	☒ 51 - 250	☐ 250 +
Organisation type	☐ Higher Education Institution	☒ Research Institution	☐ Industry	☐ SME ☐ other
Department	Ural Branch of Russian academy of sciences			
Short description of your company or organization	The Mining Institute at the Ural Branch of the Russian Academy of Sciences (UB RAS) was founded in 1988. The Institute's research activity is focused on the comprehensive study into the mechanisms of the development of geosystem parameters and their optimal control under the influence of natural and anthropogenic factors on the earth's interior. At present it is the West Urals center for fundamental and applied research on Earth sciences and the only academic science mining establishment in the Volga Federal Okrug (region). Among 97 researcher workers, there is 1 Corresponding Member of RAS, 15 D.Sc.-s of Science and 42 Ph.D.-s.			

TOPICS OF INTEREST REGARDING THE CALL IN "COLLABORATIVE S&T PROJECTS"
Sub-topic of exercise
1. Innovative materials and cutting edge technological processes ultrahigh-power laser sources ☐ intelligent materials and nanomaterials ☐ quantum optics ☐ **2. Environmental research and climatic change** biodiversity and ecophysiology of natural ecosystems ☒ climate change in the artic and subartic regions ☐ Material sciences connected with energy convergion and storage ☐ **3. Research on serious human health problems** viral infections: HIV and Hepatitis v☐

auto-immune diseases ☐ neurodegenerative diseases ☐ **4. Contemporary socio-economic studies** Social security systems and welfare state (in the context of globalization) ☐ Labour, labour market, and employment ☐ Transformation of the educational system ☐
Areas of activity (Free keywords) Karst, ice cave, gypsum cave, microclimate, Ice cave deposits, cryogenic mineralization, modern minerals, archives of climatic and environmental informations

PROJECT IDEA(S)	
Short description of project	paleoclimatic reconstructions using ice in caves as sources of data Ice cave deposits, located inside karstic systems, represent a new challenge for glaciologists, speleologists and (paleo-)climatologists and other related sciences. The formation and evolution of ice in caves follows the forcing of the external environment, both as a source of water and snow, and the local climates which induces a specific cave climate, favorable for the accumulation and preservation of ice. Located also at low altitudes, in areas where both alpine glaciers and ice caps are missing, perennial ice deposits in caves could be important archives of climatic and environmental informations. In Austria, Slovak Republic, Romania, Russia and other countries, these ice caves, as show caves, represent also an important economic resource for the local community.
Description of scientific expertise offered	Bulat Mavludov, Institute of geography RAS, e-mail: bulatrm@bk.ru, 119017, Moscow, Staromoneny 29, , Institute of geography RAS
Description of technical expertise offered	
Description of requested partner scientific expertise	Grebe Christiane, workgroup Cave & Subway Climatology, Depertment of Geography, Ruhr-University Bochum, e-mail: christiane_grebe@gmx.de, NA4/172, Universitatsstrasse 150, D-44780 Bochum, Germany
Description of requested partner technical expertise	
PARTNERS	
Partners' names, organizations and addresses	Valter Maggi, Professore Associato PhD, Dip. di Scienze dell'Ambiente e del Territorio, Universita degli Studi di Milano Bicocca, Enviromental Sciences Dept., University of Milano Bicocca, Piazza della Scienza, 1, 20126 - Milano Italy, tel/phone: +39 0264482874 fax: +39 0264482895, valter.maggi@unimib.it, http://geoserver.disat.unimib.it/valter/

This event is funded by the Seventh Framework Programme, European Commission

ERA.Net RUS

SEVENTH FRAMEWORK PROGRAMME

28 February 2011, Ekaterinburg, Brokerage Event
ERA.Net-RUS Pilot Joint Call
For Collaborative S&T Projects

PROFILE FORM

PARTICIPANT			
Gender	☑ Mr	☐ Ms	Title The senior scientific employee
First name	Anthon		
Last name	Kolpakov		
Position			

ORGANISATION DETAILS				
Organisation name	**Orenburg scientific center of the Ural branch of the Russian Academy of Sciences**			
Street *	Pionerskaj			
ZIP * 460000	City * Orenburg		Country * Russia	
Phone * +7(3532)772619, +79058400301		Fax +7(3532) 77-44-63		
Email * anton-kolpakov@mail.ru		Web -		
Employees	☑ 1-10	☐ 11 - 50	☐ 51 - 250	☐ 250 +
Organisation type	☐ Higher Education Institution	☒ Research Institution	☐ Industry	☐ SME ☐ other
Department	Department of biotechnical systems			
Short description of your company or organization	The basic direction of scientific activity - ***studying of functioning of difficult biotechnical systems and increase of efficiency of their operation.*** New fundamental and applied direction of researches - ***the pulse mechanics of multiphase mediums.*** Department problems: - Modelling, algorithmization, creation of methods of research of impulsno-hydrodynamic and thermomechanical processes in multiphase environments; - Working out of technical devices for agrarian and industrial complex branches, on the basis of new technologies.			

TOPICS OF INTEREST REGARDING THE CALL IN "COLLABORATIVE S&T PROJECTS"
Sub-topic of exercise - ***the pulse mechanics of multiphase mediums (perfection of ecologically safe technologies of processing (rehash) at preservation of valuable substances in processed liquid raw materials).***
1. Innovative materials and cutting edge technological processes ultrahigh-power laser sources ☐ intelligent materials and nanomaterials ☐ quantum optics ☐

This event is funded by the Seventh Framework Programme, European Commission

ERA.Net RUS

2. Environmental research and climatic change
biodiversity and ecophysiology of natural ecosystems ☐
climate change in the artic and subartic regions ☐
Material sciences connected with energy convergion and storage ☒

3. Research on serious human health problems
viral infections: HIV and Hepatitis ☐
auto-immune diseases ☐
neurodegenerative diseases ☐

4. Contemporary socio-economic studies
Social security systems and welfare state (in the context of globalization) ☐
Labour, labour market, and employment ☐
Transformation of the educational system ☐

Areas of activity *(Free keywords)* **The liquid mediums, hydrodynamic cavitation, heat exchange, mass exchange, phase transformations, cumulative action energy**

PROJECT IDEA(S)	
Short description of project	Research of processes of heat exchange and mass exchange in liquid mediums in the field of a hydrodynamic cavitation. Studying of pulse processes of pulsations of pressure and temperature in liquid environments consists in the description of heat exchange and mass exchange in the conditions of hydrodynamic cavitation in multicomponent jet and centrifugal currents of a stream (distribution of temperature, pressure, concentration of a disperse phase in cavitation areas, length of area and section radius cavitation kernels, concentration of kernels cavitation, efficiency of process ejection and density of a jet current of the liquid environment in the field cavitation etc.). Special interest represents not study from a fundamental position process destruction raw materials in potential cavitation a stream kernel, and also search of ways of management in parametres of area of development hydrodynamic cavitation. High accuracy of researches of processes of heat exchange and mass exchange in liquid environments in the conditions of hydrodynamic cavitation will be reached by methods: microscopic, acoustic, optical, thermovision and mechanical registration of regime parametres of the hydrodynamic generator cavitation (HGC) and rheological properties of polydisperse liquid environments. Object of research is pulse hydrodynamic cavitation a field bubble clusters in liquid environments. As environments the polydisperse natural systems entering into the list of production of the country providing food safety are chosen: potable water, crude milk of agricultural animals, vegetable oils of sunflower and of rape. Scientific novelty of the project is studying of processes of heat exchange and mass exchange at cumulative action energy of high density in the field of hydrodynamic cavitation. Such approach assumes creation of impulses of pressure with amplitude some atmospheres and duration of an order of several micro seconds, in difference from devices allowing to reach superpressure in a static mode. Practical novelty of researches is the finding of mechanisms (optimisation of is constructive-regime parametres HGC) efficient control cavitation a field for an intensification of himiko-technological processes of processing of liquid environments.
Description of scientific expertise offered	Cumulative action energy of high density in the field of hydrodynamic cavitation is the new perspective technology which introduction in productions will raise their profitability. Therefore working out and creation HGC is the important applied problem of the project. A key link at the decision of this problem is creation of the stand for research of the pulse hydrodynamic phenomena in diphasic environments methods optical, thermovision, hydroacoustic, etc. the control, for the purpose of an intensification of processes of heat exchange and mass exchange processes. To these requirements answers HGC, designed on the basis of typical schemes of

	centrifugal and vortical pumps. The choice of rational is constructive-regime parametres HGC (the scheme of an arrangement and geometrical parametres of the generator, frequency of rotation of a rotor, type and concentration gas-liquid phases, pressure, giving, temperature in the chamber etc.) will allow to operate effectively existential characteristics of a field cavitation and, as consequence, to receive new qualitative properties of liquid environments. The devices developed and created for last 10 years pulsation actions (rotorno-pulse devices, nozzles Venturi, vortical tubes and etc.) have shown a high overall performance in many branches of a process industry of Russia. Thus on working out of technical objects of pulse processing of agricultural raw materials it is not enough researches.
Description of technical expertise offered	The purpose of applied scientific researches is *perfection of ecologically safe technologies of processing (rehash) at preservation of valuable substances in processed liquid raw materials.* ***Object of research*** is process of processing of multiphase environments in devices of pulse hydrodynamic processing of potable water, milk and vegetable oils. ***The object of research*** includes structurally-parametrical synthesis of process of processing of multiphase environments; engineering techniques of studying of functioning of biotechnical objects of processing; devices for increase of efficiency of process of processing. ***Methods*** of achievement of the purpose of researches - system and synergy approaches, with use of mathematical and natural modelling. ***Novelty of researches*** consists in reception of a ready product (an isotropic dynamic condition of liquid environments, uniform distribution of phases высоковязкого a biopolymeric pseudo-plastic material), at the expense of the combined power influences (синергический the approach). Prospects of use of pulse technologies of processing of liquid environments in various industries and agrarian and industrial complex the following: *pulse technology of disinfecting and distillation of the polluted water, cavitation technology of clearing of surfaces from strong mechanical pollution, pulse technology of preservation food both biologically active emulsion and suspensions, pulse technology of an intensification of processes of dissolution and extraction (infusion) products of microbiological synthesis (pectin, carotin, tannin, etc.) From phytogenesis raw materials, technology of pulse processing of vegetable oils (rape, sunflower), cavitation technology of processing of a waste of plant growing for agricultural forage manufacture, pulse technology of reception organic fertilizers from a vegetative waste, pulse technology of processing liquid waste of animals, the pulse technology of biogas, pulse technology of heating of premises, pulse technology of crushing of fibrous and loose materials, pulse technology of reception of dispersive water fuel systems.*
Description of requested partner scientific expertise	The big research establishment in a scientific direction the pulse mechanics of multiphase mediums.
Description of requested partner technical expertise	The big research establishment in a scientific direction the pulse mechanics of multiphase mediums.
PARTNERS	
Partners' names, organizations and addresses	Are ready on various forms of co-operation with any scientific institutions

This event is funded by the Seventh Framework Programme, European Commission

ERA.Net RUS

SEVENTH FRAMEWORK PROGRAMME

28 February 2011, Ekaterinburg, Brokerage Event
ERA.Net-RUS Pilot Joint Call
For Collaborative S&T Projects

PROFILE FORM

PARTICIPANT			
Gender	☐ Mr x	☐ Ms	Title Professor
First name	Ernst		
Last name	Kurmaev		
Position	Chief Scientist		

ORGANISATION DETAILS				
Organisation name				
Street * S. Kovalevskoi 18				
ZIP * 620990	City * Yekaterinburg		Country * Russia	
Phone * +7-343-3744183		Fax +7-343-3745244		
Email * kurmaev@ifmlrs.uran.ru		Web www.imp.uran.ru		
Employees	☐ 1-10	☐ 11 - 50	☐ 51 - 250	☒ 250 +
Organisation type	☐ Higher Education Institution	Institute of Metal Physics, Russian Academy of Sciences-Ural Division	☐ Industry ☐ SME	☐ other
Department	Laboratory of X-ray Spectroscopy			
Short description of your company or organization	Institute of Metal Physics, Russian Academy of Sciences-Ural Division, is biggest Institute of Physics away of Moscow. The main topic is materials science, magnetism, electronic physics and nondestructive control.			

TOPICS OF INTEREST REGARDING THE CALL IN "COLLABORATIVE S&T PROJECTS"
Computer design of systems for potential hydrogen-generating photocatalysts
1. Innovative materials and cutting edge technological processes ultrahigh-power laser sources ☐ intelligent materials and nanomaterials ☐ quantum optics ☐

This event is funded by the Seventh Framework Programme, European Commission

ERA.Net RUS

2. Environmental research and climatic change
biodiversity and ecophysiology of natural ecosystems ☐
climate change in the artic and subartic regions ☐
Material sciences connected with energy convergion and storage x☐

3. Research on serious human health problems
viral infections: HIV and Hepatitis ☐
auto-immune diseases ☐
neurodegenerative diseases ☐

4. Contemporary socio-economic studies
Social security systems and welfare state (in the context of globalization) ☐
Labour, labour market, and employment ☐
Transformation of the educational system ☐

Areas of activity *(Free keywords)* Electronic structure, band gap engineering of semiconductors, Synchrotron excited soft X-ray emission and absorption spectra

PROJECT IDEA(S)	
Short description of project	Project is devoted to computer design of new ternary and quaternary semiconductors based on TiO_2, ZnO, In_2O_3 and GaN binary compounds. The main purpose of project is design of new efficient photocatalyst materials with reduced band gap (< 2.2 eV) to absorb a significant part of visible light and achieve a hydrogen conversion efficiency >15%. The electronic structure calculations will be checked by synchrotron excited X-ray emission and absorption spectra.
Description of scientific expertise offered	We have a great experience in study of electronic structure of different types of advanced materials using synchrotron excited soft X-ray emission and absorption spectra. Last few years we have studied electronic structure of TiO_2 and ZnO doped by transition metals (J. Phys.: Condens. Matter 18 (2006) 4243), 19 (2007) 276210, 21 (2009) 056002; Phys. Rev. B 75 (2007) 195215; Thin Solid Films 518 (2010) 2825; Solid State Communs. 150 (2010) 1065). We have suggested experimental method for estimation of band gap values using combination x-ray emission and absorption spectra (Phys. Rev. B 77 (2008) 165127) which can be used for evaluation of band gap reduction in new ternary and quaternary compositions.
Description of technical expertise offered	Beginning 1997 we are doing systematic measurements of soft X-ray emission and absorption spectra using synchrotron sources of 3rd generation (Advanced Light Source (Berkeley, USA) and Canadian Light Source (Saskatoon, Canada). Our results has been showcased in the prestigious Compendium of Scientific Highlights of the Advanced Light Source and published in more than 120 papers in peer-reviewed journals.
Description of requested partner scientific expertise	Dr. Aron Walsh focused his research on the modeling and examination of structural, electronic and optical properties of solid-state materials, with a focus on providing new insight into existing systems and the systematic design of materials enhanced for energy applications. He has a particular interest in lattice defects and their role in energy materials and processes (photovoltaics, electrochromism, highcapacity batteries), and strive to maintain a synergetic relationship between theoretical predictions and experimental validation (ChemPhysChem 11 (2010) 2341); Book Series: 34th IEEE Photovoltaic Specialists Conference (2009) 1803, 2234; PhysChemChemPhys 12 (2010) 8446; Phil. Trans. Royal Soc. A 368 (2010) 3379)
Description of requested partner technical expertise	Dr. A. Walsh is using variety of *ab initio* quantum chemical and interatomic potential approaches for computer design of new energy materials. He was one of the first who paid an attention for participation of ns^2-lone pairs of heavy metals in the chemical bonding of corresponding oxides (SnO, SnO_2, PbO, PbO_2, Bi_2O_3) (J. Phys. Chem. C 113 (2009) 439; J. Solid State Chem. 178 (2005) 1422; J. Phys. Chem. B 109 (2009) 18868) and predicted that it can be used for narrowing the search for potential hydrogen-generating photocatalysts (SPIE

	Newsroom 10.1117/2.1200905.1608).
PARTNERS	
Partners' names, organizations and addresses	Dr. Aron Walsh, Department of Chemistry, University College London, Gower Street, London WC1E 6BT, UK. Tel: +44-077-62351621; E-mail: a.walsh@ucl.ac.uk

This event is funded by the Seventh Framework Programme, European Commission

ERA.Net RUS

28 February 2011, Ekaterinburg, Brokerage Event
ERA.Net-RUS Pilot Joint Call
For Collaborative S&T Projects

PROFILE FORM

PARTICIPANT			
Gender		☐ Ms	Title Ph.D.
First name	Irina		
Last name	Kuznetsova		
Position	Senior scientific researcher, laboratory of Evolution Ecology		

ORGANISATION DETAILS				
Organisation name Institute of Plant and Animal Ecology Ural Branch of Russian Academy of Sciences (IPAE UB RAS)				
Street * 8 Marta St., 202				
ZIP * 620144	City * Yekaterinburg			Country * Russian Federation
Phone * +7(343)2103857			Fax +7(343)2608256	
Email * Kuznetsova@ipae.uran.ru			Web www.ipae.uran.ru	
Employees				☒ 250 +
Organisation type	☐ Higher Education Institution	■ Research Institution	☐ Industry	☐ SME ☐ other
Department	Laboratory of Evolution Ecology IPAE UB RAS			
Short description of your company or organization	The main goal of the Institute is the realization of researches on the regularities of functioning, evolution and stability of biological systems on population, community and ecosystem levels in natural and anthropogenic changed environments of the Urals and adjacent territories (Northern Eurasia). The Institute carries out studies on the following theoretical problems: biota evolution regularities; population biology; biota anthropogenic transformation; biological diversity. A high degree of academic qualification and experience in the field allow the staff to tackle problems of applied ecology: rational nature management; ecological regulation; bio-indication; ecotoxicology; radioecology; environmental impact assessment and ecological prediction. Scientific structural department of the IPAE UB RAS consist of 13 laboratories. Collective of the Institute counts 294 collaborators including 193 scientific researchers: 1 academician of RAS; 1 corresponding member of RAS; 31 Doctors of Sciences and 103 Candidates of Sciences (PhD). “The Russian Journal of Ecology” is produced in the Institute.			

TOPICS OF INTEREST REGARDING THE CALL IN “COLLABORATIVE S&T PROJECTS”

This event is funded by the Seventh Framework Programme, European Commission

Sub-topic of exercise	
2. Environmental research and climatic change biodiversity and ecophysiology of natural ecosystems ■	
Areas of activity *(Free keywords)*	monitoring, protected areas, ecosystems, state of natural environment

PROJECT IDEA(S)	
Short description of project	Project "Organization of monitoring state of natural environment protected areas". On the base of literature analysis and original elaborations there were suggested new basic principles of organization and realization of complex ecological monitoring of natural environment state of Sverdlovsk region protected areas. The objects of investigations were determined and its selection was founded. Recommendations on creation of monitoring points network in the region were worked out. Also there were elaborated a complex of standard methods of laying sample and discount areas, obligatory standard methods of realization observations and typical forms of accountings by received results.
Description of scientific expertise offered	Collective has scientific reserve. Longstanding elaborations formalized in collective monograph "Complex ecological monitoring of natural environment state of protected areas of Sverdlovsk region" / Ministry of natural resources, RAS (Russian Academy of Sciences), Ural Division, Institute of Plant and Animal Ecology; responsible editor I.A. Kuznetsova. – Yekaterinburg: Ural Sledopyt, 2008. – 216 p.
Description of technical expertise offered	Scientific collective has all necessary field and laboratory equipment for realization observations of natural environment state and its constituents.
Description of requested partner scientific expertise	One certain territory is not enough for real estimation of natural environment state and the character of occurring changes. It is necessary to include data from other regions and countries for joint analytic estimations, which will allow to value and display levels of local and global changes.
Description of requested partner technical expertise	It is essential to introduce analyzing sensors and different registration and watching equipment.

PARTNERS	
Partners' names, organizations and addresses	Juri Kurhinen - Dr., Finnish Game and Fisheries Research Institute, Helsinki, Finland

This event is funded by the Seventh Framework Programme, European Commission

ERA.Net RUS

SEVENTH FRAMEWORK PROGRAMME

28 February 2011, Ekaterinburg, Brokerage Event
ERA.Net-RUS Pilot Joint Call
For Collaborative S&T Projects

PROFILE FORM

PARTICIPANT			
Gender	☐ Mr	☐ Ms	Title Mr.
First name	Nikolay		
Last name	Larionov		
Position	Adviser for International cooperation, researcher		

ORGANISATION DETAILS				
Organisation name	Institute of Ecological Problems of the North of the Ural Branch of Russian Academy of Sciences			
Street *	Severnoy Dvinu Emb., 23			
ZIP * 163000	City * Arkhangelsk		Country * Russia	
Phone * +7(8182)287688		Fax +7(8182)287636		
Email * nikolay.larionov@iepn.ru		Web www.iepn.ru		
Employees	☐ 1-10	☐ 11 - 50	☒ 51 - 250	☐ 250 +
Organisation type	☐ Higher Education Institution	■ Research Institution	☐ Industry	☐ SME ☐ other
Department	Laboratory of Chemistry of Plant Biopolymers			
Short description of your company or organization	Research areas: - Integral assessment of environmental problems of the Northwest of Russia and neighboring Arctic water basins - Scientific basis for the development and rational use of mineral resources and biologically renewable natural resources - Deep structure, geodynamics, seismicity and mineralogy of the Earth's Northern territories			

TOPICS OF INTEREST REGARDING THE CALL IN "COLLABORATIVE S&T PROJECTS"
Sub-topic of exercise
1. Innovative materials and cutting edge technological processes ultrahigh-power laser sources ☐ intelligent materials and nanomaterials ☐ quantum optics ☐ **2. Environmental research and climatic change**

biodiversity and ecophysiology of natural ecosystems ■
climate change in the artic and subartic regions ■
Material sciences connected with energy convergion and storage ■

3. Research on serious human health problems
viral infections: HIV and Hepatitis ☐
auto-immune diseases ☐
neurodegenerative diseases ☐

4. Contemporary socio-economic studies
Social security systems and welfare state (in the context of globalization) ☐
Labour, labour market, and employment ☐
Transformation of the educational system ☐

Areas of activity *(Free keywords)* *Environmental chemistry, environmental monitoring, analytical chemistry, sorption processes, chemistry of plant biopolymers, waste management*

PROJECT IDEA(S)	
Short description of project	Title: ARCTIC ECOSYSTEM'S BIODIVERSITY AND GLOBAL CLIMATE CHANGE: MARGIN WAYS OF BIOSPHERE'S DEVELOPMENT UNDER THE DISTURBANCE OF PLANETARY HEAT AND MOISTURE BALANCE Description:. The aim of the Project is to study the influence of Global climate change towards the present state and history of development of Arctic biota under different ways of disturbance of heat and moisture balance. Historically acting under different thermal conditions, zonal and altitudinal ecosystems, as well as ecosystems of geothermal fields should be compared. Complex assessment of biodiversity of ecosystems (by the example of number of groups of land and water animals and plants) is planned. Main environmental factors are to be studied: microclimate, structure of underlying rocks, plants, biogeochemical processes. Paleozoological (mollusks shells, arthropods' remains), paleobotanical (pollen, fruits, remains and prints of leaves and branches), sklerochronological (mollusk shells), dendrochronological (wood) and other approaches will be used in order to study history of development of Arctic biota of different ecosystems during Pleistocene-Holocene Ages. Studies on the age of layers will be performed by isotopic analysis (stable U and C isotopes). Based on the data mentioned above, models of historical evolving of different ecosystems under different climate conditions will be developed. Forecast of influence of climate change towards local communities and natural management for several simulated ways of disturbance of heat and moisture balance will be made.
Description of scientific expertise offered	Research group consisting of biologists, environmental engineers, chemists, geographers, hydrogeologists (including 4 Doctors of Sciences, 7 Candidates of Sciences, 9 PhD students) is ready to take part in the Project's implementation. The group gained huge experience on implementation of research expeditions and field studies within Arctic region, as well as within other regions (Fennoscandia, Ural, Baikal, Caucasus, Amazon and Orinoko rivers' water basins). The group published 5 monographs and more than 30 articles within the framework of the Project's idea.
Description of technical expertise offered	Georadar SIR System 3000, equiped by Subeho and GSSI antennas, microscopes Leica and Karl Zeiss (Germany), drone aircraft CropCam, equipped by MicroPilot system, Atomic-absorbtion spectrometer novAA-315 (Analytik Jena AG, Germany), Scanning spectrophotometer UV-VIS-1800 (Shimadzu, Japan), IR-interference spectrometer IRAFFINITY-1 (Shimadzu, Japan), Analizator of particles' size HORIBA LB 550 (Japan), equipment for development and safe work of field camps under Arctic conditions (living quartrs, power generators, vehicles, boats, motors), etc..

Description of requested partner scientific expertise	Partners should have an experience in field studies under Arctic and sub-Arctic environment. There is a need in genetic research (studies on genetic distances between the populations of species of Arctic biota, including inhabitants of geothermal fields), isotopic analysis (radioisotope dating of samples from natural deposits – bottom sediments, travertines, peat, etc.)
Description of requested partner technical expertise	Partners should have equipment for: 1. genetic analysis of DNA of Arctic spices (mollusks, insects); 2. samples' radiocarbon dating (C14).
PARTNERS	
Partners' names, organizations and addresses	

This event is funded by the Seventh Framework Programme, European Commission

ERA.Net RUS

SEVENTH FRAMEWORK PROGRAMME

28 February 2011, Ekaterinburg, Brokerage Event
ERA.Net-RUS Pilot Joint Call
For Collaborative S&T Projects

PROFILE FORM

PARTICIPANT			
Gender	☒ Mr	☐ Ms	Title Dr.
First name	Alexey		
Last name	Lukoyanov		
Position	Research Fellow		

ORGANISATION DETAILS				
Organisation name	Institute of Metal Physics of Ural Division of Russian Academy of Sciences			
Street	18, S. Kovalevskaya			
ZIP 620990	City Ekaterinburg		Country Russia	
Phone +7 343 3783886, +79090113149		Fax		
Email Alexey.Lukoyanov@gmail.com		Web		
Employees	☐ 1-10	☐ 11 - 50	☐ 51 - 250	☒ 250 +
Organisation type	☐ Higher Education Institution	☒ Research Institution	☐ Industry	☐ SME ☐ other
Department	Department of Electronic Properties			
Short description of your company or organization	Institute of the Russian Academy of Sciences			

TOPICS OF INTEREST REGARDING THE CALL IN "COLLABORATIVE S&T PROJECTS"
Sub-topic of exercise
1. Innovative materials and cutting edge technological processes ultrahigh-power laser sources ☐ intelligent materials and nanomaterials ☒ quantum optics ☒ **2. Environmental research and climatic change** biodiversity and ecophysiology of natural ecosystems ☐ climate change in the artic and subartic regions ☐ Material sciences connected with energy convergion and storage ☒

This event is funded by the Seventh Framework Programme, European Commission

ERA.Net RUS

3. Research on serious human health problems viral infections: HIV and Hepatitis ☐ auto-immune diseases ☐ neurodegenerative diseases ☐ **4. Contemporary socio-economic studies** Social security systems and welfare state (in the context of globalization) ☐ Labour, labour market, and employment ☐ Transformation of the educational system ☐
Areas of activity *(Free keywords)* nanomaterials, superconductors, electronic structure, metal-insulator transition, band methods, strong electron correlations, phase diagram

PROJECT IDEA(S)	
Short description of project	New nanocrystalline, superconducting and intermetallic materials, materials with phase and metal-insulator transitions
Description of scientific expertise offered	Theoretical investigations of nanocrystalline, superconducting and intermetallic materials, materials with phase and metal-insulator transitions
Description of technical expertise offered	Theoretical investigations of new materials using band methods and methods accounting for electron correlations (dynamical mean-field theory - DMFT)
Description of requested partner scientific expertise	Experimental investigations of physical and chemical properties of new materials
Description of requested partner technical expertise	Experimental synthesis, attestation and measurements of physical characteristics of new materials including magnetic and spectroscopic characteristics of electronic structure and magnetic state
PARTNERS	
Partners' names, organizations and addresses	

This event is funded by the Seventh Framework Programme, European Commission

ERA.Net RUS

SEVENTH FRAMEWORK PROGRAMME

28 February 2011, Ekaterinburg, Brokerage Event
ERA.Net-RUS Pilot Joint Call
For Collaborative S&T Projects

PROFILE FORM

PARTICIPANT			
Gender	Mr		Title Dr.
First name	Valeriy		
Last name	Mazepa		
Position	Head of the laboratory of Dendrochronology		

ORGANISATION DETAILS				
Organisation name Institute of Plant and Animal Ecology Ural Branch of Russian Academy of Sciences (IPAE UB RAS)				
Street * 8 Marta St., 202				
ZIP * 620144	City * Yekaterinburg		Country * Russian Federation	
Phone * +7(343)2103857		Fax +7(343)2608256		
Email * mazepa@ipae.uran.ru		Web www.ipae.uran.ru		
Employees				☒ 250 +
Organisation type	☐ Higher Education Institution	■ Research Institution	☐ Industry	☐ SME ☐ other
Department	Laboratory of Dendrochronology IPAE UB RAS			
Short description of your company or organization	The main goal of the Institute is the realization of researches on the regularities of functioning, evolution and stability of biological systems on population, community and ecosystem levels in natural and anthropogenic changed environments of the Urals and adjacent territories (Northern Eurasia). The Institute carries out studies on the following theoretical problems: biota evolution regularities; population biology; biota anthropogenic transformation; biological diversity. A high degree of academic qualification and experience in the field allow the staff to tackle problems of applied ecology: rational nature management; ecological regulation; bio-indication; ecotoxicology; radioecology; environmental impact assessment and ecological prediction. Scientific structural department of the IPAE UB RAS consist of 13 laboratories. Collective of the Institute counts 294 collaborators including 193 scientific researchers: 1 academician of RAS; 1 corresponding member of RAS; 31 Doctors of Sciences and 103 Candidates of Sciences (PhD). “The Russian Journal of Ecology” is produced in the Institute.			

TOPICS OF INTEREST REGARDING THE CALL IN “COLLABORATIVE S&T PROJECTS”

This event is funded by the Seventh Framework Programme, European Commission

Sub-topic of exercise
2. Environmental research and climatic change biodiversity and ecophysiology of natural ecosystems ■ climate change in the artic and subartic regions ecosystems ■
Areas of activity *(Free keywords)* forest dynamics, tree-line ecotone, tree-ring analysis, Ural Mountains, Yamal Peninsula, climate change

PROJECT IDEA(S)	
Short description of project	In the South and Polar Urals the treeline ecotone has shifted upwards by 80 m of altitude during the last century. These drastic changes in forest cover has induced a loss of the mountain tundra vegetation and altered carbon storage at the landscape scale. While the fossil forests was discovered above the currently advancing treeline in the Polar Urals dating back 1,500 year and in the Yamal Peninsula dating back 7,300 years. Traditionally researches have concentrated on the South and Polar Urals. In order to verify our data and to extrapolate them to larger landscapes, we propose to extend systems analysis of treeline ecotones to other remote areas in the North, the Sub-Polar Urals and the Yamal Peninsula. The objectives of the research are to study the spatio-temporal changes of the treeline ecotone on a centennial time scale in the Urals, to identify the driving forces for the observed changes and to quantify its effects on carbon sequestration. The Urals are highly suitable for investigating climate induced processes because they have never experienced considerable human influence. Treeline dynamics and the resulting impacts on carbon pools will be studied along altitudinal gradients within the treeline ecotone. The combination of dendroecological methods with mapping and measuring of individual trees will provide interannual, precisely dated records of treeline positional shifts, changes in regeneration dynamics, and changes of tree growth within the treeline ecotone. The effects of an upward shift of the treeline on carbon storage will be quantified by measuring carbon stocks in the biomass above- and below-ground, as well as in soil organic matter. We will link these data with the reconstructed treeline dynamics. GIS/RS techniques will be used to integrate and extrapolate measured changes in vegetation and carbon pools to larger areas. This will allow a generalization from site-specific empirical relationships to landscape and regional scale patterns, and will include scenarios of future dynamics under the impacts of climate change. Thematically the applied project will be stratified into 4 research topics: A. Past and present environmental changes on forest-tundra interface. B. Treeline movements. C. Treeline shifting effects on carbon sequestration. Our approach is to measure ecosystems C pools at different altitudinal levels. In combination with the reconstructed changes of vegetation, we will yield a dynamic picture on gains and losses of C from ecosystems. D: Underlying mechanisms of changes in the tree-line ecotone. The additional aim of this project is to expand and compare the 8,000-9,000-year long tree-ring chronologies and woody vegetation dynamics (including tree-line shifts, forest density changes, dynamics of germination and mortality etc.) from northern Europe and northwest Siberia in varying climatic conditions. Our proposal is designed

	to take advantage of a large body of experience and previous work that has gone on for a number of years, aimed at developing very long, continuous chronologies at two high-latitude locations in northern Finland and northwest Siberia.
Description of scientific expertise offered	The team of the Institute of Plant and Animal Ecology is one of the leading groups in the field of mountain forest ecology in Russia. They collaborate with several international institutes in the world and have profound knowledges in climate induced dynamics of forest ecosystems, especially in tree-line researches. The Laboratory of Dendrochronology of the Institute of Plant and Animal Ecology of the Russian Academy of Sciences, Ekaterinburg, Russia has an international reputation of its works on the reconstruction of past climatic conditions using ultralong tree-ring chronologies, ecological studies of the upper and polar tree-line dynamics and forest successions. They have excellent knowledges of the vegetation and environment in the Ural mountains, Yamal Peninsula and West Siberian Plane. Prof. Dr. S.G.Shiyatov, scientific superviser of the laboratory, is one of the pioneers of dendrochronology in Russia. He has published more than 200 articles and 6 monographs.
Description of technical expertise offered	There is available equipment for field work and dengrochronological analysis, software for GIS modelling in the Institute of Plant and Animal Ecology (IPAE, Russia). Since 2001 on key sites of the Polar and South Urals temperature-data loggers series and automatic mini weather stations have been installed.
Description of requested partner scientific expertise	For successful performance of the project it is desirable to collaborate with international team which investigates the functional significance of forest diversity with respect to forest ecology and management, to assess the future development of forests in mountainous regions. This team should have a long experience in assessing climate change impact on ecosystems and landscapes with dynamic models and has a focus on water and biogeochemical cycles in forest and alpine ecosystems. Experimentally, this team should have assess the effects of climatic change and elevated atmospheric CO^2 on soil carbon and nutrients in treeline ecosystems. A strong focus is on Alpine Ecosystems and on the dynamics on mountain forest ecotones.
Description of requested partner technical expertise	It is desirable to deploy two eddy-covariance towers at a typical dwarf shrub tundra site and a tundra site, where a 50-year history of invasion of shrub/forest has been observed and well documented. Micrometeorology as well as energy, water, and carbon fluxes, and thermal and moisture states sholud be continuously measured. Seasonal and monthly ground observations in the tower footprints will characterize spatial heterogeneity of snow and vegetation states, active layer thickness, soil moisture, temperature, net CO^2 and CH_4 fluxes, as well as the distribution and structure of the subsurface microbial communities. There is available equipment for meteorological measurement, soil analysis, dengrochronological analysis in the Swiss Federal Institute WSL.
PARTNERS	
Partners' names, organizations and addresses	Dr. Andreas Rigling, Swiss Federal Research Institute WSL, Zürcherstrasse 111, 8903 Birmensdorf, Switzerland Prof. Kari Mielikäinen, Finnish Forest Research Institute (Metla), Vantaa Research Unit, PO Box 18 (Jokiniemenkuja 1), FI-01301 Vantaa, Finland

This event is funded by the Seventh Framework Programme, European Commission

ERA.Net RUS

28 February 2011, Ekaterinburg, Brokerage Event
ERA.Net-RUS Pilot Joint Call
For Collaborative S&T Projects

PROFILE FORM

PARTICIPANT			
Gender	☐ Mr	☒ Ms	Title PhD
First name	Kcenya		
Last name	Mjachina		
Position	Researcher		

ORGANISATION DETAILS				
Organisation name	Institute of Steppe of Ural Branch of Russian Academy of Sciences			
Street *	Pionerskaya			
ZIP * 460000	City * Orenburg		Country * Russian Federation	
Phone * +7 3532 776247		Fax +7 3532 774432		
Email * orensteppe@mail.ru		Web **www.orensteppe.ru**		
Employees	☐ 1-10	☐ 11 - 50	☐ 51 - 250	☐ 250 +
Organisation type	☐ Higher Education Institution	☒ Research Institution	☐ Industry	☐ SME ☐ other
Department	Ural Branch of Russian Academy of Sciences			
Short description of your company or organization	The institute of steppe of the Ural branch of the Russian Academy of Sciences functions in Orenburg with 1.01.1997. It is created as structural division of the Ural branch for the purpose of complex studying of steppes of Northern Eurasia as uniform geographical and historical and cultural space. The Scientifically-methodical management of Institute carry out the Branch of sciences about the Earth of the Russian Academy of Sciences and the Incorporated academic council on sciences about the Earth of the Russian Academy of Sciences.			

TOPICS OF INTEREST REGARDING THE CALL IN "COLLABORATIVE S&T PROJECTS"
Sub-topic of exercise
1. Innovative materials and cutting edge technological processes ultrahigh-power laser sources ☐ intelligent materials and nanomaterials ☐ quantum optics ☐ **2. Environmental research and climatic change**

biodiversity and ecophysiology of natural ecosystems ☒
climate change in the artic and subartic regions ☐
Material sciences connected with energy convergion and storage ☐

3. Research on serious human health problems
viral infections: HIV and Hepatitis ☐
auto-immune diseases ☐
neurodegenerative diseases ☐

4. Contemporary socio-economic studies
Social security systems and welfare state (in the context of globalization) ☒
Labour, labour market, and employment ☐
Transformation of the educational system ☐

Areas of activity *(Free keywords)*

Directions of scientific activity of Institute of steppe UrO of the Russian Academy of Sciences:
- Protection of landscapes and rational use of natural resources;
- Pollution and ecological risks, the analysis and risk management;
- Modifications of natural systems and their ecological analysis;
- Droughty ecosystems and risk of their desertification;
- A role of a biological variety in ecosystem functioning;
- Change and erosion of soils under the influence of external factors;
- Water resources, the analysis of their condition;
- Stability of natural complexes and stability factors;
- Preserving of a natural heritage;
- Development of strategy of a sustainable development of territories;
- Complex studying of transboundary territories;
- Territory socio-economic analysis;

etc.

PROJECT IDEA(S)	
Short description of project	**Expertise offered:** - The complex analysis of factors of differentiation of modern landscapes of a steppe zone and adjacent Territories (including definition of parameters of a drain, a deflation and desertification); - Working out of methodological approaches and an estimation of transformation of the natural complexes which are under the influence of various anthropogenous factors; - Monitoring of components of landscape sphere and working out of a cadastre of valuable soil and vegetative objects, definition of scientifically-legal bases of their protection; - Working out of strategy of maintenance of ecological stability of steppe, semidesertic and forest-steppe regions; - The decision of ecology-geographical problems of rationalization of wildlife management including a substantiation of optimum structure of landscape-ground fund and modes of steppe wildlife management; - The analysis of aspects of social and economic differentiation of regions, working out and optimization of indicators of a sustainable development of territory.

Description of scientific expertise offered	
Description of technical expertise offered	
Description of requested partner scientific expertise	
Description of requested partner technical expertise	
PARTNERS	
Partners' names, organizations and addresses	

This event is funded by the Seventh Framework Programme, European Commission

ERA.Net RUS

SEVENTH FRAMEWORK PROGRAMME

28 February 2011, Ekaterinburg, Brokerage Event
ERA.Net-RUS Pilot Joint Call
For Collaborative S&T Projects

PROFILE FORM

PARTICIPANT			
Gender	☐ Mr		Title **no**
First name	**Evgueni**		
Last name	**Naimushin**		
Position	**International Officer**		

ORGANISATION DETAILS				
Organisation name: **Institute of Technical Chemistry**				
Street * : **Korolev, 3**				
ZIP * **614013**	City * **Perm**		Country * **Russia**	
Phone * **(342) 237 82 75**		Fax **(342) 237 82 62**		
Email * **e-mail: international@itch.perm.ru**		Web **http://www.itch.perm.ru**		
Employees			100-110	
Organisation type	☐ Higher Education Institution	■ Research Institution	☐ Industry ☐ SME	☐ other
Department	**Ural Branch of the Russian Academy of Sciences**			
Short description of your company or organization	**Institute of Technical Chemistry has been conducting research work in chemistry since 1985. General areas: (a) design of materials with a set of ordered physic-chemical and mechanical properties and structures on the basis of organic polymers and inorganic compounds; (b) development of the theory of chemical structure and of synthesis methods for organic compounds including those with biological activity.**			

TOPICS OF INTEREST REGARDING THE CALL IN "COLLABORATIVE S&T PROJECTS"
1. Innovative materials and cutting edge technological processes ultrahigh-power laser sources ☐ intelligent materials and nanomaterials ■ quantum optics ☐ **2. Environmental research and climatic change**

biodiversity and ecophysiology of natural ecosystems ■ climate change in the artic and subartic regions ☐ Material sciences connected with energy convergion and storage ☐ **3. Research on serious human health problems** viral infections: HIV and Hepatitis ■ auto-immune diseases ☐ neurodegenerative diseases ☐ **4. Contemporary socio-economic studies** Social security systems and welfare state (in the context of globalization) ☐ Labour, labour market, and employment ☐ Transformation of the educational system ☐
Areas of activity *(Free keywords)*

PROJECT IDEA(S)	
Short description of project	
Description of scientific expertise offered	
Description of technical expertise offered	
Description of requested partner scientific expertise	
Description of requested partner technical expertise	

PARTNERS	
Partners' names, organizations and addresses	

This event is funded by the Seventh Framework Programme, European Commission

ERA.Net RUS

SEVENTH FRAMEWORK PROGRAMME

28 February 2011, Ekaterinburg, Brokerage Event
ERA.Net-RUS Pilot Joint Call
For Collaborative S&T Projects

PROFILE FORM

PARTICIPANT			
Gender	☐ Mr	☐ Ms	Title Dr
First name	Patova		
Last name	Elena		
Position	Senior scientist		

ORGANISATION DETAILS				
Organisation name	Institute of biology Komi Sci Center Ural Div. RAS			
Street *	Kommunisticheskaja 28			
ZIP * 167928	City * Syktyvkar		Country * Russia	
Phone * 8 8212 240163		Fax 8 8212 240163		
Email * patova@ib.komisc.ru		Web		
Employees	☐ 1-10	☐ 11 - 50	☐ 51 - 250	☐ 250 +
Organisation type	☐ Higher Education Institution	■ Research Institution	☐ Industry	☐ SME ☐ other
Department	Flora and vegetation of North			
Short description of your company or organization	Founded in 1962, the Institute of Biology, Komi Science Centre, Ural Branch, Russian Academy of Sciences is the largest centre of ecological and biological research in the European North-East of Russia. The Institue comprises seven departments, four laboratories, scientific museum, botanical garden, herbarium (SYKO), experimental animal facility, Lyali research station. The Institute initiated CJSC Severnaya Biokhimicheskaya Kompania (Northern Biochemical Company) and center of ecological education Snegir (Bullfinch).			

TOPICS OF INTEREST REGARDING THE CALL IN "COLLABORATIVE S&T PROJECTS"
Sub-topic of exercise
1. Innovative materials and cutting edge technological processes ultrahigh-power laser sources ☐ intelligent materials and nanomaterials ☐ quantum optics ☐ 2. Environmental research and cl matic change biodiversity and ecophysiology of natural ecosystems ■

climate change in the artic and subartic regions ■ Material sciences connected with energy convergion and storage ☐ 3. Research on serious human health problems viral infections: HIV and Hepatitis ☐ auto-immune diseases ☐ neurodegenerative diseases ☐ 4. Contemporary socio-economic studies Social security systems and welfare state (in the context of globalization) ☐ Labour, labour market, and employment ☐ Transformation of the educational system ☐
Areas of activity *(Free keywords)* Determine the structural and functional biodiversity of natural ecosystems, vegetation cover dynamics under climatic and anthropogenic changes

PROJECT IDEA(S)	
Short description of project	**BIODIVERSITY AND ECOPHYSIOLOGY OF EUROPEAN NORTH NATURAL ECOSYSTEMS IN A CHANGING CLIMATE** The project is aimed to study the fundamental problems of biodiversity investigation and reservation in arctic and subarctic natural ecosystems which is especially important under the changing climate and increasing anthropogenic pressure. European Northeast Russia, with a relatively small degree of anthropogenic transformed landscapes, represents a good model region for the diversity investigation of taiga and tundra natural flora ecosystems, and detection of its trends influenced by environmental change. Complex natural processes of the past millennia have formed on the territory of the European North-east, situated at the border between Europe and Asia, rich and unique flora. In natural landscapes, tundra and forest species and elements of eastern and western floras are combined; stable populations of endemic taxa are preserved. Data, received during the project realization, will deepen the understanding of the basic factors that determine the structural and functional biodiversity of natural ecosystems. Learning about special features of the vegetation cover dynamics will help to forecast the natural processes in plant communities and changes caused by various aspects of human activities and processes related to climate change.
Description of scientific expertise offered	-To study structural and functional organization of the main plant communities of subarctic and mountain ecosystems in European North; to identify species and population diversity of spore and vascular plants; reveal patterns of distribution of vegetation in the altitudinal and latitudinal gradient; to study the dynamics of plant communities and indicator species by natural and anthropogenic factors in a changing climate. - Ecological and physiological study of edificatory and rare species of plants; environmental influences on growth, carbon utilization, mineral nutrition and ects.; plants carbon balance and energy conversion at different irradiance, temperature and moisture; plant physiological ecology in climate context; understanding of physiological basis of plant-mediated feedback process controlling the functioning of northern ecosystems (project owner prof. T. Golovko). - Modeling and predicting the processes in northern ecosystem under climatic change. The characterization of the processes of change ecosystem indicators in the European North in the context of global climate change over the past decade, based on analysis of satellite images and meteorological data. Identify key areas

Description of technical expertise offered	Depends on the implementation and content of the proposed project
Description of requested partner scientific expertise	Depends on the implementation and content of the proposed project
Description of requested partner technical expertise	Depends on the implementation and content of the proposed project
PARTNERS	
Partners' names, organizations and addresses	We are in a process of forming international command now

This event is funded by the Seventh Framework Programme, European Commission

ERA.Net RUS

28 February 2011, Ekaterinburg, Brokerage Event
ERA.Net-RUS Pilot Joint Call
For Collaborative S&T Projects

PROFILE FORM

PARTICIPANT			
Gender	☐ Mr	☐ +Ms	Title scientific researcher, Master of physics
First name Elena			
Last name Pikalova			
Position scientific group leader, a chief of project " Perspective oxygen ion conducting ceria-based ceramic materials for electrochemical devices"			

ORGANISATION DETAILS				
Organisation name Institute of High Temperature Electrochemistry, UB RAS				
Street * S. Kovalevskoy, 22/ Academicheskaya, 20				
ZIP * 620990	City * Ekaterinburg		Country * Russia	
Phone * 8 343 – 362- 32-63		Fax 8 343- 374 -59- 92		
Email * e.pikalova@rambler.ru		Web http://www.ihte.uran.ru		
Employees			☐ +51 - 250	
Organisation type	☐ Higher Education Institution	+☐ Research Institution	☐ Industry	☐ SME ☐ other
Department	Ural Brunch of the Russian Academy of Sciences			
Short description of your company or organization	Academic research Institute specializes in the field of high temperature physical chemistry and electrochemistry of molten and solid electrolytes.			

TOPICS OF INTEREST REGARDING THE CALL IN "COLLABORATIVE S&T PROJECTS"
Sub-topic of exercise Solid Oxide Fuel Cells
1. Innovative materials and cutting edge technological processes ultrahigh-power laser sources ☐ intelligent materials and nanomaterials ☐ quantum optics ☐ **2. Environmental research and climatic change** biodiversity and ecophysiology of natural ecosystems ☐

climate change in the artic and subartic regions ☐ Material sciences connected with energy convergion and storage +☐ **3. Research on serious human health problems** viral infections: HIV and Hepatitis ☐ auto-immune diseases ☐ neurodegenerative diseases ☐ **4. Contemporary socio-economic studies** Social security systems and welfare state (in the context of globalization) ☐ Labour, labour market, and employment ☐ Transformation of the educational system ☐
Areas of activity *(Free keywords)*

PROJECT IDEA(S)	
Short description of project	Methods of creation and investigation of thin film solid electrolyte on the porous tubular electrode substrate for IT-SOFC . - search of electrolyte and electrode materials suitable for IT-SOFC - production of porous electrode tubes by Plasma Spraying method - creation gas tight thin films (solid state electrolytes) by Supersonic Plasma Spraying - evaluation of porosity, adhesion properties during heat cycles, electrical conductivity The main goal – to find fast, cheep and exercisable method of the tubular IT-SOFC production
Description of scientific expertise offered	In the way of the project running there were 5 articles published and 15 reports presented on different conferences in Russia and abroad.
Description of technical expertise offered	There is equipment for XRD, SEM, electrical, electrochemical and thermo mechanical investigations in different atmospheres.
Description of requested partner scientific expertise	There is experience in porous tube production.
Description of requested partner technical expertise	There is equipment for Plasma and Supersonic Plasma Spraying. It is necessary some additional properties for some modernization.
PARTNERS	
Partners' names, organizations and addresses	Urals innovation technologies (Uralintech) Institute of Metallurgy UB RAS

This event is funded by the Seventh Framework Programme, European Commission

ERA.Net RUS

SEVENTH FRAMEWORK PROGRAMME

28 February 2011, Ekaterinburg, Brokerage Event
ERA.Net-RUS Pilot Joint Call
For Collaborative S&T Projects

PROFILE FORM

PARTICIPANT			
Gender	☐ Mr		Title **doctor of science**
First name	**Aleksandr**		
Last name	**Radushev**		
Position	**Head of Laboratory of Organic Complexing Reagents**		

ORGANISATION DETAILS				
Organisation name: **Institute of Technical Chemistry**				
Street * : **Korolev, 3**				
ZIP * **614013**	City * **Perm**		Country * **Russia**	
Phone * **(342) 237 82 44**		Fax **(342) 237 82 62**		
Email * **e-mail: avradu@mail.ru**		Web **http://www.itch.perm.ru**		
Employees			☐ 51 - 250	
Organisation type	☐ Higher Education Institution	■ Research Institution	☐ Industry	☐ SME ☐ other
Department	**Ural Branch of the Russian Academy of Sciences**			
Short description of your company or organization	**Institute of Technical Chemistry has been conducting research work in chemistry since 1985. General areas: (a) design of materials with a set of ordered physic-chemical and mechanical properties and structures on the basis of organic polymers and inorganic compounds; (b) development of the theory of chemical structure and of synthesis methods for organic compounds including those with biological activity.**			

TOPICS OF INTEREST REGARDING THE CALL IN "COLLABORATIVE S&T PROJECTS"
Sub-topic of exercise: Extraction of useful components from ores
1. Innovative materials and cutting edge technological processes ultrahigh-power laser sources ☐ intelligent materials and nanomaterials ☐ quantum optics ☐ **2. Environmental research and climatic change**

Please send this form back to e-mail uni@prm.uran.ru before 18.01.2011.

biodiversity and ecophysiology of natural ecosystems ■ climate change in the artic and subartic regions ☐ Material sciences connected with energy convergion and storage ☐ **3. Research on serious human health problems** viral infections: HIV and Hepatitis ☐ auto-immune diseases ☐ neurodegenerative diseases ☐ **4. Contemporary socio-economic studies** Social security systems and welfare state (in the context of globalization) ☐ Labour, labour market, and employment ☐ Transformation of the educational system ☐
Areas of activity *(Free keywords)*

PROJECT IDEA(S)	
Short description of project	**Novel collectors for extraction of useful components from various ores and man-caused wastes.** N,O-containing flotation reagents from hydrazide and N-etoxyamine classes have been designed. Objects of flotation technology: sludge of potassium and other ores, sulfides and oxides of non-ferrous metals (Cu, Zn, Mo and others), KCl from potassium ores, dead catalysts. Advantages of these collectors are: high selectivity, simple synthesis, lower toxicity as compared with traditionally used collectors.
Description of scientific expertise offered	During the research work, 4 articles have been published, 4 inventions patented in the RF.
Description of technical expertise offered	Reagents have been tested on various types of Ural ores: sulfur ores with fine distribution of Cu and Zn sulfides, on oxidized Cu-Fe-vanadium and potassium ores.
Description of requested partner scientific expertise	Research institutions of adequate profile
Description of requested partner technical expertise	Ore mining and processing enterprises, non-ferrous metallurgy enterprises.

PARTNERS	
Partners' names, organizations and addresses	To be learned yet

This event is funded by the Seventh Framework Programme, European Commission

ERA.Net RUS

SEVENTH FRAMEWORK PROGRAMME

28 February 2011, Ekaterinburg, Brokerage Event
ERA.Net-RUS Pilot Joint Call
For Collaborative S&T Projects

PROFILE FORM

PARTICIPANT			
Gender	+ ☐ Mr	☐ Ms	Title Prof.
First name	Anatoly		
Last name	Rinkevich		
Position	Deputy director		

ORGANISATION DETAILS				
Organisation name	Institute of Metal Physics Ural Branch of RAS			
Street *	S.Kovalevskaya			
ZIP * 620990	City * Ekaterinburg		Country * Russia	
Phone * +7 343 374 02 30		Fax +7 343 374 52 44		
Email * physics@imp.uran.ru		Web http://www.imp.uran.ru		
Employees	☐ 1-10	☐ 11 - 50	☐ 51 - 250	☐ 250 + +
Organisation type	☐ Higher Education Institution	_+☐ Research Institution	☐ Industry	☐ SME ☐ other
Department	Nondestructive Testing			
Short description of your company or organization	See Web-site			

TOPICS OF INTEREST REGARDING THE CALL IN "COLLABORATIVE S&T PROJECTS"
Sub-topic of exercise
1. Innovative materials and cutting edge technological processes ultrahigh-power laser sources ☐ intelligent materials and nanomaterials ☐ + quantum optics ☐ **2. Environmental research and climatic change** biodiversity and ecophysiology of natural ecosystems ☐

climate change in the artic and subartic regions ☐ Material sciences connected with energy convergion and storage ☐ + **3. Research on serious human health problems** viral infections: HIV and Hepatitis ☐ auto-immune diseases ☐ neurodegenerative diseases ☐ **4. Contemporary socio-economic studies** Social security systems and welfare state (in the context of globalization) ☐ Labour, labour market, and employment ☐ Transformation of the educational system ☐
Areas of activity *(Free keywords)*

PROJECT IDEA(S)	
Short description of project	Metamaterials and their physical properties as well as application in microwave and mm-wavelength electronics
Description of scientific expertise offered	Investigation of resonant phenomena with electromagnetic waves: magnetic resonance and antiresonance. Properties of double left-hand media on microwaves.
Description of technical expertise offered	The possibility to produce the samples of metal-dielectric nanosystems containing metallic of ferromagnetic nanoparticles. The methods of electromagnetic measurements of physical properties of these materials.
Description of requested partner scientific expertise	Interest to metamaterials and unusual electromagnetic properties of left-hand materials.
Description of requested partner technical expertise	Experimental facilities of scanning microscopy and mm- and submm-wavelength network analyzer measurements.
PARTNERS	
Partners' names, organizations and addresses	

This event is funded by the Seventh Framework Programme, European Commission

ERA.Net RUS

SEVENTH FRAMEWORK PROGRAMME

28 February 2011, Ekaterinburg, Brokerage Event
ERA.Net-RUS Pilot Joint Call
For Collaborative S&T Projects

PROFILE FORM

PARTICIPANT			
Gender	v ☐ Mr	☐ Ms	Title
First name	Gennady		
Last name	Rusinov		
Position			

ORGANISATION DETAILS				
Organisation name Institute of Organic Synthesis RA S				
Street * S.Kovalevskoy st. 22				
ZIP *	City * Ekaterinburg		Country * Russia	
Phone * +7-3433745944		Fax +7-3433683058		
Email * rusinov@ios.uran.ru		Web		
Employees	☐ 1-10	v ☐ 11 - 50	☐ 51 - 250	☐ 250 +
Organisation type	☐ Higher Education Institution	v ☐ Research Institution	☐ Industry	☐ SME ☐ other
Department	Laboratory of heterocyclic compounds			
Short description of your company or organization	Studying of the nature of chemical bonds and reaction ability of organic compounds, of mechanisms and stereochemistry of reactions, and also of structure and properties of chemical substances; development of new methodology of organic synthesis, including biologically active substances, first of all among heterocyclic compounds .			

TOPICS OF INTEREST REGARDING THE CALL IN "COLLABORATIVE S&T PROJECTS"
Sub-topic of exercise
1. Innovative materials and cutting edge technological processes ultrahigh-power laser sources ☐v intelligent materials and nanomaterials ☐v quantum optics ☐ **2. Environmental research and climatic change** biodiversity and ecophysiology of natural ecosystems ☐

climate change in the artic and subartic regions ☐ Material sciences connected with energy convergion and storage ☐v **3. Research on serious human health problems** viral infections: HIV and Hepatitis ☐v auto-immune diseases ☐ neurodegenerative diseases ☐ **4. Contemporary socio-economic studies** Social security systems and welfare state (in the context of globalization) ☐ Labour, labour market, and employment ☐ Transformation of the educational system ☐
Areas of activity *(Free keywords)*

PROJECT IDEA(S)	
Short description of project	
Description of scientific expertise offered	
Description of technical expertise offered	
Description of requested partner scientific expertise	
Description of requested partner technical expertise	
PARTNERS	
Partners' names, organizations and addresses	

This event is funded by the Seventh Framework Programme, European Commission

ERA.Net RUS

SEVENTH FRAMEWORK PROGRAMME

28 February 2011, Ekaterinburg, Brokerage Event
ERA.Net-RUS Pilot Joint Call
For Collaborative S&T Projects

PROFILE FORM

PARTICIPANT			
Gender	☐ Mr		Title **doctor of science**
First name	**Ryabinin**		
Last name	**Victor**		
Position	**geo-ecology group leader**		

ORGANISATION DETAILS			
Organisation name: **Institute of Geology and Geochemistry**			
Street * : **Pochtovy pereulok, 7**			
ZIP * **620151**	City * **Yekaterinburg**		Country * **Russia**
Phone * **(343) 371-19- 97**		Fax **(343) 371-52-52**	
Email * **e-mail: root@igg.e-burg.su,** Koroteev@igg.uran.ru		Web **http://www.igg.uran.ru/**	
Employees		☐ 51 - 250	
Organisation type	☐ Higher Education Institution ■ Research Institution ☐ Industry ☐ SME ☐ other		
Department	**Ural Branch of the Russian Academy of Sciences**		
Short description of your company or organization	**Institute of Geology and Geochemistry is running science research in the field of geology and geochemistry since 1939 year. The main subjects of research are: geodynamic, ore deposits structure, mineralogy and ore generating process chemistry, as well as igneous, volcanic and sedimentary rocks genesis, mineralogy and chemistry.**		

TOPICS OF INTEREST REGARDING THE CALL IN "COLLABORATIVE S&T PROJECTS"	
Sub-topic of exercise	Copper slag, soils
1. Innovative materials and cutting edge technological processes ultrahigh-power laser sources ☐ intelligent materials and nanomaterials ☐ quantum optics ☐ **2. Environmental research and climatic change** biodiversity and ecophysiology of natural ecosystems ■	

climate change in the artic and subartic regions ☐
Material sciences connected with energy convergion and storage ☐

3. Research on serious human health problems
viral infections: HIV and Hepatitis ☐
auto-immune diseases ☐
neurodegenerative diseases ☐

4. Contemporary socio-economic studies
Social security systems and welfare state (in the context of globalization) ☐
Labour, labour market, and employment ☐
Transformation of the educational system ☐

Areas of activity *(Free keywords)*

PROJECT IDEA(S)	
Short description of project	The general conception is: - Industrial wastes are several natural components concentrated commonly, and it can be recycled back in nature with minor negative effects if the correct way is found; - Copper slag and volcanic rocks have some essential similarities, and such slag can bring positive effects to soils, like volcano does it in nature actually (Italy, Japan, etc). Pilot project running: Several dose of Copper slag was been injected to the some of the Urals region soil type, and the grass and soil levels chemical composition changes are monitored for several years. Two of four-year long experiments (two different probe variants) show: - the slag product used is not resistant in the soils conditions and all the slag chemical elements move out of controlled point rapidly; - copper slag is the very effective source of the needing minor elements for depleted soils; - some positive changes of agrochemical conditions in soils were noticed. - there were no any heavy metal excess in the monitored grass;
Description of scientific expertise offered	In the way of the project running there were 15 articles published and 5 reports presented for different conferences in Russia.
Description of technical expertise offered	An experimental of plants growth in a glass hose showed good results for several plant species.
Description of requested partner scientific expertise	Agriculture and soil scientific investigators.
Description of requested partner technical expertise	

PARTNERS	

Partners' names, organizations and addresses	

This event is funded by the Seventh Framework Programme, European Commission

ERA.Net RUS

SEVENTH FRAMEWORK PROGRAMME

28 February 2011, Ekaterinburg, Brokerage Event
ERA.Net-RUS Pilot Joint Call
For Collaborative S&T Projects

PROFILE FORM

PARTICIPANT			
Gender	☐ Mr		Title Corresponding member of RAS, Professor
First name	Nickolay		
Last name	Smirnov		
Position	Chief Scientific Researcher, laboratory of History Ecology		

ORGANISATION DETAILS			
Organisation name	Institute of Plant and Animal Ecology Ural Branch of Russian Academy of Sciences (IPAE UB RAS)		
Street *	8 Marta St., 202		
ZIP * 620144	City * Yekaterinburg		Country * Russian Federation
Phone * +7(343)2103857		Fax +7(343)2608256	
Email * nsmirnov@ipae.uran.ru		Web www.ipae.uran.ru	
Employees			☒ 250 +
Organisation type	☐ Higher Education Institution	■ Research Institution	☐ Industry ☐ SME ☐ other
Department	Laboratory of History Ecology IPAE UB RAS		
Short description of your company or organization	The main goal of the Institute is the realization of researches on the regularities of functioning, evolution and stability of biological systems on population, community and ecosystem levels in natural and anthropogenic changed environments of the Urals and adjacent territories (Northern Eurasia). The Institute carries out studies on the following theoretical problems: biota evolution regularities; population biology; biota anthropogenic transformation; biological diversity. A high degree of academic qualification and experience in the field allow the staff to tackle problems of applied ecology: rational nature management; ecological regulation; bio-indication; ecotoxicology; radioecology; environmental impact assessment and ecological prediction. Scientific structural department of the IPAE UB RAS consist of 13 laboratories. Collective of the Institute counts 294 collaborators including 193 scientific researchers: 1 academician of RAS; 1 corresponding member of RAS; 31 Doctors of Sciences and 103 Candidates of Sciences (PhD). “The Russian Journal of Ecology” is produced in the Institute.		

TOPICS OF INTEREST REGARDING THE CALL IN “COLLABORATIVE S&T PROJECTS”

Sub-topic of exercise
2. Environmental research and climatic change climate change in the artic and subartic regions
Areas of activity *(Free keywords)* Dynamics of arctic and subarctic ecosystems, Holocene, Pleistocene, ancient DNA, stable isotopes, fossil remains

PROJECT IDEA(S)	
Short description of project	The project "Long-term dynamics of composition and structure of terrestrial biota from the Polar Ural, Yamal and Gydan Peninsula as response to climatic changes in late Pleistocene and Holocene" will be studied on the base of collecting and investigating paleontological material. It is contains fossil bones, remains of frozen soft tissues, wool of ancient mammals (mammoths and others), macro- and micro remains of plants and chitin of insects from loose deposits of Late Quaternary and Holocene time. Loose deposits from karst cavities would be dig out in the Polar Urals territory. Loose deposits of the shore outcrops of rivers and lakes would be dig out on Yamal and Gydan Peninsula. The comparison of uneven-aged materials will allow mark out the periods of ecological crisis in the past and describe extent and direction of transformation of different biota components and estimate the degree of its stability under the influence of global and regional climatic changes. One of the main tasks of the project is to appraise the degree of transformation of morphological and genetic properties of the different taxon species on the boundary of Pleistocene and Holocene.
Description of scientific expertise offered	Scientific collective from IPAE has a big reserve of upturned remains of animals and plants from Yamal and Gydan Peninsula and from Polar Urals (few dozens of sites), including excavations of frozen bulks of mammoths. The results of these investigations are published in series of journal articles and monographs. Laboratory analysis of bone and other remains conducted with the use of physical and chemical methods in the laboratory of the Institute of Geology and Geochemistry (Ural Branch Russian Academy of Sciences) under the direction of Corresponding member of RAS S.L. Votyakov. Investigations of mammals ancient DNA took place in the cooperation with European colleagues.
Description of technical expertise offered	Executors from the Institute of Geology and Geochemistry, Ural Branch of the Russian Academy of Sciences, possess a series of equipment to investigate elementary composition and physicochemical properties of bones and other organic remains of animals and plants. Thus atomic force and scanning electron microscopy (microanalyzer Cameca SX 100) were used already; for investigations of phase composition and thermal properties there were used roentgen-phase (DRON-3) and thermal (Diamond TG-DTA) methods; macro- and micro-elementary composition of bones were determined by methods of electron probe analysis (EZMA, Cameca SX 100) and trace element mass-spectrometry with inductively coupled plasma (ISP-MS, ELAN9000); infrared spectroscopy (Continuum) also were used.
Description of requested partner scientific expertise	For long-term composition changes of terrestrial arctic biota components during Late Pleistocene-Holocene period it is needed to investigate the dynamics of genetic structure of different species on the base of ancient-DNA data received from fossils. To estimate the degree of ecological stability of different mammal species it is important to receive a series of stable carbon, nitrogen and oxygen data from fossils.
Description of requested partner technical expertise	It is necessary to receive a series of ^{14}C and AMS dating results from fossil organic materials for exact conclusions of the project.

This event is funded by the Seventh Framework Programme, European Commission

PARTNERS	
Partners' names, organizations and addresses	S. Prost, M. Knapp, J. Flemmig, M. Stiller, M. Hofreiter Research Group Molecular Ecology, Max-Planck Institute for Evolutionary Anthropology, Leipzig, Germany Institute for Medical Physics and Biophysics, Medical Department, University of Leipzig, Leipzig, Germany A.K. Hufthammer - University of Bergen, Natural History Collections, Bergen, Norway Th. van Kolfschoten - Prof., Faculty of Archaeology, Leiden University, Leiden, The Netherlands

This event is funded by the Seventh Framework Programme, European Commission

ERA.Net RUS

SEVENTH FRAMEWORK PROGRAMME

28 February 2011, Ekaterinburg, Brokerage Event
ERA.Net-RUS Pilot Joint Call
For Collaborative S&T Projects

PROFILE FORM

PARTICIPANT			
Gender	☐ Mr		Title Corresponding Member of RAS
First name	Vladimir		
Last name	Vasin		
Position	Head of Department		

ORGANISATION DETAILS				
Institute for Mathematics and Mechanics UB RAS				
S.Kovalevskaya Sreet				
620990	Ekaterinburg			Russia
Phone: +7(343)3743292			Fax: +7(343)3743292	
Email : vasin@imm.uran.ru			Web: http://www.imm.uran.ru	
Employees				☐ 250 +
Organisation type	☐ Research Institution			
Department	Department of Ill-Posed Problems and Applications			
Short description of your company or organization				

TOPICS OF INTEREST REGARDING THE CALL IN "COLLABORATIVE S&T PROJECTS"
Sub-topic of exercise
2. Environmental research and climatic change climate change in the artic and subartic regions ☐

This event is funded by the Seventh Framework Programme, European Commission

ERA.Net RUS

Areas of activity *(Free keywords)*	*Inverse problems, sounding of atmosphere, regular algorithms, retrieval of concentration of greenhouse gases from IR spectra*

PROJECT IDEA(S)	
Short description of project	**Directions of joint researches of IMM and USU in field of environmental and climate change** Development of methods and algorithms to solve inverse problem concerning retrieval of vertical profile of concentration of atmospheric trace gases from high resolution IR spectra of the atmosphere measured by modern satellite and ground based spectrometers. Application of the methods and algorithms to process Japanese GOSAT (Greenhouse gases Observing SATellite) instrument data in order to retrieve CH_4 and CO_2 in the atmosphere over pristine peatland and subarctic zone of Western Siberia. Determination of seasonal variations of the greenhouse gases content in the atmosphere. The Ural State University (USU) operates the Kourovka Astronomical Observatory (KAO).The KAO was established in 1965 for research in the field of Space physics and mechanics, physics of stars, Sun and planets. The Ural Atmospheric Fourier Station (UAFS) is a new part of KAO aiming for the observation of the Earth's atmosphere. The UAFS includes a ground based high resolution commercial Bruker FTIR spectrometer together with an automated solar tracker to measure absorption spectra from the earth atmosphere using the sun as light source and retrieve trace gas concentrations of up to 20 trace gases in the atmosphere. The FTIR was installed in 2008 and is running since July 2009, http://remotesensing.ru/fts_sta.html . The UAFS also includes an aerosol spectrometer of AERONET http://aeronet.gsfc.nasa.gov/new_web/photo_db/Yekaterinburg.html which is in operation since 2004 and modern meteorological station, METEO-2 automated ultrasonic system (www.iao.ru/en/resources/equip/dev/meteo2/) The UAFS is intended for measurements of greenhouse gases (mainly

	CH_4 and CO_2), aerosols and other background chemistry compounds including water vapour isotopes and HDO to H_2O ratio in the atmosphere in frame of the NDACC and TCCON. The data will be used to investigate changes of the earth atmosphere and for the calibration/validation of satellite measurements, like the Japanese GOSAT instrument and others. The Ural State University operates the infrastructure of UAFS and uses its data in cooperation with Institute of Industrial Ecology of Ural Branch of Russian Academy of Sciences (IIE UB RAS) and Institute of Mathematical and Mechanics Ural Branch of Russian Academy of Sciences (IMM UB RAS).
Description of scientific expertise offered	
Description of technical expertise offered	
Description of requested partner scientific expertise	
Description of requested partner technical expertise	
PARTNERS	
Partners' names, organizations and addresses	

This event is funded by the Seventh Framework Programme, European Commission

ERA.Net RUS

SEVENTH FRAMEWORK PROGRAMME

28 February 2011, Ekaterinburg, Brokerage Event
ERA.Net-RUS Pilot Joint Call
For Collaborative S&T Projects

PROFILE FORM

PARTICIPANT			
Gender	☐ Mr	☐ Ms	Title PhD
First name	Pavel		
Last name	Velmovsky		
Position	The deputy director on researches		

ORGANISATION DETAILS				
Organisation name	Institute of Steppe of Ural Branch of Russian Academy of Sciences			
Street *	Pionerskaya			
ZIP * 460000	City * Orenburg		Country * Russian Federation	
Phone * +7 3532 776247		Fax +7 3532 774432		
Email * orensteppe@mail.ru		Web **www.orensteppe.ru**		
Employees	☐ 1-10	☐ 11 - 50	☑ 51 - 250	☐ 250 +
Organisation type	☐ Higher Education Institution	☒ Research Institution	☐ Industry	☐ SME ☐ other
Department	Ural Branch of Russian Academy of Sciences			
Short description of your company or organization	The institute of steppe of the Ural branch of the Russian Academy of Sciences functions in Orenburg with 1.01.1997. It is created as structural division of the Ural branch for the purpose of complex studying of steppes of Northern Eurasia as uniform geographical and historical and cultural space. The Scientifically-methodical management of Institute carry out the Branch of sciences about the Earth of the Russian Academy of Sciences and the Incorporated academic council on sciences about the Earth of the Russian Academy of Sciences.			

TOPICS OF INTEREST REGARDING THE CALL IN "COLLABORATIVE S&T PROJECTS"
Sub-topic of exercise
1. Innovative materials and cutting edge technological processes ultrahigh-power laser sources ☐ intelligent materials and nanomaterials ☐ quantum optics ☐ **2. Environmental research and climatic change** biodiversity and ecophysiology of natural ecosystems ☒

climate change in the artic and subartic regions ☐
Material sciences connected with energy convergion and storage ☐

3. Research on serious human health problems
viral infections: HIV and Hepatitis ☐
auto-immune diseases ☐
neurodegenerative diseases ☐

4. Contemporary socio-economic studies
Social security systems and welfare state (in the context of globalization) ☒
Labour, labour market, and employment ☐
Transformation of the educational system ☐

Areas of activity *(Free keywords)*
Directions of scientific activity of Institute of steppe UrO of the Russian Academy of Sciences:
- Protection of landscapes and rational use of natural resources;
- Pollution and ecological risks, the analysis and risk management;
- Modifications of natural systems and their ecological analysis;
- Droughty ecosystems and risk of their desertification;
- A role of a biological variety in ecosystem functioning;
- Change and erosion of soils under the influence of external factors;
- Water resources, the analysis of their condition;
- Stability of natural complexes and stability factors;
- Preserving of a natural heritage;
- Development of strategy of a sustainable development of territories;
- Complex studying of transboundary territories;
- Territory socio-economic analysis;
etc.

PROJECT IDEA(S)	
Short description of project	**Expertise offered:** - The complex analysis of factors of differentiation of modern landscapes of a steppe zone and adjacent Territories (including definition of parameters of a drain, a deflation and desertification); - Working out of methodological approaches and an estimation of transformation of the natural complexes which are under the influence of various anthropogenous factors; - Monitoring of components of landscape sphere and working out of a cadastre of valuable soil and vegetative objects, definition of scientifically-legal bases of their protection; - Working out of strategy of maintenance of ecological stability of steppe, semidesertic and forest-steppe regions; - The decision of ecology-geographical problems of rationalization of wildlife management including a substantiation of optimum structure of landscape-ground fund and modes of steppe wildlife management; - The analysis of aspects of social and economic differentiation of regions, working out and optimization of indicators of a sustainable development of territory.
Description of scientific expertise offered	

Description of technical expertise offered	
Description of requested partner scientific expertise	
Description of requested partner technical expertise	
PARTNERS	
Partners' names, organizations and addresses	

This event is funded by the Seventh Framework Programme, European Commission

ERA.Net RUS

SEVENTH FRAMEWORK PROGRAMME

28 February 2011, Ekaterinburg, Brokerage Event
ERA.Net-RUS Pilot Joint Call
For Collaborative S&T Projects

PROFILE FORM

PARTICIPANT			
Gender	☐ Mr		Title Dr., Scientific researcher
First name	Vladimir		
Last name	Vershinin		
Position	Head of the laboratory of Functional Ecology of Terrestrial Animals		

ORGANISATION DETAILS			
Organiation name Institute of Plant and Animal Ecology Ural Branch of Russian Academy of Sciences (IPAE UB RAS)			
Street * 8 Marta St., 202			
ZIP * 620144	City * Yekaterinburg		Country * Russian Federation
Phone * +7(343)2103858		Fax +7(343)2608256	
Email * wow@ipae.uran.ru		Web www.ipae.uran.ru	
Employees			☒ 250 +
Organisation type	☐ Higher Education Institution	■ Research Institution	☐ Industry ☐ SME ☐ other
Department	Laboratory of Functional Ecology of Terrestrial Animals IPAE UB RAS		
Short description of your company or organization	The main goal of the Institute is the realization of researches on the regularities of functioning, evolution and stability of biological systems on population, community and ecosystem levels in natural and anthropogenic changed environments of the Urals and adjacent territories (Northern Eurasia). The Institute carries out studies on the following theoretical problems: biota evolution regularities; population biology; biota anthropogenic transformation; biological diversity. A high degree of academic qualification and experience in the field allow the staff to tackle problems of applied ecology: rational nature management; ecological regulation; bio-indication; ecotoxicology; radioecology; environmental impact assessment and ecological prediction. Scientific structural department of the IPAE UB RAS consist of 13 laboratories. Collective of the Institute counts 294 collaborators including 193 scientific researchers: 1 academician of RAS; 1 corresponding member of RAS; 31 Doctors of Sciences and 103 Candidates of Sciences (PhD). “The Russian Journal of Ecology” is produced in the Institute.		

TOPICS OF INTEREST REGARDING THE CALL IN “COLLABORATIVE S&T PROJECTS”
Sub-topic of exercise

This event is funded by the Seventh Framework Programme, European Commission

ERA.Net RUS

2. Environmental research and climatic change biodiversity and ecophysiology of natural ecosystems ■
Areas of activity *(Free keywords)* functional ecology, ecophysiology, amphibians, reptiles, small mammals, soil invertebrates, clicking beetles, parasites communities

PROJECT IDEA(S)	
Short description of project	Functional aspects of urban ecology of terrestrial animals as indicator of potential risks of communities' transformation and indicators environmental health . Comparative investigations of functional specific of natural and human transformed ecosystems on the level of communities and population's structure, population ecophysiology (haemopoesis, skin penetration etc.) under effect of urbanization.
Description of scientific expertise offered	Scientific collective with long term experience of research in the field of urban ecology and ecophysiology of amphibian in the Urals.
Description of technical expertise offered	Microscope Nikon 80i, polarograph ON-102, technique for sodium skin penetration investigations.
Description of requested partner scientific expertise	Experience of complex scientific investigations in the field of urban ecology.
Description of requested partner technical expertise	Scientific equipment for ecophysiology and zoological field research.
PARTNERS	
Partners' names, organizations and addresses	Prof. Dr. Jari Niemela, dean, Department of Biological and Environmental Sciences, Faculty of Biosciences, P.O. Box 65 FIN-00014 University of Helsinki, Finland.

This event is funded by the Seventh Framework Programme, European Commission

ERA.Net RUS

SEVENTH FRAMEWORK PROGRAMME

28 February 2011, Ekaterinburg, Brokerage Event
ERA.Net-RUS Pilot Joint Call
For Collaborative S&T Projects

PROFILE FORM

PARTICIPANT				
Gender	☒ Mr	☐ Ms	Title	Dr. Biol.Sci, Professor
First name	Vladimir			
Last name	Volodin			
Position	Head of the Laboratory of Biochemistry and Biotechnology			

ORGANISATION DETAILS				
Organisation name	Institute of Biology, Komi Science Centre, Ural Division, Russian Academy of Sciences			
Street *	Kommunisticheskaya			
ZIP * 167982	City * Syktyvkar		Country * Russia	
Phone * +7(8212)431431		Fax +7(8212)431431		
Email * volodin@ib.komisc.ru		Web http://ib.komisc.ru		
Employees	☐ 1-10	☐ 11 - 50	☐ 51 - 250	☐ 250 +
Organisation type	☐ Higher Education Institution	☐ **+Research Institution**	☐ Industry	☐ SME ☐ other
Department	Laboratory of Biochemistry and Biotechnology			
Short description of your company or organization	Insitute of Biology is leading scientific organization that conducts ecological and biological investigations on the large territory of the North-East Russia. The main dirctions are i) study of biodiversity, stability and productivity of taiga and tundra ecosystems; ii) biological effects of ionizing radiation on the living organisms and problems of ecological genetics; iii) plant adapation in the conditions of cold climate; iv) **biologically active compounds of plants and plant cell cultures, the development of biotechnology of their production and creation of new type of adaptogenic preparations and nutritional supplememts for the improvement on people's life in the North;** v) development of the methods of ecological monitoring and bio-indication and creation of cadasters and databases on biological resources using remote sencing methods and GIS-technologies.			

TOPICS OF INTEREST REGARDING THE CALL IN "COLLABORATIVE S&T PROJECTS"
Sub-topic of exercise

This event is funded by the Seventh Framework Programme, European Commission

ERA.Net RUS

1. Innovative materials and cutting edge technological processes ultrahigh-power laser sources ☐ intelligent materials and nanomaterials ☐ quantum optics ☐ **2. Environmental research and climatic change** biodiversity and ecophysiology of natural ecosystems ☐+ climate change in the artic and subartic regions ☐ Material sciences connected with energy convergion and storage ☐ **3. Research on serious human health problems** viral infections: HIV and Hepatitis ☐ auto-immune diseases ☐ neurodegenerative diseases ☐ **4. Contemporary socio-economic studies** Social security systems and welfare state (in the context of globalization) ☐ Labour, labour market, and employment ☐ Transformation of the educational system ☐
Areas of activity *(Free keywords)*

PROJECT IDEA(S)	
Short description of project	Plants screening of Northern floras for the presence of biologically active compounds (mainly phytoecdysteroids and steroidal and triterpenoid glycosides), estimation of the productivity and biological stock of valuable plants in natural using remote sencing methods and GIS-technologies, plant introduction into field and cell cultures and development of biotechnology of their production and creation of new type of adaptogenic preparations and nutritional supplememts for the improvement on people's life in the North
Description of scientific expertise offered	Some prospective plants species – ecdysteroid producers are revealed. The technology of the production of ecdysteroids from plant raw material and cell culture are developed and patented. A number of ecdysteroid-containing nutritional supplements for the regulation of carbohydrate and lipid metabolism and also for the increasing of working capacity of people in the North are developed.
Description of technical expertise offered	Laboratory of biochemistry and biotechnology has the following equipment: i) mass-spectrometer and HPLC for analysis and isolation of natural compounds from plants and cell cultures (alkaloids, triterpenoid and steroidal glycosides, ecdysteroids) ii) DNA-analyzer for molecular-phylogenetic studies and distribution of group of secondary metabolites in selected plant taxons iii) equipment for cultivation of plant cell cultures iv) experimental production of phytoecdysteroids and nutritional supplements them containing from plant raw materials v) vivarium of laboratory animals, equipment and methods for pre-clinical studies of the new adaptogenic nutritional supplements.

Description of requested partner scientific expertise	We need partner with scientific expertise for pharmacological studies of new natural preparations, nutritional supplements and functional foods of adaptogenic and stress-protective action and also for the treatment and prevention of neurodegenerative diseases.
Description of requested partner technical expertise	
	We need partner with needed experimental base for pre-clinical and if necessary clinical studies organized on the level of international standards.
PARTNERS	
Partners' names, organizations and addresses	The name of partner will be concretized bit later. It would be desirable if partner if from Norway because first of all we develop adaptogenic nutritional to improve people's life in the North. We have some experience in co-operation with Finish and Norwegian organization in the frame of the International Program of Barents Secretariat.

This event is funded by the Seventh Framework Programme, European Commission

ERA.Net RUS

SEVENTH FRAMEWORK PROGRAMME

ERA.Net-RUS Pilot Joint Call
For Collaborative S&T Projects

PROFILE FORM

PARTICIPANT			
Gender	☐ Mr	☐ Ms	Title Dr.
First name	Michael		
Last name	Bunge		
Position	Senior Scientist		

ORGANISATION DETAILS				
Organisation name	University of Giessen			
Street *	Heinrich-Buff-Ring 26-32			
ZIP * 35392	City * Giessen		Country * Germany	
Phone * +49-(0)641-99-37354		Fax		
Email * michael.bunge@agrar.uni-giessen.de		Web		
☑ CheckBox1 Employees	☐ 1-10	☐ 11 - 50	☐ 51 - 250	☉ 250 +
Organisation type	☒ Higher Education Institution	☒ Research Institution	☐ Industry	☐ SME ☐ other
Department	Institute of Applied Microbiology Research Center for BioSystems, Land Use, and Nutrition (IFZ)			
Short description of your company or organization	University			

TOPICS OF INTEREST REGARDING THE CALL IN "COLLABORATIVE S&T PROJECTS"
Sub-topic of exercise
1. Innovative materials and cutting edge technological processes ultrahigh-power laser sources ☐ intelligent materials and nanomaterials ☒ quantum optics ☐ **2. Environmental research and climatic change** biodiversity and ecophysiology of natural ecosystems ☒ climate change in the artic and subartic regions ☐

This event is funded by the Seventh Framework Programme, European Commission

ERA.Net RUS

Material sciences connected with energy convergion and storage ☒ **3. Research on serious human health problems** viral infections: HIV and Hepatitis ☐ auto-immune diseases ☐ neurodegenerative diseases ☐ **4. Contemporary socio-economic studies** Social security systems and welfare state (in the context of globalization) ☐ Labour, labour market, and employment ☐ Transformation of the educational system ☐
Areas of activity *(Free keywords)* Nano(bio)technology, Environmental Microbiology, Microbial Ecology, Material Science

PROJECT IDEA(S)	
Short description of project	Metal nanocatalysts can be synthesized on microbial interfaces. Such biologically produced nanoparticles may exhibit advantageous catalytic or antimicrobial properties compared to their chemically synthesized counterparts. We have recently reported on the reductive formation of noble metal nanocatalysts on microbial interfaces and have demonstrated their superior catalytic properties in a number of advanced reactions in synthetic organic chemistry including Suzuki-Miyaura and Mizoroki-Heck reactions. Our acquired expertise for the synthesis and characterization of nanosized noble metal catalysts afford the opportunity to test them in alternative catalytic assays and will form the basis for design and manufacturing of further exceptional metal nanoparticles on microbial surfaces, including metal hybrids.
Description of scientific expertise offered	The applicant is uniquely positioned to establish or support an internationally leading research project on the biological production of industrially important metal nanoparticles, their application for catalyzing transformation reactions, as well as studying microbe-nanoparticle interactions. Michael Bunge is an environmental microbiologist who has received his Ph.D. in 2004 from the University of Halle, Germany. After a postdoctoral period at ETH Zurich, Switzerland, and the Interdisciplinary Nanoscience Centre (iNANO) at Aarhus University, Denmark, he is now conducting and leading research in the group of *Nanobiotechnology & Bioremediation* at the Institute of Applied Microbiology at Giessen University. He has major expertise in the field of microbial transformation of environmentally relevant organohalogen compounds (dioxins, PCBs, chlorobenzenes, chlorinated ethenes) in highly organohalogen-polluted aquatic sediments, aquifers at hotspot-contaminated sites, and reductively dehalogenating microbial cultures. Michael Bunge and his collaborators have published extensively on cultures containing

	inimitably specialized bacteria that use organohalogen compounds for energy conservation in a process called dehalorespiration (*e.g.*, by *Dehalococcoides* spp.). During a guest scientist stay at Innsbruck University, Austria, the applicant has been involved in the development and exploitation of innovative PTR-MS (proton transfer reaction mass spectrometry) techniques for ultrasensitive *real-time* detection of microorganisms by analyzing the dynamic emission patterns of specific volatile organic compounds (VOCs). Michael Bunge and his partners have successfully completed multidisciplinary nanobiotechnology and nanotoxicology projects, among others they have worked on the microbial recycling of Pd for catalyzing advanced reactions in synthetic organic chemistry. This work has been recently extended to simultaneous recovery and precious metals nanoparticle formation from industrial waste. The applicants have extensively studied the effects of engineered metal nanoparticles (Ag, Pd, Zn, Ce, Cu, Ti, and their oxides) on environmentally important microorganisms.
Description of technical expertise offered	The techniques available at JLU comprise standard and advanced microbiological methods for cultivation and diagnostics of microorganisms (including novel cultivation techniques for anaerobic and fastidious bacteria), techniques in analytical chemistry (RDA, GC-MS, IR-GC-MS, HPLC, HPLC-MS, AAS, ICP-OES), molecularbiological methods (quantitative real-time PCR, DNA/RNA-fingerprinting [t-RFLP, SSCP, D/TGGE], microarrays, fluidic chips), advanced techniques in microscopy (*in situ* hybridization [FISH und CARD-FISH], epifluorescence microscopy, confocal laserscanning microscopy, electron microscopy).
Description of requested partner scientific expertise	
Description of requested partner technical expertise	
Potential partners (name, organisation, address …)	Justus Liebig University of Giessen, Germany, Research Centre for BioSystems, Land Use and Nutrition (IFZ), Rolf-Alexander Düring Tomsk Polytechnic University, Russia, Division of Nanomaterials and Nanotechnologies, Anna Yu. Godymchuk and Vladimir An University of Innsbruck, Austria, Institute for Ion Physics & Applied Physics, Atmospheric Chemistry and Indoor Air Chemistry, Armin Wisthaler

This event is funded by the Seventh Framework Programme, European Commission

ERA.Net RUS

SEVENTH FRAMEWORK PROGRAMME

ERA.Net-RUS Pilot Joint Call
For Collaborative S&T Projects

PROFILE FORM

PARTICIPANT			
Gender	☐ Mr	Ms	Title Dr. rer. nat. habil
First name	Tatjana		
Last name	Boettger		
Position	group leader		

ORGANISATION DETAILS				
Organisation name	Helmholtz Centre for Environmental Research – UFZ			
Street *	Theodor-Lieser-Str. 4			
ZIP * D-06120	City * Halle/Saale		Country * Germany	
Phone * +49 (0)345 5585227		Fax +49 (0)345 5585449		
Email * tatjana.boettger@ufz.de		Web www.ufz.de		
Employees	☐ 1-10	☐ 11 - 50	☐ 51 - 250	☒
Organisation type	☐ Higher Education Institution	☒ Research Institution	☐ Industry	☐ SME ☐ other
Department	Catchment Hydrology			
Short description of your company or organization	The Helmholtz Centre for Environmental Research - UFZ is part of in the Hermann von Helmholtz Association of German Research Centres (HGF) which is mainly devoted to environmental research. The Helmholtz Centre for Environmental Research has about 1000 employees and belongs to the leading environmental research centers in Europe. The research activities focus on environmental changes over very short and extremely long time spans, ranging from months to hundreds of thousands of years. The long-year expertise in paleoclimatology, ecology and climate impacts on ecological systems is contributed by the Research Group of Climate & Biotic Systems in Department of Catchment Hydrology.			

TOPICS OF INTEREST REGARDING THE CALL IN "COLLABORATIVE S&T PROJECTS"
Sub-topic of exercise
1. Innovative materials and cutting edge technological processes ultrahigh-power laser sources ☐ intelligent materials and nanomaterials ☐ quantum optics ☐ **2. Environmental research and climatic change** biodiversity and ecophysiology of natural ecosystems ☐

climate change in the artic and subartic regions ☒
Material sciences connected with energy convergion and storage ☐

3. Research on serious human health problems
viral infections: HIV and Hepatitis ☐
auto-immune diseases ☐
neurodegenerative diseases ☐

4. Contemporary socio-economic studies
Social security systems and welfare state (in the context of globalization) ☐
Labour, labour market, and employment ☐
Transformation of the educational system ☐

Areas of activity *(Free keywords)* palaeoclimatology, plant ecology, dendrochronology, dendroclimatology, lake sediments, tree physiology, palaeobotany, glaciology, moraine dating,

PROJECT IDEA(S)	
Short description of project	To cope with the consequences of man-induced recent climatic warming demands reliable quantitative information regarding the natural climate variability, response of landscape, vegetation and ecosystems to climatic changes and its influences on the quality of human habitat is essential. It is necessary to obtain appropriate data sets from carefully selected key regions, and to analyze these with modern methods. The knowledge of the natural climate variability of the last c. 1000 years allow to better evaluate the observed anthropogenic induced changes during the last 150 years (Recent Global Warming) on the background of the Late Holocene natural climatic trends, particularly the “Medieval Climate Anomaly” (IX-XII centuries). Additionally the assumption that carbon fixation may be accelerate through the ‘greening of the Tundra’ and increased tree growth induced by modern warming needs to be verified carefully, as recent studies question that observations. In this project we will focus on multi-proxy reconstructions of two key areas in the Arctic and Sub-Arctic: Kola peninsula, Solovetsky Archipelago, and in the Vologodsky region to study the regional sensitivity to climate change in the different areas along a north-south transect in the Northern European Russia. We plan to use a multi-proxy approach to reconstruct past climate variations and forest ecosystems dynamics from analyses of tree rings of living trees and sub-fossil wood (total ring width, latewood density, stable isotopes), as well as from various proxys from lake sediments and glacial moraines. Here we take advantage of a large body of experiences and previous work, resp. existing sample material. The advantage of the multi-proxy approach is to achieve various climatic parameters of different seasons from different proxies and in different ways. Additionally the strength of each proxy on different frequency bands can be used and can be combined. Moreover it is possible to cross-check the reliability of individual reconstructions as the different proxies are independent sources of paleoclimatic information. Using this approach we strive to assess reliable quantitative information of past climate on both, high and low frequency for three key regions in the North of the European Russia, which are underrepresented in existing data network. One goal is to improve the existing network of global climatic reconstructions to allow further model experiments and better validation of existing climate models. These experiments will help to better understand and predict dynamics of forest ecosystems under different climatic scenarios and in a changing climate.
Description of	The main objective of the work of Research Group of Climate & Biotic Systems in Department of Catchment Hydrology (UFZ) is to investigate the response of important plant species to

scientific expertise offered	recent climate and environmental changes. Furthermore we carry out palaeoclimatological studies of past warm intervals on the base of multi-proxy data from high-resolution natural terrestrial archives (lake sediments, tree-rings) in Central and in Eastern Europe. A special focus is on year-by-year climate reconstructions for the Last Millennium in Europe on the basis of multi-proxy signals of tree rings.
Description of technical expertise offered	The research group has long-year experiences in isotope analyses (carbon, oxygen, hydrogen, nitrogen) of tree rings, lake sediments and peat profiles and in constructing of long isotope tree-ring chronologies. We have technicians with long-year experience in isotope analyses and full necessary technical equipment for isotope analyses and tree-ring width measurements.
Description of requested partner scientific expertise	For success of this project we require partners with expertise in tree-ring width and density analysis, dating and construction of millennia-long tree-ring width and density chronologies; lacustrine sediments stratigraphy, sedimentology, geochemistry and palynology, analysis of diatoms, and macro-fossils; radiocarbon analyses, dating of moraines and reconstructions of glaciers' variations; regional climate modeling and forecast.
Description of requested partner technical expertise	We need to include in project a laboratory to process tree ring width and density measurements, lacustrine sedimentology, geochemistry, cartography, cosmogenic isotope and radiocarbon dating, dating of moraines and reconstructions of glaciers' dynamics,
Potential partners (name, organisation, address …)	Dipl. Agr.-Biol. Michael Friedrich Institute of Botany (210), Hohenheim University, Garbenstrasse 30, D-70593 Stuttgart, Germany tel. +49 (0)711 459-22196, fax +49 (0)711 459-23355, Michael.Friedrich@uni-hohenheim.de Dr. Jomelli Vincent Laboratoire de Geographie Physique, CNRS, UMR 8591 1 place A. Briand 92195 Meudon, France tel. 33 1 45 07 55 81, fax. 33 4 67 83 95 41 jomelli@cnrs-bellevue.fr Dr. Olga Solomina Institute of Geography Russian Academy of Sciences, 119017 Russia, Moscow, Staromonetny, 29 tel. +7 499 125 90 11, fax +7 495 959 0033 olgasolomina@yandex.ru Dr. Ivan Kalugin and Dr. Andrey Darin Institute of geology and mineralogy RAS Kaptiuga, 3, 630090, Novosibirsk, Russsia tel.: +7 (383) 333-26-00; fax: +7 (383) 333-27-92 ikalugin@uiggm.nsc.ru, avd@uiggm.nsc.ru

This event is funded by the Seventh Framework Programme, European Commission

ERA.Net RUS

SEVENTH FRAMEWORK PROGRAMME

ERA.Net-RUS Pilot Joint Call
For Collaborative S&T Projects

PROFILE FORM

PARTICIPANT			
Gender	☐ Mr	☐ Ms	Title
First name	Michael		
Last name	Friedrich		
Position	Group Leader Dendrochronology		

ORGANISATION DETAILS				
Organisation name	University of Hohenheim			
Street *	Schloss			
ZIP * D-70593	City * Stuttgart		Country * Germany	
Phone * 0049/(0)711/459-22196		Fax 0049/(0)711/459-22196		
Email * michael.friedrich@uni-hohenheim.de		Web uni-hohenheim.de\botanik		
Employees	☐ 1-10	☐ 11 - 50	☐ 51 - 250	☐ 250 + X
Organisation type	☒ Higher Education Institution	☒ Research Institution	☐ Industry	☐ SME ☐ other
Department	Institute of Botany			
Short description of your company or organization	8000 students attend the Hohenheim University to study in the fields of "General and Applied Natural Sciences“, "Agricultural Sciences" and "Economic and Social Sciences“. Research has a focus on application-orientation and inter-disciplinarity and is internationally-orientated in natural sciences, agricultural science and economic and social sciences. Large collaborative research centres and research institutes in Natural Sciences, Agriculatural Sciences, Economic and Social Sciences, research groups from the German Research Association (DFG) in the broader field of Life Science are hosted at Hohenheim. Hohenheim university got a high percentage of third-party funding in the University's research budget is evidence of the high level of scientific research and the involvement of Hohenheim scientists. Hohenheim host the ‘Eastern Europe Centre’ for research, teaching, advanced training to facilitate cooperation with scientific institutions in Central and Eastern European countries and to coordinate cross country interdisciplinary projects. The Institute of Botany at Hohenheim University host one of the largest collection of tree-ring samples and the world- wide longest tree-ring chronology.			

TOPICS OF INTEREST REGARDING THE CALL IN “COLLABORATIVE S&T PROJECTS”
Sub-topic of exercise

This event is funded by the Seventh Framework Programme, European Commission

ERA.Net RUS

1. Innovative materials and cutting edge technological processes
ultrahigh-power laser sources ☐
intelligent materials and nanomaterials ☐
quantum optics ☐

2. Environmental research and climatic change
biodiversity and ecophysiology of natural ecosystems ☐
climate change in the artic and subartic regions ☒
Material sciences connected with energy convergion and storage ☐

3. Research on serious human health problems
viral infections: HIV and Hepatitis ☐
auto-immune diseases ☐
neurodegenerative diseases ☐

4. Contemporary socio-economic studies
Social security systems and welfare state (in the context of globalization) ☐
Labour, labour market, and employment ☐
Transformation of the educational system ☐

Areas of activity *(Free keywords)*	palaeoclimatology, dendrochronology, dendroclimatology, tree physiology, palaeeobotany

PROJECT IDEA(S)

Short description of project	To cope with the consequences of man-induced recent climatic warming demands reliable quantitative information regarding the natural climate variability, response of landscape, vegetation and ecosystems to climatic changes and its influences on the quality of human habitat is essential. It is necessary to obtain appropriate data sets from carefully selected key regions, and to analyze these with modern methods. The knowledge of the natural climate variability of the last c. 1000 years allow to better evaluate the observed anthropogenic induced changes during the last 150 years (Recent Global Warming) on the background of the Late Holocene natural climatic trends, particularly the “Medieval Climate Anomaly” (IX-XII centuries). Additionally the assumption that carbon fixation may be accelerate through the ‘greening of the Tundra’ and increased tree growth induced by modern warming needs to be verified carefully, as recent studies question that observations. In this project we will focus on multi-proxy reconstructions of two key areas in the Arctic and Sub-Arctic: Kola peninsula, Solovetsky Archipelago, and in the Vologodsky region to study the regional sensitivity to climate change in the different areas along a north-south transect in the Northern European Russia. We plan to use a multi-proxy approach to reconstruct past climate variations and forest ecosystems dynamics from analyses of tree rings of living trees and sub-fossil wood (total ring width, latewood density, stable isotopes), as well as from various proxys from lake sediments and glacial moraines. Here we take advantage of a large body of experiences and previous work, resp. existing sample material. The advantage of the multi-proxy approach is to achieve various climatic parameters of different seasons from different proxies and in different ways. Additionally the strength of each proxy on different frequency bands can be used and can be combined. Moreover it is possible to cross-check the reliability of individual reconstructions as the different proxies are independent sources of paleoclimatic information. Using this approach we strive to assess reliable quantitative information of past climate on both, high and low frequency for three key regions in the North of the European Russia, which are underrepresented in existing data network. One goal is to improve the existing network of global climatic reconstructions to allow

	further model experiments and better validation of existing climate models. These experiments will help to better understand and predict dynamics of forest ecosystems under different climatic scenarios and in a changing climate.
Description of scientific expertise offered	M. Friedrich is the leading scientist at the tree-ring laboratory at Hohenheim University with a profound expertise and knowledge in the fields of dendrochronology and dendroclimatology. The tree-ring laboratory of Hohenheim is among the very few in the field engaged in millennia-long Holocene and Late Glacial chronologies with profound personal experiences in chronology building and field work. The Hohenheim group provide the world wide longest tree-ring chronology back into the end of the Late Glacial. The absolutely dated Hohenheim oak and pine chronologies are the backbone of the international 14C calibration data sets. We take advantage of a large body of experience and previous work over more than 40 years in the Hohenheim laboratory, resulting in very long, continuous chronologies of the Holocene in Central Europe, expanding into North-West Russia (Kola peninsula), where we constructed millennia-long chronologies to study past climate fluctuations. On the Kola peninsula we work towards the development of tree-ring chronologies stretching over 1500… years, spanning major climate fluctuations of the Late Holocene i.e. the Medieval Optimum, the Little Ice Age and the Modern Warming.
Description of technical expertise offered	In the field of Dendroclimatology the Hohenheim Laboratory host a fully equipped tree-ring laboratory with special facilities and expertise to measure optical latewood density ('Blue Intensity technique). Embedded in the Institute of Botany with its focus on experimental tree-physiology and intra-annual tree-ring growth the group also have special scientific expertise in climate-growth responses.
Description of requested partner scientific expertise	- To study different regions we require dendrochronological expertise / existing data and samples from the Northern European Russia (RAS) - For dendroisotopic studies we require a partner with expertise in isotope analyses (carbon, oxygen, hydrogen) of tree rings (T. Böttger, UFZ-Leipzig-Halle) - To compare with proxies from sediments we require expertise with lacustrine sediments stratigraphy, sedimentology, geochemistry and palynology, analysis of diatoms, macro-fossils and - radiocarbon analyses, cartography, dating of moraines and reconstructions of glaciers' variations, cosmogenic isotope dating, - statistical data analysis and methods of miltiproxy climate reconstructions on continental scale. - For data assimilation statistical data analysis and multiproxy climate reconstructions on continental scale we require statistical expertise and climate modeling
Description of requested partner technical expertise	- We request technical expertise in stable Isotope analyses - in lacustrine sedimentology, geochemistry, cosmogenic isotope dating, cartography, dating of moraines and reconstructions of glaciers' dynamics
Potential partners (name, organisation, address …)	Dr. Tatjana Boettger UFZ, Helmholtz Centre for Environmental Research–UFZ, Department of Isotope Hydrology, Theodor-Lieser-Strasse 4, D-06120 Halle, Germany. phone +49 3345 5585 227 / fax +49 3345 5585 449 tatjana.boettger@ufz.de Dr. Jomelli Vincent Laboratoire de Geographie Physique, CNRS, UMR 8591 1 place A. Briand 92195 Meudon, France phone +33 1 45 07 55 81, +33 4 67 83 95 41

This event is funded by the Seventh Framework Programme, European Commission

ERA.Net RUS

	Dr. Olga Solomina Institute of Geography Russian Academy of Sciences Staromonetny, 29 119017 Moscow phone +7 499 125-90-11 olgasolomina@yandex.ru Dr. Ivan Kalugin and Dr. Andrey Darin Institute of geology and mineralogy RAS Kaptiuga, 3, 630090, Novosibirsk, Russsia Tel.: +7 (383) 333-26-00; Fax: +7 (383) 333-27-92 ikalugin@uiggm.nsc.ru, avd@uiggm.nsc.ru

This event is funded by the Seventh Framework Programme, European Commission

ERA.Net RUS

ERA.Net-RUS Pilot Joint Call
For Collaborative S&T Projects

PROFILE FORM

PARTICIPANT			
Gender	☒ Mr	☐ Ms	Title
First name	Alexander		
Last name	Schwock		
Position	network manager		

ORGANISATION DETAILS				
Organisation name	BalticNet-PlasmaTec			
Street *	Brandteichstr. 20			
ZIP * 17489	City * Greifswald		Country * Germany	
Phone * +49 3834 550102		Fax +49 3834 550110		
Email * bnpt@balticnet-plasmatec.org		Web www.balticnet-plasmatec.org		
Employees	☐ 1-10	☐ 11 - 50	☐ 51 - 250	☐ 250 +
Organisation type	☐ Higher Education Institution	☐ Research Institution	☐ Industry	☐ SME ☒ other
Department				
Short description of your company or organization	BalticNet-PlasmaTec is an international network based in Greifswald, Germany, set up to initiate and promote technology and market oriented cooperation of science, research and business in the field of plasma technology. It also helps interested parties in the Baltic Sea region assess their potential for using this technology.			

TOPICS OF INTEREST REGARDING THE CALL IN "COLLABORATIVE S&T PROJECTS"
Sub-topic of exercise
1. Innovative materials and cutting edge technological processes ultrahigh-power laser sources ☐ intelligent materials and nanomaterials ☐ quantum optics ☐ **2. Environmental research and climatic change** biodiversity and ecophysiology of natural ecosystems ☐ climate change in the artic and subartic regions ☐ Material sciences connected with energy convergion and storage ☒

This event is funded by the Seventh Framework Programme, European Commission

ERA.Net RUS

3. Research on serious human health problems viral infections: HIV and Hepatitis ☐ auto-immune diseases ☐ neurodegenerative diseases ☐ **4. Contemporary socio-economic studies** Social security systems and welfare state (in the context of globalization) ☐ Labour, labour market, and employment ☐ Transformation of the educational system ☐
Areas of activity *(Free keywords)*

PROJECT IDEA(S)	
Short description of project	Development of new methods for photo catalysis e.g. the photo catalytic decomposition of water
Description of scientific expertise offered	Deposition of complex compounds og surfaces, e.g. sensitizer on semi conductor by plasma deposition of catalytic materials e.g. photoactive homogeny catalytic materials
Description of technical expertise offered	Plasnma surface modification, Controlled Intensity Modulated Photo Spectroscopy
Description of requested partner scientific expertise	Partners working in the area of photo catalysis
Description of requested partner technical expertise	Development and characterization of catalytic materials
Potential partners (name, organisation, address …)	

This event is funded by the Seventh Framework Programme, European Commission

ERA.Net RUS

28 February 2011, Ekaterinburg, Brokerage Event
ERA.Net-RUS Pilot Joint Call
For Collaborative S&T Projects

PROFILE FORM

PARTICIPANT			
Gender	X Mr	☐ Ms	Title Dr.
First name	Robert		
Last name	Steinberger-Wilckens		
Position	project manager fuel cell research (SOFC)		

ORGANISATION DETAILS				
Organisation name	Forschungszentrum Jülich GmbH			
Street *	Leo-Brandt-Str.			
ZIP * 52425	City * Jülich		Country * DE	
Phone * +49 2461 61 5124		Fax +49 2461 61 4155		
Email * r.steinberger@fz-juelich.de		Web www.fz-juelich.de		
Employees	☐ 1-10	☐ 11 - 50	☐ 51 - 250	☒ 250 +
Organisation type	☐ Higher Education Institution	X Research Institution	☐ Industry	☐ SME ☐ other
Department	IEK-PBZ			
Short description of your company or organization	The Institute of Energy and Climate Reserach has one of the worldwide largest groups working in the area of high temperature fuel cells (solid oxide fuel cells, SOFC).			

TOPICS OF INTEREST REGARDING THE CALL IN "COLLABORATIVE S&T PROJECTS"
Sub-topic of exercise
1. Innovative materials and cutting edge technological processes ultrahigh-power laser sources ☐ intelligent materials and nanomaterials ☐ quantum optics ☐ **2. Environmental research and climatic change** biodiversity and ecophysiology of natural ecosystems ☐ climate change in the artic and subartic regions ☐

This event is funded by the Seventh Framework Programme, European Commission

ERA.Net RUS

Material sciences connected with energy convergion and storage X **3. Research on serious human health problems** viral infections: HIV and Hepatitis ☐ auto-immune diseases ☐ neurodegenerative diseases ☐ **4. Contemporary socio-economic studies** Social security systems and welfare state (in the context of globalization) ☐ Labour, labour market, and employment ☐ Transformation of the educational system ☐
Areas of activity *(Free keywords)* fuel cells, batteries, solid state electrolysers

PROJECT IDEA(S)	
Short description of project	1. Image analysis of ceramic materials ageing (degradation) 2. New materials for solid oxide fuel cells, solid oxide electrolyses and new ceramic materials for batteries
Description of scientific expertise offered	Image analysis methodologies, SOFC, ceramic materials sciences, application of thin layers, thermo-chemistry, corrosion, electrochemistry
Description of technical expertise offered	Image analysis, microscopy
Description of requested partner scientific expertise	Materials sciences, image analysis, microstructure modeling, design of experiment
Description of requested partner technical expertise	Material synthesis, electron microscopy, supercomputing for 3D reconstruction of microstructure
Potential partners (name, organisation, address …)	Institute of High Temperature Electrochemistry (Ural Branch of RAS) Institute of Mathematics and Mechanics (Ural Branch of RAS)

☐

This event is funded by the Seventh Framework Programme, European Commission

ERA.Net RUS

ERA.Net-RUS Pilot Joint Call
For Collaborative S&T Projects

PROFILE FORM

PARTICIPANT			
Gender	☐ Mr	☐ Ms	Title Prof. Dr.
First name	Martin		
Last name	Wilmking		
Position	Professor for Landscape Ecology		

ORGANISATION DETAILS				
Organisation name	University Greifswald			
Street *	Grimmer Strasse 88			
ZIP * 17498	City * Greifswald		Country * Germany	
Phone * +49 (0) 3834 864095		Fax +49 (0) 3834 864096		
Email * wilmking@uni-greifswald.de		Web		
Employees	☐ 1-10	☐ 11 - 50	☐ 51 - 250	☐ 250 +
Organisation type	X Higher Education Institution	☐ Research Institution	☐ Industry	☐ SME ☐ other
Department	Institute for Botany and Landscape Ecology			
Short description of your company or organization	Founded in 1456, the University of Greifswald is one of the oldest academic institutions in Europe. A symbiosis of tradition and modernity attracts 12,000 students from all over the world to come here to study. Our five faculties are constantly adapting their programmes and courses to meet the challenges of the future and to contribute to society as a whole. Research priorities in Greifswald are the life sciences, physics and geosciences, cultural interaction in the Baltic/Nordic region, and law and economics.			

TOPICS OF INTEREST REGARDING THE CALL IN "COLLABORATIVE S&T PROJECTS"
Sub-topic of exercise
1. Innovative materials and cutting edge technological processes ultrahigh-power laser sources ☐ intelligent materials and nanomaterials ☐ quantum optics ☐ **2. Environmental research and climatic change** biodiversity and ecophysiology of natural ecosystems X climate change in the artic and subartic regions X

This event is funded by the Seventh Framework Programme, European Commission

ERA.Net RUS

Material sciences connected with energy convergion and storage ☐ **3. Research on serious human health problems** viral infections: HIV and Hepatitis ☐ auto-immune diseases ☐ neurodegenerative diseases ☐ **4. Contemporary socio-economic studies** Social security systems and welfare state (in the context of globalization) ☐ Labour, labour market, and employment ☐ Transformation of the educational system ☐
Areas of activity *(Free keywords)* Global Change, Arctic research, Forest ecosystems, Shrubs, Carbon

PROJECT IDEA(S)	
Short description of project	Forest and tundra communities in the arctic and subarctic are undergoing unprecedented change. Northwestern Russia is singular in Eurasia with relatively warm permafrost and little anthropogenic influences, making it an ideal place to study the consequences of climate change on natural ecosystems with regard to carbon sequestration potential, changes in community structure, biodiversity and land use.
Description of scientific expertise offered	Ecological expertise in arctic and subarctic ecosystems, reconstruction of past ecosystem dynamics using tree rings and peat cores, measurement and analysis of carbon fluxes between ecosystems and the atmosphere.
Description of technical expertise offered	
Description of requested partner scientific expertise	
Description of requested partner technical expertise	
PARTNERS	
Partners' names, organizations and addresses	Prof. Dr. Tarmo Virtanen, Department of Biological and Environmental Sciences, P.O. Box 65 , 00014 University of Helsinki , Finland Tel +358 9 191 57842 Dr. Svetlana Degteva, Dr. Vladimir Elsakov, Dr. Elena Patova, Dr. Svetlana Zagirova Komi Science Centre, Russian Academy of Sciences, 3a, Chernova, Syktyvkar 167982, Komi, Russia

This event is funded by the Seventh Framework Programme, European Commission

ERA.Net RUS

PROFILE FORM

PARTICIPANT			
Gender	☐ Mr	☐ Ms	Title Prof. Dr.
First name	Marina		
Last name	Popova		
Position	Head of laboratory		

ORGANISATION DETAILS				
Organization name	Institute for Spectroscopy, Russian Academy of Sciences			
Street *	Fizicheskaya Str., 5			
ZIP * 142190	City * Troitsk, Moscow region		Country * Russia	
Phone * +7(496)7510234		Fax +7(496)7510886		
Email * popova@isan.troitsk.ru		Web www.isan.troitsk.ru		
Employees	☐ 1-10	☐ 11 - 50	☒ 51 - 250	☐ 250 +
Organisation type	☒ Higher Education Institution	☒ Research Institution	☐ Industry	☐ SME ☐ other
Department	Solid State Spectroscopy Department			
Short description of your company or organization	The Institute's activity covers practically all kinds of spectroscopies: atomic, molecular, plasma, gases, liquids, condensed matter, disordered solids, crystals, nanostructures, polymers, biological systems; as well as related fields, R&D, and education.			

TOPICS OF INTEREST REGARDING THE CALL IN "COLLABORATIVE S&T PROJECTS"
Sub-topic of exercise
1. Innovative materials and cutting edge technological processes ultrahigh-power laser sources ☒ intelligent materials and nanomaterials ☒ quantum optics ☒ **2. Environmental research and climatic change** biodiversity and ecophysiology of natural ecosystems ☐ climate change in the artic and subartic regions ☐ Material sciences connected with energy convergion and storage ☒ **3. Research on serious human health problems** viral infections: HIV and Hepatitis ☐ auto-immune diseases ☐ neurodegenerative diseases ☐ **4. Contemporary socio-economic studies**

Social security systems and welfare state (in the context of globalization) ☐ Labour, labour market, and employment ☐ Transformation of the educational system ☒
Areas of activity *(Free keywords)* Physics, physical chemistry, optics, spectroscopy, microscopy, diagnostics, nanotechnology, nanolithography, biophysics, lasers, atoms, molecules, plasma, condensed matter, nanostructures, metamaterials, biological systems.

PROJECT IDEA(S)	
Short description of project	High-resolution spectroscopic and dynamic study of functional materials containing rare earths. Development and carrying out the synthesis, detailed structural characterization and the study of properties of new materials for applications in different fields, such as optics and quantum electronics (materials for infrared and self-frequency doubling lasers), medicine (imaging), quantum information, energy (ceramics and glass-ceramics forconfinement of nuclear waste).
Description of scientific expertise offered	Spectroscopy and physics of rare-earth ions embedded in solids, hyperfine, ion-ion, electron-phonon interactions, isotopic effects. Method of the rare-earth spectroscopic probe for studying magnetic dielectrics and phase transitions in various systems.
Description of technical expertise offered	High-resolution (up to 0.001 cm^{-1}) broad-band (10 – 40000 cm^{-1}) Fourier spectrometers, absorption measurements in a broad range (1.5 – 450 K) of stabilized temperatures using polarized light and magnetic field (up to 8 T), measurements of the luminescence spectrum under selective laser excitation.
Description of requested partner scientific expertise	Physics and chemistry of rare earth containing materials (including those with nanoscale structure) for optical and imaging applications, quantum information, confinement of nuclear waste. Physics of strongly correlated systems. Ultrafast phenomena
Description of requested partner technical expertise	Crystal growth technologies, nanotechnologies, structural characterization of samples, luminescence decay time measurements under selective excitation, low-temperature Raman spectroscopy, IR reflection spectra as function of the temperature, ultrafast pump-probe technique. ,
Potential partners (name, organisation, address …)	Dr. D. Caurant, Dr. Ph. Goldner, Prof. G. Aka, Dr. P. Loiseau, Dr. B. Viana, Prof. D. Gourier, UMR CNRS 7574 -Laboratoire de Chimie de la Matière Condensée de Paris , France ; Prof. P. van Loosdrecht, Material Science Centre, University of Groningen, the Netherlands; Dr. A. B. Kuzmenko, Prof. D. van der Marel, DPMC, University of Geneva, Switzerland; Prof. M. Bettinelli, University of Verona, Italy; Prof. Dr. U. Kynast, Fachhochschule Münster (University of Applied Sciences), Germany; Prof. W. Strek, Dr. P. Deren, Institute of Low Temperatures and Structure Research, Polish Academy of Sciences, Wroclaw, Poland.

This event is funded by the Seventh Framework Programme, European Commission

ERA.Net RUS

PROFILE FORM

PARTICIPANT			
Gender	☐ Mr	☐ Ms	Title Prof. Dr.
First name	Marina		
Last name	Popova		
Position	Head of laboratory		

ORGANISATION DETAILS				
Organization name	Institute for Spectroscopy, Russian Academy of Sciences			
Street *	Fizicheskaya Str., 5			
ZIP * 142190	City * Troitsk, Moscow region		Country * Russia	
Phone * +7(496)7510234		Fax +7(496)7510886		
Email * popova@isan.troitsk.ru		Web www.isan.troitsk.ru		
Employees	☐ 1-10	☐ 11 - 50	☒ 51 - 250	☐ 250 +
Organisation type	☒ Higher Education Institution	☒ Research Institution	☐ Industry	☐ SME ☐ other
Department	Solid State Spectroscopy Department			
Short description of your company or organization	The Institute's activity covers practically all kinds of spectroscopies: atomic, molecular, plasma, gases, liquids, condensed matter, disordered solids, crystals, nanostructures, polymers, biological systems; as well as related fields, R&D, and education.			

TOPICS OF INTEREST REGARDING THE CALL IN "COLLABORATIVE S&T PROJECTS"
Sub-topic of exercise
1. Innovative materials and cutting edge technological processes ultrahigh-power laser sources ☒ intelligent materials and nanomaterials ☒ quantum optics ☒ **2. Environmental research and climatic change** biodiversity and ecophysiology of natural ecosystems ☐ climate change in the artic and subartic regions ☐ Material sciences connected with energy convergion and storage ☒ **3. Research on serious human health problems** viral infections: HIV and Hepatitis ☐ auto-immune diseases ☐ neurodegenerative diseases ☐ **4. Contemporary socio-economic studies**

Social security systems and welfare state (in the context of globalization) ☐ Labour, labour market, and employment ☐ Transformation of the educational system ☒
Areas of activity *(Free keywords)* Physics, physical chemistry, optics, spectroscopy, microscopy, diagnostics, nanotechnology, nanolithography, biophysics, lasers, atoms, molecules, plasma, condensed matter, nanostructures, metamaterials, biological systems.

PROJECT IDEA(S)	
Short description of project	High-resolution spectroscopic and dynamic study of functional materials containing rare earths. Development and carrying out the synthesis, detailed structural characterization and the study of properties of new materials for applications in different fields, such as optics and quantum electronics (materials for infrared and self-frequency doubling lasers), medicine (imaging), quantum information, energy (ceramics and glass-ceramics forconfinement of nuclear waste).
Description of scientific expertise offered	Spectroscopy and physics of rare-earth ions embedded in solids, hyperfine, ion-ion, electron-phonon interactions, isotopic effects. Method of the rare-earth spectroscopic probe for studying magnetic dielectrics and phase transitions in various systems.
Description of technical expertise offered	High-resolution (up to 0.001 cm^{-1}) broad-band (10 – 40000 cm^{-1}) Fourier spectrometers, absorption measurements in a broad range (1.5 – 450 K) of stabilized temperatures using polarized light and magnetic field (up to 8 T), measurements of the luminescence spectrum under selective laser excitation.
Description of requested partner scientific expertise	Physics and chemistry of rare earth containing materials (including those with nanoscale structure) for optical and imaging applications, quantum information, confinement of nuclear waste. Physics of strongly correlated systems. Ultrafast phenomena
Description of requested partner technical expertise	Crystal growth technologies, nanotechnologies, structural characterization of samples, luminescence decay time measurements under selective excitation, low-temperature Raman spectroscopy, IR reflection spectra as function of the temperature, ultrafast pump-probe technique. ,
Potential partners (name, organisation, address …)	Dr. D. Caurant, Dr. Ph. Goldner, Prof. G. Aka, Dr. P. Loiseau, Dr. B. Viana, Prof. D. Gourier, UMR CNRS 7574 -Laboratoire de Chimie de la Matière Condensée de Paris , France ; Prof. P. van Loosdrecht, Material Science Centre, University of Groningen, the Netherlands; Dr. A. B. Kuzmenko, Prof. D. van der Marel, DPMC, University of Geneva, Switzerland; Prof. M. Bettinelli, University of Verona, Italy; Prof. Dr. U. Kynast, Fachhochschule Münster (University of Applied Sciences), Germany; Prof. W. Strek, Dr. P. Deren, Institute of Low Temperatures and Structure Research, Polish Academy of Sciences, Wroclaw, Poland.

This event is funded by the Seventh Framework Programme, European Commission

ERA.Net RUS

ERA.Net-RUS Pilot Joint Call
For Collaborative S&T Projects

PROFILE FORM

PARTICIPANT			
Gender	☐ Mr		Title **Dr. Tech. Sci.**
First name	**Aleksandr**		
Last name	**Radushev**		
Position	**Head of Laboratory of Organic Complexing Reagents**		

ORGANISATION DETAILS				
Organisation name: **Institute of Technical Chemistry, Ural Branch of the RAS**				
Street * : **Korolev, 3**				
ZIP * **614013**	City * **Perm**		Country * **Russia**	
Phone * **(342) 237 82 44**		Fax **(342) 237 82 62**		
Email * **e-mail: avradu@mail.ru**		Web **http://www.itch.perm.ru**		
Employees			☐ 51 - 250	
Organisation type	☐ Higher Education Institution	■ Research Institution	☐ Industry	☐ SME ☐ other
Department	**Ural Branch of the Russian Academy of Sciences**			
Short description of your company or organization	**Institute of Technical Chemistry has been conducting research work in chemistry since 1985. General areas: (a) design of materials with a set of ordered physic-chemical and mechanical properties and structures on the basis of organic polymers and inorganic compounds; (b) development of the theory of chemical structure and of synthesis methods for organic compounds including those with biological activity.**			

TOPICS OF INTEREST REGARDING THE CALL IN "COLLABORATIVE S&T PROJECTS"
Sub-topic of exercise: **Recovery of useful components from ores and technological solutions**
1. Innovative materials and cutting edge technological processes ultrahigh-power laser sources ☐ intelligent materials and nanomaterials ☐ quantum optics ☐ **2. Environmental research and climatic change**

biodiversity and ecophysiology of natural ecosystems ■
climate change in the artic and subartic regions ☐
Material sciences connected with energy convergion and storage ☐

3. Research on serious human health problems
viral infections: HIV and Hepatitis ☐
auto-immune diseases ☐
neurodegenerative diseases ☐

4. Contemporary socio-economic studies
Social security systems and welfare state (in the context of globalization) ☐
Labour, labour market, and employment ☐
Transformation of the educational system ☐

Areas of activity *(Free keywords)* Collectors, extraction and flotation processes, N,O-containing reagents, recovery of non-ferrous metals from ores, technological solutions and sewage

PROJECT IDEA(S)	
Short description of project	**The search for and investigation in novel reagents for solvent extraction and flotation processes for metal ions and minerals** Aims of the project: 1. Synthesis of reagents; 2. Investigation in physic-chemical properties of reagents; 3. Investigation in technological properties of reagents; 4. The search for optimal extraction and flotation reagents (as per their properties). Actuality: Successful implementation of the project is supposed to significantly contribute to improvement of existing technologies and to the solving of problems which are a concern in many countries: 1. Efficient recovery of metals' minerals from ores and technological solutions by means of flotation technology currently used in mining industries; 2. Efficient treatment of industrial sewage and removal of toxic and heavy metals have been for many years extremely important for sustainable environment; 3. Solvent extraction of copper and of other non-ferrous metals from technological solutions. Practical aspect: the scope of scientific results already gained by the Institute of Technical Chemistry gives prerequisites for designing and construction of a pilot plant for production of promising extraction and flotation reagents.
Description of scientific expertise offered	During the research work, 4 articles have been published, 4 inventions patented in the RF.
Description of technical expertise offered	Reagents have been tested on various types of Ural ores: sulfur ores with fine distribution of Cu and Zn sulfides, oxidized Cu-Fe-vanadium and potassium ores, on simulated sewage containing toxic metals

Description of requested partner scientific expertise	Research institutions of adequate profile
Description of requested partner technical expertise	Ore mining and processing enterprises, non-ferrous metallurgy enterprises.
PARTNERS	
Partners' names, organizations and addresses	Potential partners from countries participating in the ERA. Net. RUS programme are invited to join consortium with us for subsequent submission of proposal to the ERA. Net. RUS Joint Call Secretariat.

This event is funded by the Seventh Framework Programme, European Commission

ERA.Net RUS

SEVENTH FRAMEWORK PROGRAMME

ERA.Net-RUS Pilot Joint Call
For Collaborative S&T Projects

PROFILE FORM

EXPERT DETAILS			
Gender	☉ Mr	○ Ms	Title Dr
First name	Konstantin		
Last name	Rogachev		
Position	Research scientist		

ORGANISATION DETAILS				
Organisation name	Pacific Oceanological Institute			
Street *	43 Baltiyskay			
ZIP * 690041	City * Vladivostok		Country * Russia	
Phone * 89147274240		Fax		
Email * rogachev@poi.dvo.ru		Web		
Employees	○ 1-10	○ 11 - 50	○ 51 - 250	○ 250 +
Organisation type	☐ Higher Education Institution	☒ Research Institution	☐ Industry	☐ SME ☐ other
Department	Ocean Physics			
Short description of your company or organization	Russian Academy of Sciences			

TOPICS OF INTEREST REGARDING THE CALL IN "COLLABORATIVE S&T PROJECTS"
Sub-topic of exercise
1. Innovative materials and cutting edge technological processes ultrahigh-power laser sources ☐ intelligent materials and nanomaterials ☐ quantum optics ☐ **2. Environmental research and climatic change** biodiversity and ecophysiology of natural ecosystems ☒ climate change in the artic and subartic regions ☒ Material sciences connected with energy convergion and storage ☐

This event is funded by the Seventh Framework Programme, European Commission

ERA.Net RUS

3. Research on serious human health problems viral infections: HIV and Hepatitis ☐ auto-immune diseases ☐ neurodegenerative diseases ☐ **4. Contemporary socio-economic studies** Social security systems and welfare state (in the context of globalization) ☐ Labour, labour market, and employment ☐ Transformation of the educational system ☐
Areas of activity *(Free keywords)* Sea of Okhotsk oceanography and arctic species

PROJECT IDEA(S)	
Short description of project	To define the dominant physical and biological processes leading to aggregation of zooplankton and Bowhead whales
Description of scientific expertise offered	We propose the knowledge of the regional oceanography and its association with biota
Description of technical expertise offered	The proposal will combine satellite observation with physical and biological measurements to examine physical/biological coupling within the northern Sea of Okhotsk
Description of requested partner scientific expertise	The knowledge of the Arctic species
Description of requested partner technical expertise	the knowledge of the Arctic zooplankton and ecosystem processes
Potential partners (name, organisation, address …)	Alfred-Wegner-Institute fur Polar-und Meeresforschung, Bremerhaven, Germany

This event is funded by the Seventh Framework Programme, European Commission

ERA.Net RUS

SEVENTH FRAMEWORK PROGRAMME

ERA.Net-RUS Pilot Joint Call
For Collaborative S&T Projects

PROFILE FORM

EXPERT DETAILS			
Gender	☐ Mr	☐ Ms x	Title Dr
First name	Irina		
Last name	Shtangeeva		
Position	Senior scientist		

ORGANISATION DETAILS				
Organisation name	St. Petersburg University			
Street *	Universitetskaya nab., 7/9			
ZIP * 199034	City * St. Petersburg		Country * Russia	
Phone * 007 812 3666122		Fax		
Email * shtangeeva@gmail.com		Web		
Employees	☐ 1-10	☐ 11 - 50	☐ 51 - 250	☐ 250 + **X**
Organisation type	**X Higher Education Institution**	☐ Research Institution	☐ Industry	☐ SME ☐ other
Department	Chemical Department			
Short description of your company or organization	St. Petersburg State University is the oldest University in Russia. Today it is a major Russian centre of science and education of international reputation. Our group is involved in several international/national projects on trace element biogeochemistry, monitoring of the environment and soil remediation.			

TOPICS OF INTEREST REGARDING THE CALL IN "COLLABORATIVE S&T PROJECTS"
Sub-topic of exercise
1. Innovative materials and cutting edge technological processes ultrahigh-power laser sources ☐ intelligent materials and nanomaterials ☐ quantum optics ☐ **2. Environmental research and climatic change** **biodiversity and ecophysiology of natural ecosystems X** climate change in the artic and subartic regions ☐ Material sciences connected with energy convergion and storage ☐

This event is funded by the Seventh Framework Programme, European Commission

ERA.Net RUS

3. Research on serious human health problems viral infections: HIV and Hepatitis ☐ auto-immune diseases ☐ neurodegenerative diseases ☐ **4. Contemporary socio-economic studies** Social security systems and welfare state (in the context of globalization) ☐ Labour, labour market, and employment ☐ Transformation of the educational system ☐
Areas of activity *(Free keywords)* Biogeochemistry, remediation, exotixicology, analytical chemistry

PROJECT IDEA(S)	
Short description of project	The project will focus on improvement of the environmental situation of contaminated areas in the North-West region of Russia. The main objectives of the research are the following: to identify knowledge gaps and define future research needs in the specific fields of soil monitoring and remediation; to evaluate effects of the environmental contamination on soil, wild and crop plants; to assess key factors affecting mobility of poorly studied potentially toxic trace elements in soil and their availability to plants; to develop phytoextraction procedures aimed at cleaning contaminated soils.
Description of scientific expertise offered	We have successful expertise in phytoremediation of metal contaminated soils, application of modern analytical techniques in the environmental studies, and experimental examination on biogeochemistry of trace and ultratrace elements.
Description of technical expertise offered	Model green-house and field trials; elemental analysis; remote analysis of physiological state of plants; multivariate statistical treatment and modelling of experimental data
Description of requested partner scientific expertise	We would be interested in scientific co-operation with specialists in soil chemistry and microbiology
Description of requested partner technical expertise	Good analytical and experimental basis
Potential partners (name, organisation, address …)	

This event is funded by the Seventh Framework Programme, European Commission

ERA.Net RUS

SEVENTH FRAMEWORK PROGRAMME

ERA.Net-RUS Pilot Joint Call
For Collaborative S&T Projects

PROFILE FORM

EXPERT DETAILS			
Gender	x ☐ Mr	☐ Ms	Title Prof. Dr.
First name	Alexander		
Last name	Matul		
Position	Head of Laboratory of Paleoecology and Biostratigraphy		

ORGANISATION DETAILS				
Organisation name	P.P. Shirshov Institute of Oceanology			
Street * Nakhimovsky prospect 36				
ZIP * 117997	City * Moscow		Country * Russia	
Phone * +7(499)129-21-72		Fax +7(499)124-59-83		
Email * amatul@ocean.ru		Web www.ocean.ru		
Employees	☐ 1-10	☐ 11 - 50	☐ 51 - 250	☐ 250 + X
Organisation type	☐ Higher Education Institution	☐X Research Institution	☐ Industry	☐ SME ☐ other
Department	Marine Geology			
Short description of your company or organization	Shirshov Institute – largest and leading Russian institution to investigate the marine and oceanic systems.			

TOPICS OF INTEREST REGARDING THE CALL IN "COLLABORATIVE S&T PROJECTS"
Sub-topic of exercise
1. Innovative materials and cutting edge technological processes ultrahigh-power laser sources ☐ intelligent materials and nanomaterials ☐ quantum optics ☐ **2. Environmental research and climatic change** biodiversity and ecophysiology of natural ecosystems ☐x climate change in the artic and subartic regions ☐x Material sciences connected with energy convergion and storage ☐

This event is funded by the Seventh Framework Programme, European Commission

ERA.Net RUS

3. Research on serious human health problems viral infections: HIV and Hepatitis ☐ auto-immune diseases ☐ neurodegenerative diseases ☐ **4. Contemporary socio-economic studies** Social security systems and welfare state (in the context of globalization) ☐ Labour, labour market, and employment ☐ Transformation of the educational system ☐
Areas of activity *(Free keywords)* environmental change, paleoclimate, paleoceanography, ecology and paleoecology, biostratigraphy

PROJECT IDEA(S)	
Short description of project	Marine biota vs environmental changes. High-resolution study of the rapid paleoceanographic transitions (glacial to interglacial, centennial to millennial fluctuations, etc.).
Description of scientific expertise offered	Micropaleontology of marine sediments. Biostratigraphy and paleoceanographic reconstructions based on microfossil data.
Description of technical expertise offered	Lab treatment and analysis of microfossils in the plankton and sediment samples: benthic and planktonic foraminifera, diatoms, radiolarians, coccoliths, pollen and spores. Picking-out of microfossil shells for isotopic analysis.
Description of requested partner scientific expertise	Paleoclimate, paleoceanography and environmental changes.
Description of requested partner technical expertise	Sediment and plankton material. Modern methods of the sediment express-analysis: reflected color, XRF, etc. Isotopic study of sediments. AMS radiocarbon dating.
Potential partners (name, organisation, address …)	Alfred-Wegener-Institute for Polar and Marine Research, IFM-GEOMAR, Norway universities and institutes, CEARC, any other institutes in geosciences.