

## Dr Gediminas Jonusauskas

PARTICIPANT				
Gender	<input type="checkbox"/> Mr	<input type="checkbox"/> Ms	Title Dr	
First name	Gediminas			
Last name	Jonusauskas			
Position	Senior researcher in the CNRS			
ORGANISATION DETAILS				
Organisation name	Bordeaux 1 university			
Street *	351 Cours de la Libération			
ZIP *	33405	City *	Talence	Country * FRANCE
Phone *	+33 5 4000 6198		Fax	+33 5 4000 6970
Email *	g.jonusauskas@loma.u-bordeaux1.fr		Web	www.loma.cnrs.fr
Employees	<input type="checkbox"/> 1-10	<input type="checkbox"/> 10-50	<input checked="" type="checkbox"/> 50-250	<input type="checkbox"/> 250 +
Organisation type	<input checked="" type="checkbox"/> Higher Education Institution <input checked="" type="checkbox"/> Research Institution <input type="checkbox"/> Industry <input type="checkbox"/> SME <input type="checkbox"/> other			
Department	Laboratoire Ondes et Matière d'Aquitaine (LOMA) – UMR CNRS 5798			
Short description of your company or organization	LOMA is a multidisciplinary physics laboratory employing more than 50 researchers, professors and assistant professors. The principal research topics are laser and THz physics, ultrafast optical, acoustic and thermal spectroscopies, nano and microfluidics, molecular films, etc... LOMA scientific production: 100 articles, 80 conferences and 30 invited conferences last year.			

TOPICS OF INTEREST REGARDING THE CALL IN “COLLABORATIVE S&T PROJECTS”	
Sub-topic of exercise	
<p><b>1. Innovative materials and cutting edge technological processes</b></p> <p>ultrahigh-power laser sources <input type="checkbox"/></p> <p>intelligent materials and nanomaterials <input checked="" type="checkbox"/></p> <p>quantum optics <input type="checkbox"/></p> <p><b>2. Environmental research and climatic change</b></p> <p>biodiversity and ecophysiology of natural ecosystems <input type="checkbox"/></p> <p>climate change in the arctic and subarctic regions <input type="checkbox"/></p> <p>Material sciences connected with energy convergence and storage <input type="checkbox"/></p> <p><b>3. Research on serious human health problems</b></p> <p>viral infections: HIV and Hepatitis <input type="checkbox"/></p> <p>auto-immune diseases <input type="checkbox"/></p> <p>neurodegenerative diseases <input type="checkbox"/></p> <p><b>4. Contemporary socio-economic studies</b></p>	

Social security systems and welfare state (in the context of globalization) <input type="checkbox"/> Labour, labour market, and employment <input type="checkbox"/> Transformation of the educational system <input type="checkbox"/>
Areas of activity ( <i>Free keywords</i> )      Molecular photodynamics and electronics, chemical sensors, molecular machines, ultrafast spectroscopies, ultrafast lasers

PROJECT IDEA(S)	
Short description of project	<p>Tentative title: Nanostructured Inorganic-Organic Hybrid Materials and Photonic Devices for Chemical Sensing in Liquid and Gas Media</p> <p>Objective of this project is the bottom-up development of novel inorganic-organic hybrid sensor devices with tailored properties that allow the selective optical detection of ecologically and biologically relevant analytes. To achieve this goal, a consortium of chemists and physicists will develop probe molecules which may allow the qualitative and quantitative detection of environmentally and biologically relevant analytes, such as SO<sub>2</sub>, NO<sub>x</sub>, calcium, arsenic, cadmium, chromium, copper, lead, mercury, silver, uranium/plutonium, PAHs, or CFCs, and integrate them into the optical sensor platforms. The probe molecule or a probing assembly of molecules, both of which may react with or bind to the target analyte, will be embedded or attached to the inorganic-organic hybrid material which will be incorporated into a 3D nano/microstructured polymer support / photonic device ensuring the optimal optical responses of Lab-on-Chip or microfluidic sensor arrangements.</p>
Description of scientific expertise offered	<p>Ultrafast spectroscopical studies (femtosecond transient absorption and time resolved fluorescence) will give the information about the molecular photophysics and photochemistry involved in chemical sensing process, which can lead to propositions about improvements in sensor chemical structure and the 3D photonic device design in order to enhance the selectivity and/or sensitivity of analyte detection.</p>
Description of technical expertise offered	
Description of requested partner scientific expertise	<p>Synthesis of molecular probes, 3D nano/microstructuring of polymers</p>
Description of requested partner technical expertise	
Potential partners (name, organisation, address ...)	<p>Olga Fedorova - Synthesis of molecular probes - Nesmeyanov Institute of Organoelement Compounds of Russian Academy of Sciences, Vavilova str., 28, 119991, Moscow, Russia, voice: +7 (499) 135-80-98, e-mail: fedorova@ineos.ac.ru</p> <p>Roaldas Gadonas - 3D nano/microstructuring of polymers - Laser Research Center of Vilnius University, Sauletekio ave. 10, LT-10223 Vilnius, Lithuania, voice: +370 5 2366017, e-mail: roaldas.gadonas@ff.vu.lt</p>

## Prof. Sylvain Marque

PARTICIPANT				
Gender	<input checked="" type="checkbox"/> Mr	<input type="checkbox"/> Ms	Title Professeur	
First name	Sylvain			
Last name	MARQUE			
Position				

  

ORGANISATION DETAILS					
Organisation name	Université de Provence				
Street *	Avenue Escadrille Normandie Niemen				
ZIP *	13397	City *	MARSEILLE	Country *	FRANCE
Phone *	33-4-91-28-80-46		Fax		
Email *	sylvain.marque@univ-marseille@univ-provence.fr		Web		
Employees	<input checked="" type="checkbox"/> 1-10	<input type="checkbox"/> 11 - 50	<input type="checkbox"/> 51 - 250	<input type="checkbox"/> 250 +	
Organisation type	<input checked="" type="checkbox"/> Higher Education Institution <input type="checkbox"/> Research Institution <input type="checkbox"/> Industry <input type="checkbox"/> SME <input type="checkbox"/> other				
Department	Scienced of MATter				
Short description of your company or organization	Department gathering chemist and physicist				

TOPICS OF INTEREST REGARDING THE CALL IN “COLLABORATIVE S&T PROJECTS”	
Sub-topic of exercise	Synthesis of supramolecular objects- Nitroxides - EPR
<b>1. Innovative materials and cutting edge technological processes</b> ultrahigh-power laser sources <input type="checkbox"/> intelligent materials and nanomaterials <input checked="" type="checkbox"/> quantum optics <input type="checkbox"/>	
<b>2. Environmental research and climatic change</b> biodiversity and ecophysiology of natural ecosystems <input type="checkbox"/> climate change in the artic and subartic regions <input type="checkbox"/> Material sciences connected with energy convergion and storage <input type="checkbox"/>	
<b>3. Research on serious human health problems</b> viral infections: HIV and Hepatitis <input type="checkbox"/> auto-immune diseases <input type="checkbox"/>	

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*)  
DNP – spin-trapping

Organic synthesis – nitroxides – free radical chemistry – EPR – spin labeling –

PROJECT IDEA(S)	
Short description of project	Development of supramolecular fluorescent quencher based on nitroxide attached cyclodextrines
Description of scientific expertise offered	Synthesis of supramolecular entities – EPR investigation - Nitroxides
Description of technical expertise offered	EPR and synthesis
Description of requested partner scientific expertise	EPR – NMR-Fluorescence – material application
Description of requested partner technical expertise	High field EPR – liquid and solid state fluorescence – material preparation
Potential partners (name, organisation, address ...)	Prof. Bagryanskaya, International Tomography Center, Institutskaya 3A, Novosibirsk, RUSSIE.

## Dr.-Ing. Uwe Reichel

PARTICIPANT			
Gender	<input checked="" type="checkbox"/> Mr	<input type="checkbox"/> Ms	Title Dr.-Ing.
First name	Uwe		
Last name	Reichel		
Position	Scientist, Project manager		

ORGANISATION DETAILS					
Organisation name	Fraunhofer Institut for Ceramic Technologies and Systems IKTS, Hermsdorf branch of institut				
Street *	Michael-Faraday-Straße 1				
ZIP *	07629	City *	Hermsdorf	Country *	Germany
Phone *	+49 36601 9301 3931		Fax	+49 36601 9301 3921	
Email *	uwe.reichel@ikts.fraunhofer.de		Web	www.ikts.fraunhofer.de	
Employees	<input checked="" type="checkbox"/> 1-10	<input type="checkbox"/> 11 - 50	<input type="checkbox"/> 51 - 250	<input type="checkbox"/> 250 +	
Organisation type	<input type="checkbox"/> Higher Education Institution	<input checked="" type="checkbox"/> Research Institution	<input type="checkbox"/> Industry	<input type="checkbox"/> SME	<input type="checkbox"/> other
Department	Oxide ceramic components and systems				
Short description of your company or organization	<p>Fraunhofer is Europe's largest application-oriented research organization. Our research efforts are geared entirely to people's needs: health, security, communication, energy and the environment. As a result, the work undertaken by our researchers and developers has a significant impact on people's lives. We are creative. We shape technology. We design products. We improve methods and techniques. We open up new vistas. In short, we forge the future.</p> <p>The Fraunhofer Institute for Ceramic Technologies and Systems IKTS, Dresden and Hermsdorf, covers the complete field of advanced ceramics, from basic research to applications. Our services include the development and application of modern advanced ceramic materials, the development of industrial powder metallurgical technologies, and the manufacturing of prototypical components. Structural ceramics, functional ceramics and cermets set up the priorities with emphasis on innovative complex systems which are applied in many industry sectors.</p>				

TOPICS OF INTEREST REGARDING THE CALL IN "COLLABORATIVE S&T PROJECTS"	
Sub-topic of exercise	
<p><b>1. Innovative materials and cutting edge technological processes</b></p> <p>ultrahigh-power laser sources <input checked="" type="checkbox"/></p> <p>intelligent materials and nanomaterials <input checked="" type="checkbox"/></p> <p>quantum optics <input type="checkbox"/></p> <p><b>2. Environmental research and climatic change</b></p> <p>biodiversity and ecophysiology of natural ecosystems <input type="checkbox"/></p> <p>climate change in the arctic and subarctic regions <input type="checkbox"/></p>	

<p>Material sciences connected with energy convergion and storage <input checked="" type="checkbox"/></p> <p><b>3. Research on serious human health problems</b>  viral infections: HIV and Hepatitis <input type="checkbox"/>  auto-immune diseases <input type="checkbox"/>  neurodegenerative diseases <input type="checkbox"/></p> <p><b>4. Contemporary socio-economic studies</b>  Social security systems and welfare state (in the context of globalization) <input type="checkbox"/>  Labour, labour market, and employment <input type="checkbox"/>  Transformation of the educational system <input type="checkbox"/></p>
<p>Areas of activity (<i>Free keywords</i>)      Ceramic materials, Nanostructured ceramics, Transparent- and Optoceramics</p>

PROJECT IDEA(S)	
Short description of project	Development of functional, structural nanostructured ceramics and coatings. The aim of the project is development of methods providing manufacturing the parts from nanostructured functional, structural ceramics and coatings having required shapes, structures and properties. Targeted nanoceramics: substrates for high-frequency electronics, armor ceramics, optical transparent ceramics; seals for pump lines, etc.
Description of scientific expertise offered	For the project we have a Vision to develop nanostructured ceramic materials and coatings with improved properties. We offer the scientific expertises on the field of Nano-Technologies as follows: <ul style="list-style-type: none"> <li>• Characterize and processing of sub-<math>\mu</math>m- and nano-Powders</li> <li>• Mixing, homogenizing and coating of nano-Powders with organic temporary additives and development of surface modified powders</li> <li>• Development of nanostructured ceramics and coating materials for special applications</li> <li>• Industrial processing technologies for forming and thermal technology</li> <li>• Ceramic materials with improved properties: strength, hardness, reliability, thermal and chemical resistance, functional for electronics and optics</li> </ul>
Description of technical expertise offered	The Fraunhofer Institute for Ceramic Technologies and Systems IKTS, Dresden and Hermsdorf, covers the complete field of advanced ceramics, from basic research to applications. Our services include the development and application of modern advanced ceramic materials, the development of industrial powder metallurgical technologies, and the manufacturing of prototypical components. Structural ceramics, functional ceramics and cermets set up the priorities with emphasis on innovative complex systems which are applied in many industry sectors. One of the main emphasis at the Hermsdorf branch of the institute is the development of high-performance oxide ceramics, transparent ceramics and ceramics based on nanopowders and the manufacturing technology for it. We are equipped with the complete ceramic technology for powder processing, moulding, sintering and machining.
Description of requested partner scientific expertise	Experience in the development of ceramic nano-powders and coating materials with special properties; Experience in testing and application of nano and functional materials
Description of requested partner technical expertise	Know-how in nanopowder synthesis, nanoceramics manufacturing and functional coating deposition on fine ceramics; Experience in testing and quality control

Potential partners (name, organisation, address ...)	<ol style="list-style-type: none"> <li>1. TPU Nano-Centre (Prof. Oleg Khasanov; <a href="mailto:khasanov@tpu.ru">khasanov@tpu.ru</a>; <a href="http://portal.tpu.ru/departments/centre/nano/eng">http://portal.tpu.ru/departments/centre/nano/eng</a>; 30, Lenin Ave., Tomsk Polytechnic University, Tomsk, 634050, Russia. Tel./fax +7(3822)427242).</li> <li>2. Holding JSC “NEVZ-Soyuz” (Mrs. Anastasiya Medvedko; <a href="mailto:marketing@nevz.ru">marketing@nevz.ru</a>; <a href="http://ru.nevz.ru/">http://ru.nevz.ru/</a>; 220 Krasnyi prospect, Novosibirsk, 630049, Russia. Tel. +7(383)2106284; Fax +7(383)2258275)</li> </ol>
---	---

## Poland

### Prof. Henryk Dyja

PARTICIPANT			
Gender	<input checked="" type="checkbox"/> Mr	<input type="checkbox"/> Ms	Title Prof.
First name	Henryk		
Last name	Dyja		
Position	Prof. and Dean of Faculty		

ORGANISATION DETAILS					
Organisation name	Czestochowa University of Technology				
Street *	Dabrowskiego 69				
ZIP *	42-200	City *	Czestochowa	Country *	Poland
Phone *	+48 34 3250 784, +48 34 3250 684, +48 34 3250 783		Fax	+48 34 3250 714	
Email *	dyja@wip.pcz.pl		Web	<a href="http://www.wip.pcz.pl/">http://www.wip.pcz.pl/</a>	
Employees	<input checked="" type="checkbox"/> 1-10	<input type="checkbox"/> 11 - 50	<input type="checkbox"/> 51 - 250	<input type="checkbox"/> 250 +	
Organisation type	<input checked="" type="checkbox"/> Higher Education Institution <input type="checkbox"/> Research Institution <input type="checkbox"/> Industry <input type="checkbox"/> SME <input type="checkbox"/> other				
Department	Faculty of Materials Processing Technology and Applied Physics				
Short description of your company or organization	<p>The faculty is a part of Czestochowa University of Technology and it is involved in research and development activities which are meant to make the economy of the country more competitive and innovative as well as to establish wide cooperation strategy with many leading research centres and engineering institutions in Europe, Asia and America. In all aspects of its activity, the Faculty meets the EU requirements and standards.</p> <p>The results of the theoretical studies find their practical applications in many branches of industry such as steelmaking plants, foundries, automobile factories or power plants . The Faculty has developed strategic partnerships with many regional businesses, for example Arcelor Mittal Steel, CMC Zawiercie S.A., Buczek Steel Mill, ISD Czestochowa Steel Mill, Malapanew S.A. Steel Mill in Ozimek, CF Gomma Czestochowa, Pronovum in Katowice. The results of cooperation with businesses are published in the world-recognised magazines and academic journals and they are also presented during many national and international conferences that the Faculty convenes regularly.</p>				

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



<p><b>1. Innovative materials and cutting edge technological processes</b></p> <p>ultrahigh-power laser sources <input type="checkbox"/></p> <p>intelligent materials and nanomaterials <input checked="" type="checkbox"/></p> <p>quantum optics <input type="checkbox"/></p> <p><b>2. Research on serious human health problems</b></p> <p>viral infections: HIV and Hepatitis <input type="checkbox"/></p> <p>auto-immune diseases <input type="checkbox"/></p> <p>neurodegenerative diseases <input type="checkbox"/></p>
<p>Areas of activity (<i>Free keywords</i>)      nanostructure, nanomaterials, grain refinement, plastic deformation, numerical and physical modelling, ultra fine-grained steels, rolling, extrusion, forging, ECAP, ARB, FEM</p>

PROJECT IDEA(S)	
Short description of project	The aim of the project is to investigate deformation and thermal-speed parameters of hot and cold plastic deformation providing nano-structured state of steel with grain size less than 300 nm and determine the possible using of these parameters at rolling the equipment of industrial plants. The test subjects are low-carbon micro alloyed steels, aluminium, magnesium and zirconium alloys, strength and mechanical properties of metals, metal structure. Task of the project: determine of hot and cold plastic deformation parameters providing nano-structured state of metals; production of nano-structured using Max-strain module of the test table Gleeble 3800 by Equal Channel Angular Pressing (ECAP), Accumulative Roll Bonding (ARB), hot and cold rolling, extrusion and forging; determination of mechanical properties of deformed nano-crystalline materials, computer modelling of investigated processes.
Description of scientific expertise offered	From the many years experience of our research team point of view both numerical modelling and range of investigated research are the chances for obtaining proper and interesting results. The confirmation of achieved purposes of earlier research, projects and grants are numerous publication achievement and many industry applications in range of investigated metal forming processes.
Description of technical expertise offered	New and modern scientific equipment: rolling mill, physical simulator Gleeble3800, dilatometer - plastometer Bahr 805 A/D, many testing machines (Zwick, Instron), hydraulic presses, microscopes and computer software based on FEM.
Description of requested partner scientific expertise	Experience in research of ECAP and ARB processes and their numerical modelling. Three high-skew rolling process experience. Cold and hot rolling, extrusion and forging processes. Cold and hot metal forming of low-carbon micro alloyed steels, aluminium, magnesium and zirconium alloys.
Description of requested partner technical expertise	Three high-skew rolling mill, equipment for cold and hot rolling, extrusion and forging processes.
	Prof. Dr.-Ing. Bernd-Arno Behrens , Institute of Metal Forming and Metal-Forming Machines,

Potential partners (name, organisation, address ...)	Leibniz Universität Hannover, An der Universität 2, 30823 Garbsen, Germany; Prof. Dr.-Ing. Rudolf Kawalla, Institute of Metal Forming, TU Bergakademie Freiberg, Bernhard-von-Cotta-Straße 4, Germany; Prof. Sergey Ionov, Prof. Alexandr Zinoviev, National University of Science and Technology "MISIS" (MISIS), 119049, Moscow, B-49, Leninsky prospect, 4, Russia; Prof. Andrey I. Rudskoy, Prof. Alexander Zolotov, St. Petersburg State Polytechnical University, 29 Polytechnicheskaya st. St. Petersburg, 195251 Russia.
---	--

## Dr Zbigniew Olejniczak

PARTICIPANT			
Gender	<input checked="" type="checkbox"/> Mr	<input type="checkbox"/> Ms	Title doctor
First name	Zbigniew		
Last name	Olejniczak		
Position	manager of shoe department		

ORGANISATION DETAILS					
Organisation name	Institute of Leather Industry				
Street *	Zgierska 73				
ZIP *	48 42657 62 75	City *	Łódź	Country *	Poland
Phone *	48 422536108		Fax	48 426576275	
Email *	dyr-ips@ips.lodz.pl		Web	www.ips.lodz.pl	
Employees	<input checked="" type="checkbox"/> 1-10	<input type="checkbox"/> 11 - 50	<input type="checkbox"/> 51 - 250	<input type="checkbox"/> 250 +	
Organisation type	<input type="checkbox"/> Higher Education Institution	<input checked="" type="checkbox"/> Research Institution	<input type="checkbox"/> Industry	<input type="checkbox"/> SME	<input type="checkbox"/> other
Department	footwear				
Short description of your company or organization	Institute working for leather industry (tannery and shoe) in Poland, having cooperations with polymeric sector. Main role of Institute is to putting the innovative technologies into SME and testing their products, as a notified body.				

TOPICS OF INTEREST REGARDING THE CALL IN “COLLABORATIVE S&T PROJECTS”
Sub-topic of exercise
<p><b>1. Innovative materials and cutting edge technological processes</b></p> <p>ultrahigh-power laser sources <input type="checkbox"/></p> <p>intelligent materials and nanomaterials <input checked="" type="checkbox"/></p> <p>quantum optics <input type="checkbox"/></p> <p><b>2. Research on serious human health problems</b></p> <p>viral infections: HIV and Hepatitis <input type="checkbox"/></p> <p>auto-immune diseases <input type="checkbox"/></p> <p>neurodegenerative diseases <input type="checkbox"/></p>

Areas of activity ( <i>Free keywords</i> )	<i>leather, footwear, testing, micro climate,</i>

PROJECT IDEA(S)	
Short description of project	The project will be concerning the possibility of using intelligent materials in the footwear. The modern textile technologies makes possible to obtain materials for different parts of shoe upper, with possibility to react for changes of environment conditions. Till now, the best material is natural leather, but it seems to be possible to improve also several parameters of leather. It will be obtained by preparing "intelligent leather". The project concerning new, intelligent materials as footwear parts, which changes the properties of footwear. Specially it will be concerning with the footwear used during long time, with no intervals. That problem is specially dedicated for footwear used in heavy conditions.
Description of scientific expertise offered	Several research project about textile materials and footwear micro climate preparing for polish SME and scientific organization.
Description of technical expertise offered	All standards for testing materials, shoe components and ready made footwear, specially safety and work. Artificial foot, newest generation for testing micro climate.
Description of requested partner scientific expertise	Expertise in the textile and leather(footwear)sector. Experience in testing the relations between human s body and environment conditions. Experience in testing materials.
Description of requested partner technical expertise	Testing and modification of footwear and footwear elements. Equipment for testing the influence of footwear and environment condition for human s body
Potential partners (name, organisation, address ...)	Kyiv Polytechnic Institute , Bauman Moscow State Technical University

## Prof. Jacek Ulański

PARTICIPANT			
Gender	<input checked="" type="checkbox"/> Mr		Title Prof.
First name	Jacek		
Last name	Ulański		
Position	Head of Department of Molecular Physics; Coordinator of the ECBNT		

ORGANISATION DETAILS					
Organisation name	European Centre of Bio- and Nanotechnology (ECBNT) at Technical University of Lodz				
Street *	Żeromskiego 116				
ZIP *	90-924	City *	Łódź	Country *	Poland
Phone *	+48 42 631 32 16		Fax	+48 42 631 32 18	
Email *	cbnt@p.lodz.pl		Web	<a href="http://www.cbnt.p.lodz.pl/">http://www.cbnt.p.lodz.pl/</a>	
Employees	<input checked="" type="checkbox"/> 1-10	<input type="checkbox"/> 11 - 50	<input type="checkbox"/> 51 - 250	<input checked="" type="checkbox"/> 250+	
Organisation type	<input checked="" type="checkbox"/> Higher Education Institution <input type="checkbox"/> Research Institution <input type="checkbox"/> Industry <input type="checkbox"/> SME <input type="checkbox"/> other				
Department	Department of Molecular Physics and European Centre of Bio- and Nanotechnology				
Short description of your company or organization	ECBNT is an interfaculty research consortium at Technical University of Lodz unifying research groups from 6 faculties of Technical University of Lodz.				

TOPICS OF INTEREST REGARDING THE CALL IN “COLLABORATIVE S&T PROJECTS”	
Sub-topic of exercise	
<p><b>1. Innovative materials and cutting edge technological processes</b></p> <p>ultrahigh-power laser sources <input type="checkbox"/></p> <p>intelligent materials and nanomaterials <input checked="" type="checkbox"/></p> <p>quantum optics <input type="checkbox"/></p> <p><b>2. Research on serious human health problems</b></p> <p>viral infections: HIV and Hepatitis <input type="checkbox"/></p> <p>auto-immune diseases <input checked="" type="checkbox"/></p> <p>neurodegenerative diseases <input checked="" type="checkbox"/></p>	

Areas of activity ( <i>Free keywords</i> )	Biotechnology, Nanochemistry, Nanomaterials, Nanostructured Polymers and nanocomposites, Biomaterials, Genomics & Proteomics, Biorafinery Processes, Enviromental Protection, Nanoelectronics, Organic Electronics, Biocatalysis and Biotransformation,

PROJECT IDEA(S)	
Short description of project	The ECBNT Consortium at Technical University of Lodz has expertise in three platforms: <b>ENERGY, HEALTH and ENVIROMENTAL PROTECTION.</b>
Description of scientific expertise offered	<ol style="list-style-type: none"> <li>1. Nanostructured polymers and nanocomposites</li> <li>2. Nanostructured Biomaterials and Biochemicals</li> <li>3. Inorganic and Hybrid Nanomaterials</li> <li>4. Molecular Dynamics and Modelling</li> </ol>
Description of technical expertise offered	<ol style="list-style-type: none"> <li>1. System Biotechnology</li> <li>2. Nanotechnology for Electronics and Opto-electronics</li> <li>3. Biosensors</li> <li>4. Food Authentication</li> <li>5. Nanotechnology in Textile Industry</li> </ol>
Description of requested partner scientific expertise	Expertise in biotechnology and in nanotechnology
Description of requested partner technical expertise	Application of biomaterials in medicine; Applied Biocatalysis and Biorefinery Processes ; Technology of Inorganic and Organic Electronics
Potential partners (name, organisation, address ...)	Institutes of RAS in Moscow (Prof. Alexei R Khokhlov) and in Chernogolovka (Prof. E. Yagubskii),

## Mr Bogdan Wendler

PARTICIPANT			
Gender	<input checked="" type="checkbox"/> Mr		Title Associate Professor
First name	Bogdan		
Last name	Wendler		
Position	Head Master of the Coatings' Engineering Dept.		

ORGANISATION DETAILS				
Organisation name Technical University of Lodz				
Street * Stefanowskiego 1/15				
ZIP * 90-924		City * Lodz		Country * Poland
Phone * 501 29 29 22			Fax +48 42 636 67 90	
Email * bogdan.wendler@p.lodz.pl			Web www.hardcoating.eu	
Employees				<input checked="" type="checkbox"/> 250 +
Organisation type	X Higher Education Institution			
Department	Faculty of Mechanical Engineering			
Short description of your company or organization	<p>The Coatings' Engineering Dept. makes use of its high technology and unique high vacuum equipment for the research and implementation activity related to the synthesis and deposition of modern complex coatings systems onto the surface of any solid (metallic, ceramic or polymer) substrate. These include among others:</p> <p>↑ Elaboration of modern superhard, low friction, wear resistant, nanocomposite coatings on sintered carbides, ferrous and non-ferrous alloys for numerous tools and machine elements;</p> <p>↑ Elaboration of modern super-low friction, wear and corrosion resistant nanocomposite coatings' systems MeC/C(:H) and MoS<sub>2</sub>(Me1, Me2) coatings on diffusion strengthened titanium alloys for applications to multiple machine elements (where Me denotes a transition metal).</p>			

TOPICS OF INTEREST REGARDING THE CALL IN "COLLABORATIVE S&T PROJECTS"
Sub-topic of exercise
<b>1. Innovative materials and cutting edge technological processes</b> ↑ intelligent materials and nanomaterials X
<b>2. Research on serious human health problems</b>
Areas of activity ( <i>Free keywords</i> ) CVD & PVD techniques, high density gas pulse plasma magnetron sputtering, nanocomposite coatings, functional coatings, hard & super-hard coatings, coatings with low and super-low friction, coatings resistant to adhesive and abrasive wear, coatings resistant to high-temperature corrosion, coatings resistant to electrochemical corrosion; all these types of coatings on sinters, ferrous alloys and non-ferrous alloys (e.g., onto Ti-

alloys)	
PROJECT IDEA(S)	
Short description of project	Deposition of innovative superhard nanocomposite coatings by means of a new high density gas pulse plasma method based on application submitted to the Polish Patent Office in 2010
Description of scientific expertise offered	Coatings' Engineering Division has about thirty years of experience in deposition of functional coatings by CVD and PVD methods. During the last years it developed a series of modern nanocomposite hard and superhard wear and corrosion resistant, as well as super-low friction coatings on tools and machine parts from sinter carbides, ferrous and non-ferrous alloys as for example anti-wear, low friction, superhard, high temperature and electrochemical corrosion resistant coatings.
Description of technical expertise offered	A team of Coatings' Engineering Division has a direct access to unique high vacuum equipment, which is permanently developed. The workshop is equipped with one industrial hybrid PVD unit with Filtered Cathodic Arc Deposition and Reactive Magnetron Sputtering methods and two semi-industrial units. Each one of the two latter consists of four independent magnetrons with 12 kW power current sources for each magnetron. Also, there is one hybrid laboratory unit for magnetron sputtering/Radio Frequency PA CVD deposition of coatings onto micro- and nano-powders. Besides these, the Materials Science and Engineering Institute is well equipped with a number of modern tools for materials investigations as, e.g., nanohardness tester (MTS, USA); AFM (Veeco, USA) and SEM (Hitachi, Japan) microscopes with EDS (NORAN Instr., USA); XRD (Siemens, Germany) with novel attachments for texture and stress measurements; THT high-temperature pin-on-disk tribometer (CSM, Switzerland).
Description of requested partner scientific expertise	A partner is searched interested in developing of modern super-hard coatings deposition on cutting tools and machine parts from sinters and tool steels for high speed machining of hard-to-machine materials (such as titanium alloys and cobalt or nickel superalloys). It would be appreciable to know mechanisms of friction and wear of machining tools. On the other hand, requested partner could have interest in high density gas pulse plasma diagnostics.
Description of requested partner technical expertise	Requested partner should have access to investigations in industrial or semi-industrial conditions of machining hard-to-machine materials (such as, titanium alloys, cobalt or nickel superalloys). On the other hand, requested partner should have access to plasma diagnostics equipment.
Potential partners (name, organisation, address ...)	1) Prof. Vladimir G. Konakov, Saint Petersburg State University, Dept. Physical Chemistry, Universitetskiy Pr. 26, Peterhof, 198504 St. Petersburg, Russia 2) Prof. Alla V. Nojkina, MGGU Moscow State University of Mining, Chair Materials Machining, Leninskiy Pr. 6, 119049 Moscow, Russia 3) Prof. Petr Louda, Liberec Technical University, Mechanical Engineering Faculty, Dept. of Materials Science, 46117 Liberec 1, Halkova St. 6, Czech Rep.



## Dr Alexander Chentsov

PARTICIPANT			
Gender	<input checked="" type="checkbox"/> Mr	<input type="checkbox"/> Ms	Title Dr., PhD.
First name	Alexander		
Last name	Chentsov		
Position	Researcher		

ORGANISATION DETAILS					
Organisation name	A.Yu.Ishlinsky Institute for Problems in Mechanics of the Russian Academy of Sciences				
Street:	Vernadskogo prosp.				
ZIP *	119526	City *	Moscow	Country *	Russia
Phone *	+74954343527		Fax	+74954343527	
Email *	goldst@ipmnet.ru		Web	www.ipmnet.ru	
Employees	<input type="checkbox"/> 1-10	<input type="checkbox"/> 11 - 50	<input type="checkbox"/> 51 - 250	<input checked="" type="checkbox"/> 250 +	
Organisation type	<input type="checkbox"/> Higher Education Institution <input checked="" type="checkbox"/> Research Institution <input type="checkbox"/> Industry <input type="checkbox"/> SME <input type="checkbox"/> other				
Department	Laboratory on Strength and Fracture of Materials and Structures				
Short description of your company or organization	Leading institute in mechanics in the Russian Academy of Sciences				

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

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*) Discrete-continuum modeling, deformation, loss of stability, strength and fracture, nanostructured particles, nanotubes, nanowires, graphene layers

PROJECT IDEA(S)	
Short description of project	Discrete-continuum modeling of mechanical behavior (deformation, loss of stability, strength and fracture) of nanostructured materials, composites filled with nanoscale and microscale nanostructured particles, elements of components designed from nanostructured objects (like nanotubes, nanowires, combinations of nanotubes and graphene layers)
Description of scientific expertise offered	Mechanics of nano- and microstructural materials and components, fracture mechanics, numerical and analytical modeling in solid mechanics
Description of technical expertise offered	Development of schemes for testing deformation and fracture characteristics of nanostructured materials, mechanical testing of thin films, fibers, etc.
Description of requested partner scientific expertise	Physical chemistry of materials. Fundamental basis for material design
Description of requested partner technical expertise	Experience and facilities for preparing samples of nanostructured materials and/or composites with nanoparticles filling
Potential partners (name, organisation, address ...)	No special preference

## Mr Valery Davydov

PARTICIPANT			
Gender	<input checked="" type="checkbox"/> Mr	<input type="checkbox"/> Ms	Title PhD, Physical Chemistry
First name	Valery		
Last name	Davydov		
Position	Senior Research Scientist		

ORGANISATION DETAILS				
Organisation name: Institute for High Pressure Physics, Russian Academy of Sciences, 142190, Troitsk, Moscow Region, Russian Federation				
Street * Kaluzhskoe shosse 14				
ZIP * 142190	City * Troitsk		Country * Russia	
Phone * 7 496 7510738			Fax 7 496 7510012	
Email * vdavydov@hppi.troitsk.ru			Web <a href="http://www.hppi.troitsk.ru">www.hppi.troitsk.ru</a>	
Employees	<input checked="" type="checkbox"/> 1-10	<input type="checkbox"/> 11 - 50	<input type="checkbox"/> 51 - 250	<input type="checkbox"/> 250 +
Organisation type	<input type="checkbox"/> Higher Education Institution <input checked="" type="checkbox"/> Research Institution <input type="checkbox"/> Industry <input type="checkbox"/> SME <input type="checkbox"/> other			
Department	Laboratory of Advanced Materials			
Short description of your company or organization	L.F. Vereshchagin Institute for High Pressure Physics is the leading institution of Russian Academy of Sciences in the field of high-pressure investigation. The original equipment and technologies, developed in the Institute, formed the basis of diamond industry in Russia. At present, the scientific mission of the Institute consists in investigations of substance properties in conditions of strong static compression that can be divided in two major parts: (1) fundamental investigations of the structure, electronic properties, stability and phase transformations under pressure in various substances, (2) high pressure synthesis of new materials and investigation of their properties. The part (2) covers the synthesis of new crystalline and amorphous nanosized forms of carbon.			

TOPICS OF INTEREST REGARDING THE CALL IN "COLLABORATIVE S&T PROJECTS"
Sub-topic of exercise
<b>1. Innovative materials and cutting edge technological processes</b> ultrahigh-power laser sources <input type="checkbox"/> intelligent materials and nanomaterials <input checked="" type="checkbox"/> quantum optics <input type="checkbox"/>  <b>2. Environmental research and climatic change</b> biodiversity and ecophysiology of natural ecosystems <input type="checkbox"/> climate change in the arctic and subarctic regions <input type="checkbox"/> Material sciences connected with energy convergion and storage <input type="checkbox"/>

### 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 and Chemistry of high pressures, synthesis of new carbon and heterocarbon materials, Physics and Chemistry of nanosized forms of carbon (fullerenes, nanotubes, nanodiamonds, onions) and materials on their basis.*

PROJECT IDEA(S)	
Short description of project	<p>The proposed research is motivated by the current interest in controlled release of drugs from nanostructured functional materials, especially magnetic nanoparticles on base of iron (INPs). Biomedical applications require core-shell magnetic NPs containing a magnetic core, encapsulated in inorganic coating. Our preliminary studies were shown that high pressure –high temperature (HPHT) decomposition of ferrocene leads to formation of carbon-encapsulated iron carbide of very homogeneous dimensions of about 15 nm able to be used in medicine and biology.</p> <p>The present project will focus : 1) on synthesis of carbon-encapsulated iron carbide nanoparticles ( superparamagnetic) by high pressure –high temperature decomposition of ferrocene 2) on covalent surface functionalization of INPs by aminoacids (glycine), sacharides (amikacin), and chemotherapeutical agents (doxorubicin) 3) investigation of bio-functionalized INPs by microscopy imaging of living cell morphology and by studies of effects of INPs on biochemical dynamic processes in living cells involving intracellular intake, binding, transport and controlled release of NPs in relation to targeted drug delivery applications.</p>
Description of scientific expertise offered	<p>High-pressure high-temperature synthesis of nanoparticles (NP) of carbon-encapsulated iron carbide with determinate properties. Characterization of synthesized materials by XRD, scanning electron microscopy and Raman spectroscopy. Optimization of method of NP synthesis.</p>
Description of technical expertise offered	<p>Currently, our laboratory possesses a unique set of high-pressure devices necessary for the proposed work. Our Lab has (i) a low-gradient high-pressure apparatus «Maksim» for synthesis of large volume samples (up to 25000 mm<sup>3</sup>) under pressures up to 2.5 GPa and temperatures up to 1500° C, (ii) a high-pressure apparatus «Chechevitsa» capable of handling sample volumes up to 8000 mm<sup>3</sup> and operating at pressures up to 5.0 GPa and temperatures up to 1700 °C, (iii) a set of “Toroid”-type apparatus with reaction zone volumes ranging from 20 to 15000 mm<sup>3</sup> for materials syntheses at pressures up to 13 GPa and temperatures up to 2000 °C. The IHPP also has X-ray powder diffractometer, scanning electron microscope /JEOL JSM 6390LV/ and Raman spectrometer /TriVista spectrometer (Princeton Instruments)/.</p>
Description of requested partner scientific expertise	<p>Characterization of synthesized materials by TEM and HREM methods.</p> <p>Surface functionalization of INPs with bio-organic molecules in order to create new, tunable materials (drugs) with interesting biological properties. Study of solubility , separation and sorting by size of functionalized NPs .</p> <p>In-vitro studies of cell culture endocytosis with f-NPs by confocal and TEM microscopy .</p>

Description of requested partner technical expertise	Transmission Electron Microscopy (TEM). Organic synthesis , nanoparticle surface functionalization, characterization of physico-chemical and biological properties of f-NPs
Potential partners (name, organisation, address ...)	<ol style="list-style-type: none"> <li>1. Prof. V. Agafonov , L.E.M.A., UMR CNRS-CEA 6157 - LRC CEA M01, Université F. Rabelais, av. Monge 31, Tours, 37200, France; tel. +33 247367170, email: <a href="mailto:agafonov@univ-tours.fr">agafonov@univ-tours.fr</a></li> <li>2. Dr. Anke Krüger , Otto-Diels-Institut für Organische Chemie, Christian-Albrechts-Universität Kiel, Otto-Hahn-Platz 3, 24098 Kiel, Germany, tel.: +49-(0)431-880-1179, email: <a href="mailto:akrueger@oc.uni-kiel.de">akrueger@oc.uni-kiel.de</a></li> </ol>

**Prof. Dr Vitaly Gorokhov**

PARTICIPANT			
Gender	<input checked="" type="checkbox"/> Mr	<input type="checkbox"/> Ms	Title Prof., Dr.
First name	Vitaly		
Last name	Gorokhov		
Position	senior scientist, chief of the chear		

ORGANISATION DETAILS					
Organisation name	Institute for Philosophy of the Russian Academy of Sciences				
Street *	Volkhonka 14				
ZIP *	119991	City *	Moscow	Country *	Russia
Phone *	89168834816		Fax	+74956099350	
Email *	vitaly.gorokhov@mail.ru		Web		
Employees	<input checked="" type="checkbox"/> 1-10	<input type="checkbox"/> 11 - 50	<input type="checkbox"/> 51 - 250	<input type="checkbox"/> 250 +	
Organisation type	<input checked="" type="checkbox"/> Higher Education Institution <input checked="" type="checkbox"/> Research Institution <input type="checkbox"/> Industry <input type="checkbox"/> SME <input type="checkbox"/> other				
Department	Interdisciplinary Problems of the Scientific and Technological Development of the IPhRAS; chear for philosophy of science and technology of the GAUGN				
Short description of your company or organization	The Institute of Philosophy of the Russian Academy of Sciences (IPhRAS) is the principal institute in Russia for academic research in this field. Academic study of the highest quality is pursued here, covering all the main thematic areas and current problems of contemporary philosophy. The integration of academic work and education is successfully realized: faculties of philosophy and politics have been created within the Institute, as well as an Oriental department within the Faculty of Philosophy in the State University for the Humanities (GAUGN).				

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

<b>1. Innovative materials and cutting edge technological processes</b> ultrahigh-power laser sources <input type="checkbox"/> intelligent materials and nanomaterials x quantum optics <input type="checkbox"/>	
<b>2. Environmental research and climatic change</b> biodiversity and ecophysiology of natural ecosystems <input type="checkbox"/> climate change in the arctic and subarctic regions <input type="checkbox"/> Material sciences connected with energy conversion and storage <input type="checkbox"/>	
<b>3. Research on serious human health problems</b> viral infections: HIV and Hepatitis <input type="checkbox"/> auto-immune diseases <input type="checkbox"/> neurodegenerative diseases <input type="checkbox"/>	
<b>4. Contemporary socio-economic studies</b> Social security systems and welfare state (in the context of globalization) <input type="checkbox"/> Labour, labour market, and employment <input type="checkbox"/> Transformation of the educational system x	
Areas of activity ( <i>Free keywords</i> )      technology assessment, nanotechnoscience, nanoethics, knowledge society, nanotechnological revolution	

PROJECT IDEA(S)	
Short description of project	<p>The goal of the project is the exchange of experience and coordination of scientific research in the sphere of social and humanitarian problems of nanotechnological modernization and creation of conditions for experts' preparation on the basis of optimization of research activity. The first task of this project to optimize of international research activity in the sphere of social and humanitarian problems of nanotechnological modernization and to create favourable conditions for world level experts preparation in the sphere of social and humanitarian problems of nanotechnological modernization on the basis of optimization of the international research activity. For this goal we need to investigate the paradigmatic change in the sphere of science production especially in the nanotechnoscience, to reveal development directions of research knowledge around nanotechnological modernization, and to prepare the analytical reviews of the target issue. Series of articles on theoretical and methodological substantiations of conditions and mechanisms of experts' preparation of the international standard on the basis of optimization of joint research will be prepared. This is important for the preparation of the international level experts in the sphere of social and humanitarian problems of nanotechnological modernization for the purpose of development of knowledge' directions in the Russian and German education system and activation of scientific research in this area. The questions under investigation are there: research of epistemic bases of nanotechnological revolution; the analysis of social and humanitarian problems and an interdisciplinary <a href="#">appraisal</a> of social, ecological etc. consequences of nanotechnologies introduction and nanoethics; research of transdisciplinary problems of nanotechnological modernization; the analysis of problems of scientific and technical policy in the sphere of nanotechnological modernization.</p>
Description of scientific expertise	

## Prof. Oleg Khasanov

PARTICIPANT			
Gender	<input checked="" type="checkbox"/> Mr	<input type="checkbox"/> Ms	Title Professor
First name	Oleg		
Last name	Khasanov		
Position	Director of Nano-Centre of Tomsk Polytechnic University; Head of Department "Nanomaterials and Nanotechnologies" of TPU		

ORGANISATION DETAILS				
Organisation name National Research Tomsk Polytechnic University				
Street * 30, Lenin Ave.				
ZIP * 634050		City * Tomsk		Country * Russia
Phone * +7(3822)427242			Fax +7(3822)426936	
Email * <a href="mailto:khasanov@tpu.ru">khasanov@tpu.ru</a>			Web <a href="http://www.tpu.ru/eng/nanoc.htm">www.tpu.ru/eng/nanoc.htm</a> <a href="http://portal.tpu.ru/departments/centre/nano/eng">http://portal.tpu.ru/departments/centre/nano/eng</a>	
Employees	<input type="checkbox"/> 1-10	<input type="checkbox"/> 11 - 50	<input checked="" type="checkbox"/> 51 - 250	<input type="checkbox"/> 250 +
Organisation type	<input checked="" type="checkbox"/> Higher Education Institution <input type="checkbox"/> Research Institution <input type="checkbox"/> Industry <input type="checkbox"/> SME <input type="checkbox"/> other			
Department	Nano-Centre of TPU; Department "Nanomaterials and Nanotechnologies" of TPU			
Short description of your company or organization	<p>TPU Nano-Centre is participant of the Russian National Nanotechnology Network; it is in the "Top 100 of Russian Organizations. Science. Innovations. R&amp;D" in 2010. The pilot processing line for manufacturing articles from bulk functional and structural nanostructured ceramics has been established using modern equipment, devices, installations for processing/testing nanopowders and bulk nanoceramics. The technology is based on the developed and patented (in Russia, USA, Europe, S.Korea, Ukraine, etc.) new methods of compacting of dry nano- and poly-disperse powders under powerful ultrasound action and by the "collector" technique. In 2010 TPU Nano-Centre and Holding JSC "NEVZ-Soyuz" (Novosibirsk) were awarded by the Russian Ministry of Education and Science in result of Russian competition of projects according to the Government Decree #218 "Support of high-tech enterprises established in cooperation of universities with industry". TPU Nano-Centre, University of Kassel (Germany), Tomsk City Administration have organized the German-Russian Forum "Nanophotonics and Nanomaterials" to identify topics which might lead to joint R&amp;D clusters or project groups (<a href="http://tpu.ru/php/news/events.php?n=3130">http://tpu.ru/php/news/events.php?n=3130</a>; <a href="http://www.owwz.de/index.php?id=882">http://www.owwz.de/index.php?id=882</a>; Sept. 16-17, 2010, Tomsk).</p>			

TOPICS OF INTEREST REGARDING THE CALL IN "COLLABORATIVE S&T PROJECTS"
Sub-topic of exercise
<b>1. Innovative materials and cutting edge technological processes</b> ultrahigh-power laser sources <input type="checkbox"/> intelligent materials and nanomaterials <input checked="" type="checkbox"/> quantum optics <input type="checkbox"/>



## 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*) Nanoceramics, metal coatings, grains, interfaces

## PROJECT IDEA(S)

Short description of Project	Development of functional, structural nanostructured ceramics and coatings. The aim of the project is development of methods providing manufacturing the parts from nanostructured functional, structural ceramics and coatings having required shapes, structures and properties. Targeted nanoceramics: substrates for high-frequency electronics, armor ceramics, optical transparent ceramics; seals for pump lines, etc.
Description of scientific expertise offered	Experience of 30 years, since 1980, in investigation of synthesis and properties of nano (ultra-dispersed) powders and ceramics, nano- and poly-dispersed powders compaction and consolidation, methods providing formation of nanostructure in the ceramics.
Description of technical expertise offered	Pilot series of parts from different kinds of nanostructured structural and armor tough, wear-proof, high-strength ceramics; functional optical, ferroelectric, piezo-, electro-ceramics ( $ZrO_2-Y_2O_3$ ; $Al_2O_3$ ; $ZrB_2$ ; $Nd-Y_2O_3$ ; $Nd:Y_3Al_5O_{12}$ ; $(Ba,Sr)TiO_3$ ; $Ba-W-Ti-O$ ; $Pb(Zr,Ti)O_3$ ; etc.) have been developed for applications in automobile, cable, nuclear power industries, electronics, telecommunications.
Description of requested partner scientific expertise	Experience in high resolution TEM for investigation of nanoscaled interfaces and grains in the ceramic structure; nanotribology.
Description of requested partner technical expertise	Know-how in nanopowder synthesis, nanoceramics manufacturing and metal coating deposition on fine ceramics.
Potential partners (name, organisation, address ...)	1. TPU Nano-Centre (Prof. Oleg Khasanov; <a href="mailto:khasanov@tpu.ru">khasanov@tpu.ru</a> ; <a href="http://portal.tpu.ru/departments/centre/nano/eng">http://portal.tpu.ru/departments/centre/nano/eng</a> ; 30, Lenin Ave., Tomsk Polytechnic University, Tomsk, 634050, Russia. Tel./fax +7(3822)427242). 2. Holding JSC "NEVZ-Soyuz" (Mrs. Anastasiya Medvedko; <a href="mailto:marketing@nevz.ru">marketing@nevz.ru</a> ; <a href="http://ru.nevz.ru/">http://ru.nevz.ru/</a> ; 220 Krasnyi prospect, Novosibirsk, 630049, Russia. Tel. +7(383)2106284; Fax +7(383)2258275). 3. Fraunhofer IKTS Institutsteil Hermsdorf (Dr.-Ing. Uwe Reichel; <a href="mailto:uwe.reichel@ikts.fraunhofer.de">uwe.reichel@ikts.fraunhofer.de</a> ; <a href="http://www.ikts.fraunhofer.de">www.ikts.fraunhofer.de</a> ; Michael-Faraday-Str. 1, 07629 Hermsdorf, Germany; Telefon +49(36601)9301-3931; Fax +49(36601)9301-3921).

## Prof. Nikolay Korovkin

PARTICIPANT			
Gender	Mr		Title Professor
First name	Nikolay		
Last name	Korovkin		
Position	Head of chair "Electrical Engineering"		

ORGANISATION DETAILS					
Organisation name	St-Petersburg State Polytechnical Uni				
Street *	Polytechnicheskaya, 29				
ZIP *	195251	City *	St-Petersburg	Country *	Russia
Phone *	+7 (812) 297-16-16,552-62-40		Fax	+7 (812) 552-60-80	
Email *			Web	www.spbstu-eng.ru/	
Employees	<input checked="" type="checkbox"/> 1-10	<input type="checkbox"/> 11 - 50	<input type="checkbox"/> 51 - 250	<input type="checkbox"/> 250 +	
Organisation type	<input checked="" type="checkbox"/> Higher Education Institution <input type="checkbox"/> Research Institution <input type="checkbox"/> Industry <input type="checkbox"/> SME <input type="checkbox"/> other				
Department	Electromechanical				
Short description of your company or organization	See, pls, site of Uni <a href="http://www.spbstu-eng.ru/">www.spbstu-eng.ru/</a>				

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

#### 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	<p><b>Context</b></p> <p>Obtaining more efficient electromagnetic shielding is a constant need in today's society, in particular in the aeronautics and electronic industries, given the increasing demands on the reliability of electronic devices in an electromagnetically polluted environment. Based on recent developments, especially from the characterization point of view in the field of nanotechnology and more particularly in nanofiller production, new opportunities have been created to provide lighter shields (cost-weight) without creating any limitation for structural designers and offering better adhesion, corrosion and oxidation resistance, recyclability, gasket compatibility and durability.</p> <p><b>Aim of the Study</b></p> <p>Nanofillers in the form of metallic particles, single-wall carbon nanotubes (SWCNs), or multi-walled carbon nanotubes (MWCNs) have been recently used by different research groups for electromagnetic shielding. However, the interaction mechanisms between nanoparticles and EM waves are not fully understood. For example, some studies have shown that a composite material having a conductive particle of small unit size would be more effective in terms of shielding effectiveness than one having conductive particles with a large unit size of the particles. Furthermore, most of the studies on the shielding effectiveness of nanoparticles are carried out in the radiofrequency and microwave range. It is not clear how effective nanoparticles are in shielding low frequency electromagnetic fields.</p> <p>The objective of the study is twofold: (a) to develop the theoretical foundation for the characterization of the electromagnetic shielding behavior of polymer-matrix composite (PMC) with nanoparticles, and (b) to evaluate the influence of the PMC structure and the nanofillers size, density and distribution on the electromagnetic shielding efficiency for frequencies ranging from tens of kHz up to the GHz region.</p>
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 ...)	<p>Otto-von-Guericke Uni Magdeburg, Germany,</p> <p>EPFL, Lausanne, Switzerland,</p> <p>Institute of Microtechnology, University of Neuchâtel, Switzerland,</p> <p>Information and Communications Technology Institute of the HEIG-VD</p>

## Prof. Boris Krylov

PARTICIPANT			
Gender	<input checked="" type="checkbox"/> Mr Mr	<input type="checkbox"/> Ms Ms	Title Professor
First name	Boris		
Last name	Krylov		
Position	Deputy Director		

ORGANISATION DETAILS				
Organisation name Pavlov Institute of Physiology Russian Academy of Sciences				
Street * nab. Makarova, 6				
ZIP * 199034	City * Saint-Petersburg		Country * Russian Federation	
Phone * +79112992597			Fax 812-3280501	
Email * krylov@infran.ru			Web http://www.infran.ru	
Employees	<input checked="" type="checkbox"/> 1-10	<input type="checkbox"/> 11 - 50	<input type="checkbox"/> 51 - 250	<input type="checkbox"/> 250 +
Organisation type	<input type="checkbox"/> Higher Education Institution <input type="checkbox"/> + Research Institution <input type="checkbox"/> Industry <input type="checkbox"/> SME <input type="checkbox"/> other			
Department				
Short description of your company or organization	Pavlov Institute of Physiology of the Russian Academy of Sciences originates from the Physiological Institute of the USSR Academy of Sciences, which was founded in 1925 on the base of the Physiological Laboratory. At present, Pavlov Institute of Physiology is one of the largest multi-profile physiological institutions of the country. Working in its 33 laboratories, sectors and groups are more than 250 researchers, including about 200 Doctors and Candidates of Sciences.			

TOPICS OF INTEREST REGARDING THE CALL IN “COLLABORATIVE S&T PROJECTS”	
Sub-topic of exercise	Clinical application of laser devices for chronic pain relief
<b>1. Innovative materials and cutting edge technological processes</b> ultrahigh-power laser sources + <input type="checkbox"/> intelligent materials and nanomaterials <input type="checkbox"/> quantum optics <input type="checkbox"/>	
<b>2. Environmental research and climatic change</b> biodiversity and ecophysiology of natural ecosystems <input type="checkbox"/> climate change in the arctic and subarctic regions <input type="checkbox"/> Material sciences connected with energy convergion and storage <input type="checkbox"/>	
<b>3. Research on serious human health problems</b> viral infections: HIV and Hepatitis + <input type="checkbox"/>	

auto-immune diseases <input type="checkbox"/> neurodegenerative diseases + <input type="checkbox"/>
<b>4. Contemporary socio-economic studies</b> Social security systems and welfare state (in the context of globalization) <input type="checkbox"/> Labour, labour market, and employment <input type="checkbox"/> Transformation of the educational system <input type="checkbox"/>
Areas of activity ( <i>Free keywords</i> ) <i>Neurophysiology, Ionic channels of excitable membranes, pain relief, infrared laser irradiation</i>

PROJECT IDEA(S)	
Short description of project	<p>Responses of rat dorsal root sensory neuron cell membrane to the influence of infrared (IR) low-power irradiation were investigated using whole-cell patch-clamp method. As a very sensitive physiological indicator of membrane response, the effective charge transfer in the activation gating system of the tetrodotoxin-resistant (TTXr, Nav1.8) sodium channels which are responsible for pain sensation is measured. In this case, it is found using patch-clamp method that the threshold value of low-power IR irradiation was equal to the energy carried of 200 photons. Energy carried by 2000 photons (the wave length was equal to 10.6 mkm) lead to heating of the membrane. These values determine the energy range that should be used in clinical practice for pain relief. Our results indicate that the low-power IR irradiation that leads to the physiological effects under consideration is spectral selective. Low-power irradiation of wave lengths equal to 1.05 and 3.39 mkm were ineffective. But the change-over of the wave length from 10.57 mkm to 9.24 mkm results in existence and conservation of the physiological effect under consideration. We predict that ATP molecules are excited not only due to excitation of P-O-P bond (10.57 mkm) but also C-O-P bond (9.24 mkm). As a result, the transducer function of Na, K- ATPase should be activated. This fact, in turn, leads to the decrease in excitability of TTXr channels and to pain relief. This result is confirmed by the behavioral experiments on rats ("Formalin test"). The data obtained have clinical implications. The characteristics of medical device are formulated. These characteristics determine the efficiency of clinical application of the new-made laser device. Different forms of pain syndrome are incurable up-to-now. As a result millions of patients are suffering from chronic pain. Our preliminary impressions from clinical trials of the method are promising. The new results in the field of skin laser therapy show their effectiveness for pain relief. The aim of the project is the development of a new medical device for physiotherapy. New low-power IR laser for chronic pain relief should be constructed and certificated.</p>
Description of scientific expertise offered	<p>The scientific expertise has been done in 2008. This part of this work was supported by of Russian Foundation of Basic Research by the grant N <b>08-04-90029-Bel-a</b>            Recent publications on the topic were presented in Russian Journal "Sensory Systems" and Belarus Journal of Applied Spectroscopy in 2010.</p>
Description of technical expertise offered	<p>The standard procedure of technical expertise of the new medical laser device should be done in the certified State Institute of Medical Technique (Moscow).</p>
Description of requested partner scientific expertise	<p>The developed device should be tested PRACTICALLY in clinics. Positive results as pilot data have been obtained.</p>

Description of requested partner technical expertise	
Potential partners (name, organisation, address ...)	<p>At present an interested support of this Project is obtained by Professor Joergen Schwarz, Center of Molecular Neurobiology Hamburg (ZMNH) (Germany).          Juergen Schwarz <a href="mailto:juergen.schwarz@zmnh.uni-hamburg.de">juergen.schwarz@zmnh.uni-hamburg.de</a>          Prof. Juergen R. Schwarz          University Medical Center Hamburg-Eppendorf          ZMNH          Institut fuer Neurale Signalverarbeitung          Falkenried 94          20251 Hamburg          Germany          Tel.:040 - 7410 - 55083          Fax.:040 - 7410 - 56643</p>

## Prof. Yuri Kulchin

PARTICIPANT			
Gender	<input checked="" type="radio"/> Mr	<input type="radio"/> Ms	Title Prof
First name	Yuri		
Last name	Kulchin		
Position	Director		

ORGANISATION DETAILS					
Organisation name	Institute of Automation and Control Processes, Far Eastern Branch of Russ. Acad. of Sci.				
Street *	5, Radio				
ZIP *	690041	City *	Vladivostok	Country *	Russia
Phone *	+7-4232-268890		Fax	+7-4232-310452	
Email *	kulchin@iacp.dvo.ru		Web	http://www.iacp.dvo.ru/	
Employees	<input checked="" type="radio"/> 1-10	<input type="radio"/> 11 - 50	<input type="radio"/> 51 - 250	<input checked="" type="radio"/> 250 +	
Organisation type	<input type="checkbox"/> Higher Education Institution	<input checked="" type="checkbox"/> Research Institution	<input type="checkbox"/> Industry	<input type="checkbox"/> SME	<input type="checkbox"/> other
Department	Optoelectronics				
Short description of your company or organization	R&D projects (basic, applied and innovative) in the fields of quantum electronics, laser physics, fluid & gas dynamics, surface physics, information & computer science technology, automatized control systems, World Ocean & Earth atmosphere monitoring.				

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



neurodegenerative diseases <input type="checkbox"/>	
<b>4. Contemporary socio-economic studies</b>	
Social security systems and welfare state (in the context of globalization) <input type="checkbox"/>	
Labour, labour market, and employment <input type="checkbox"/>	
Transformation of the educational system <input type="checkbox"/>	
Areas of activity ( <i>Free keywords</i> )	nanometrology, optical & fiber-optical sensors, nano-materials

PROJECT IDEA(S)	
Short description of project	Development of bio-photonics sensors based on natural and artificial nano-structures and nano-materials.
Description of scientific expertise offered	laser physics, quantum electronics, optoelectronics, fiber & non-linear optics
Description of technical expertise offered	fiber-optical sensors & measurement systems, natural materials for photonics, nano-composites, structural health monitoring
Description of requested partner scientific expertise	optics & photonics
Description of requested partner technical expertise	photonic crystals, photonic materials, meta-materials, nano-sensors, bio-sensors
Potential partners (name, organisation, address ...)	Alexei Kamshilin, University of Eastern Finland (Kuopio, Finland); Nikolaos Vainos, National Hellenic Research Foundation (Athens, Greece); Optoinspection Oy (Joensuu, Finland); Karsten Buse, University of Bonn (Bonn, Germany)

## Mr Vladimir Molchanov

PARTICIPANT			
Gender	<input checked="" type="checkbox"/> Mr	<input type="checkbox"/> Ms	Title Phd
First name Vladimir			
Last name Molchanov			
Position			

ORGANISATION DETAILS				
Organisation name <i>Far East Geological Institute, FEB of RAS,</i>				
Street * 159, Prospect 100-letya				
ZIP * 690022		City * Vladivostok		Country * Russia
Phone *8 4232 317847			Fax 8 4232 317847	
Email * vpmol@mail.ru			Web WWW.fegi.ru	
Employees	<input checked="" type="checkbox"/> 1-10	<input type="checkbox"/> 11 - 50	<input type="checkbox"/> 51 - 250	<input type="checkbox"/> 250 +
Organisation type	<input type="checkbox"/> Higher Education Institution <input checked="" type="checkbox"/> Research Institution <input type="checkbox"/> Industry <input type="checkbox"/> SME <input type="checkbox"/> other			
Department	Far Eastern Branch Russian Academy of Sciences			
Short description of your company or organization	<p>The Far East Geological Institute (PEG I) is situated in the vicinity of Amursky Bay, in a wooded suburb north of Vladivostok. The Institute includes seventeen research laboratories and a museum. Recently an Analytical Center was created, furnished with up-to-date precision apparatus and sophisticated equipment. The Analytical Center conducts the full range of analytical investigations of rocks and minerals, including the delineation of light isotopes and rare earth elements.</p> <p>The Institute's first Director was Ekaterina Alexandrovna Radkevich who was a Corresponding Member of the USSR Academy of Sciences, and a Hero of Socialist Labor. Director Radkevich is recognized for her decisive role in organizing and developing FEGI's basic research. Throughout its history the Institute has been headed by renowned scientists, including Academicians V.G. Moiseenko and A.D. Scheglov, and Corresponding Member of the Russian Academy of Sciences I.Ya. Nekrasov.</p> <p>FEGI is a comprehensive, wide-ranging geological research institution equipped with up-to-date laboratories where scientists research the most difficult and complex issues of geology, geochemistry, engineering geology, and geocology of the Russian Far East.</p> <p>The Geological Institute's basic scientific activities fall into three main research areas:</p> <ul style="list-style-type: none"> <li>• Geology, lithosphere dynamics, magmatism and metamorphism within the Earth's crust, and studies of the mantle ocean-continent transition zone evolution;</li> <li>• Metallogeny of typical geodynamic environments;</li> <li>• Environmental geology, interaction between the atmosphere, hydrosphere, lithosphere, and biosphere in modern geocological systems.</li> </ul>			

### 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	Investigation of properties of nanostructures in carbon from gold, platinum and graphite-bearing rocks of the southern Far East Russia. Increased concentrations of gold and platinum group metals have been recently established in the graphitized rocks of the southern Far East. Investigation of graphite microstructures resulted in finding out of several types of carbon nanostructures: fullerites, fibroid carbon nanotubes and nanofilms. It is established that carbon nanoforms are in close correlation with gold microglobulars and nanospireroids. The central purpose of the project in this connection is the usability of gold, platinum and graphite-bearing rocks as a source of carbon- and gold-bearing nanomaterials. A revealing of forms of possible presence of precious metals in carbon micro-nanostructures is very actual for development of efficient technology for their industry extracting.
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 Andrei Naumov**

PARTICIPANT			
Gender	<input checked="" type="checkbox"/> Mr	<input type="checkbox"/> 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	<input checked="" type="checkbox"/> 1-10	<input type="checkbox"/> 11 - 50	<input type="checkbox"/> 51 - 250	<input type="checkbox"/> 250 +	
Organisation type	<input checked="" type="checkbox"/> Higher Education Institution <input checked="" type="checkbox"/> Research Institution <input type="checkbox"/> Industry <input type="checkbox"/> SME <input type="checkbox"/> 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	
<p><b>1. Innovative materials and cutting edge technological processes</b>            ultrahigh-power laser sources <input checked="" type="checkbox"/>            intelligent materials and nanomaterials <input checked="" type="checkbox"/>            quantum optics <input checked="" type="checkbox"/></p> <p><b>2. Environmental research and climatic change</b>            biodiversity and ecophysiology of natural ecosystems <input type="checkbox"/>            climate change in the arctic and subarctic regions <input type="checkbox"/>            Material sciences connected with energy convergion and storage <input checked="" type="checkbox"/></p> <p><b>3. Research on serious human health problems</b>            viral infections: HIV and Hepatitis <input type="checkbox"/>            auto-immune diseases <input type="checkbox"/></p>	

neurodegenerative diseases <input type="checkbox"/>
<b>4. Contemporary socio-economic studies</b> Social security systems and welfare state (in the context of globalization) <input type="checkbox"/> Labour, labour market, and employment <input type="checkbox"/> Transformation of the educational system <input checked="" type="checkbox"/>
Areas of activity ( <i>Free keywords</i> )      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	<input checked="" type="checkbox"/> Mr	<input type="checkbox"/> 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	<input checked="" type="checkbox"/> 1-10	<input type="checkbox"/> 11 - 50	<input checked="" type="checkbox"/> 51 - 250	<input type="checkbox"/> 250+
Organisation type	<input type="checkbox"/> Higher Education Institution <input checked="" type="checkbox"/> Research Institution <input type="checkbox"/> Industry <input type="checkbox"/> SME <input type="checkbox"/> 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
<b>1. Innovative materials and cutting edge technological processes</b> ultrahigh-power laser sources <input type="checkbox"/> intelligent materials and nanomaterials <input checked="" type="checkbox"/> quantum optics <input type="checkbox"/>
<b>2. Environmental research and climatic change</b> biodiversity and ecophysiology of natural ecosystems <input checked="" type="checkbox"/> climate change in the arctic and subarctic regions <input type="checkbox"/> Material sciences connected with energy conversion and storage <input type="checkbox"/>
<b>3. Research on serious human health problems</b>

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: <ul style="list-style-type: none"> <li>- would carry out the investigations in field of the natural compounds chemistry and would carry out the investigations in field of natural compounds bioassaying;</li> <li>- would have the experience of the creation of the novel medicines to treat such diseases as cancer, viral, autoimmune, cardiovascular and neurodegenerative;</li> </ul>
Description of technical expertise offered	We would need technical expertise to this project who: <ul style="list-style-type: none"> <li>- would have the experience in field of working out the novel technological methods for preparations of the novel medicines;</li> <li>- would have the experience in assessment of market prospects for novel medicines</li> </ul>
Description of requested partner scientific expertise	We would need scientific expertise requested partner to this project who: <ul style="list-style-type: none"> <li>- would carry out the investigations in field of the natural compounds chemistry and would carry out the investigations in field of natural compounds bioassaying;</li> <li>- would have the experience of the creation of the novel medicines to treat such diseases as cancer, viral, autoimmune, cardiovascular and neurodegenerative;</li> </ul>
Description of requested partner technical expertise	We would need technical expertise requested partner to this project who: <ul style="list-style-type: none"> <li>- would have the experience in field of working out the novel technological methods for preparations of the novel medicines ;</li> <li>- would have the experience in assessment of market prospects for novel medicines</li> </ul>
Potential partners (name, organisation, address ...)	<ul style="list-style-type: none"> <li>- Proteome Center Rostock, University of Rostock, Schillingallee 69, D-18057 Rostock, Germany;</li> <li>- Institute of Immunology, University of Rostock, Schillingallee 68, D-18057 Rostock, Germany;</li> <li>- AstraZeneca Global;</li> <li>- Novartis Institutes for Biomedical Research;</li> <li>- Pharma Research and Early Development, Roche;</li> </ul>



## Dr Roman Romashko

PARTICIPANT			
Gender	<input checked="" type="checkbox"/> Mr	<input type="checkbox"/> Ms	Title Dr
First name	Roman		
Last name	Romashko		
Position	Senior Researcher		

ORGANISATION DETAILS					
Organisation name	Institute of Automation and Control Processes, Far Eastern Branch of Russ. Acad. of Sci.				
Street *	5, Radio				
ZIP *	690041	City *	Vladivostok	Country *	Russia
Phone *	+7-4232-555174		Fax	+7-4232-310452	
Email *	romashko@iacp.dvo.ru		Web	http://www.iacp.dvo.ru/	
Employees	<input checked="" type="checkbox"/> 1-10	<input type="checkbox"/> 11 - 50	<input type="checkbox"/> 51 - 250	<input type="checkbox"/> 250 +	
Organisation type	<input type="checkbox"/> Higher Education Institution	<input checked="" type="checkbox"/> Research Institution	<input type="checkbox"/> Industry	<input type="checkbox"/> SME	<input type="checkbox"/> other
Department	Optoelectronics				
Short description of your company or organization	R&D projects (basic, applied and innovative) in the fields of quantum electronics, laser physics, fluid & gas dynamics, surface physics, information & computer science technology, automatized control systems, World Ocean & Earth atmosphere monitoring.				

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

neurodegenerative diseases <input type="checkbox"/>	
<b>4. Contemporary socio-economic studies</b>	
Social security systems and welfare state (in the context of globalization) <input type="checkbox"/>	
Labour, labour market, and employment <input type="checkbox"/>	
Transformation of the educational system <input type="checkbox"/>	
Areas of activity ( <i>Free keywords</i> )	nanometrology, optical & fiber-optical sensors, holography, interferometry

PROJECT IDEA(S)	
Short description of project	Development of high-sensitive measurement systems for ND inspection of novel materials and novel-materials-based structures.
Description of scientific expertise offered	laser physics, quantum electronics, optoelectronics, fiber & non-linear optics
Description of technical expertise offered	fiber-optical sensors & measurement systems, dynamic holography, digital holography, adaptive interferometry
Description of requested partner scientific expertise	optics & photonics
Description of requested partner technical expertise	MEMS, NEMS, NDT, laser ultrasound, photoacoustic imaging, bio-sensors
Potential partners (name, organisation, address ...)	Alexei Kamshilin, University of Eastern Finland (Kuopio, Finland); Nikolaos Vainos, National Hellenic Research Foundation (Athens, Greece); Optoinspection Oy (Joensuu, Finland); Karsten Buse, University of Bonn (Bonn, Germany)

## Prof. Andrey Rudskoy

PARTICIPANT			
Gender	<input checked="" type="checkbox"/> Mr	<input type="checkbox"/> Ms	Title Prof.
First name	Andrey		
Last name	Rudskoy		
Position	Prof. and Vice-rector for research		

ORGANISATION DETAILS					
Organisation name	St. Petersburg State Polytechnical University				
Street *	Polytechnicheskaya 29				
ZIP *	195251	City *	St. Petersburg	Country *	Russia
Phone *	+7 812 552 67 57, +7 812 552 9714		Fax	+7 812 552 9714	
Email *	<a href="mailto:vicerector.sc@spbstu.ru">vicerector.sc@spbstu.ru</a>		Web	<a href="http://www.spbstu.ru/">http://www.spbstu.ru/</a>	
Employees	<input checked="" type="checkbox"/> 1-10	<input type="checkbox"/> 11 - 50	<input type="checkbox"/> 51 - 250	<input type="checkbox"/> 250 +	
Organisation type	<input checked="" type="checkbox"/> Higher Education Institution <input type="checkbox"/> Research Institution <input type="checkbox"/> Industry <input type="checkbox"/> SME <input type="checkbox"/> other				
Department	Faculty of material science and technology				
Short description of your company or organization	<p>Materials science and new technologies are based on the fundamentals of physics, chemistry, mathematics and the theory of control. The Faculty scientists develop new promising materials and carry out researches in wide areas of materials science introducing new physicochemical methods; mathematical simulation of various technological processes; solution of new technologies ecological problems; elaboration of new technologies such as modern casting methods for industrial and art articles; unique methods of laser, plasma-arc and electron-beam welding, hardening and coating; production of powder, amorphous and optical materials as well as precision alloys with special properties and materials for electronic devices. The Faculty has established national and international partnerships almost in all spheres of its activities.</p> <p>The results of the theoretical studies find their practical applications in many branches of industry such as steelmaking plants, foundries, automobile factories or power plants . The Faculty has developed strategic partnerships with many regional businesses, for example Severstal, OMZ Special Steels, Federal state unitary enterprise Central research institute of structural materials "PROMETEI". The results of cooperation with businesses are published in the world-recognised magazines and academic journals and they are also presented during many national and international conferences that the Faculty convenes regularly.</p>				

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

Areas of activity (*Free keywords*)      nanostructure, nanomaterials, grain refinement, plastic deformation, numerical and physical modelling, ultra fine-grained steels, rolling, extrusion, forging, ECAP, ARB, FEM

PROJECT IDEA(S)	
Short description of project	The aim of the project is to investigate deformation and thermal-speed parameters of hot and cold plastic deformation providing nano-structured state of steel with grain size less than 300 nm and determine the possible using of these parameters at the rolling equipment of industrial plants. The test subjects are low-carbon micro alloyed steels, aluminium, magnesium and zirconium alloys, strength and mechanical properties of metals, metal structure. Task of the project: determine of hot and cold plastic deformation parameters providing nano-structured state of metals; production of nano-structured using Max-strain module of the test table Gleeble 3800 by Equal Channel Angular Pressing (ECAP), Accumulative Roll Bonding (ARB), hot and cold rolling, extrusion and forging; determination of mechanical properties of deformed nano-crystalline materials, computer modelling of investigated processes.
Description of scientific expertise offered	From the many years experience of our research team point of view both numerical modelling and range of investigated research are the chances for obtaining proper and interesting results. The confirmation of achieved purposes of earlier research, projects and grants are numerous publication achievement and many industry applications in range of investigated metal forming processes.
Description of technical expertise offered	New and modern scientific equipment: rolling mill, physical simulator Gleeble3800, nanohardness testing machine HYSITRON TI 750 UBI, many testing machines (Zwick), hydraulic presses, scanning electronic microscopes and computer software based on FEM.
Description of requested partner scientific expertise	Experience in research of ECAP and ARB processes and their numerical modelling. Three high-skew rolling process experience. Cold and hot rolling, extrusion and forging processes. Cold and hot metal forming of low-carbon micro alloyed steels, aluminium, magnesium and zirconium alloys
Description of requested partner technical expertise	Three high-skew rolling mill, equipment for cold and hot rolling, extrusion and forging processes.
Potential partners (name, organisation,	Prof. Dr.-Ing. Bernd-Arno Behrens , Institute of Metal Forming and Metal-Forming Machines, Leibniz Universität Hannover, An der Universität 2, 30823 Garbsen, Germany; Prof. Dr.-Ing. Rudolf Kawalla, Institute of Metal Forming, TU Bergakademie Freiberg, Bernhard-von-Cotta-Straße 4, Germany; Prof. Henrik Dyja Czestochowa University of Technology, 42-200,

address ...)	Dabrowskiego 69, Czestochowa, Poland; Prof. Sergey Ionov, Prof. Alexandr Zinoviev, National University of Science and Technology "MISIS" (MISIS), 119049, Moscow, B-49, Leninsky prospect, 4, Russia;
--------------	---

## Prof. Sergey Smagin

PARTICIPANT			
Gender	<input checked="" type="checkbox"/> Mr	<input type="checkbox"/> Ms	Title Professor
First name	Sergey		
Last name	Smagin		
Position	Director		

ORGANISATION DETAILS					
Organisation name	Computing Center FEB RAS				
Street *	65, Kim Yu Chena str.,				
ZIP *	680000	City *	Khabarovsk	Country *	Russia
Phone *	+7-4212-227267		Fax	+7-4212-227267	
Email *	admvc@as.khb.ru		Web	www.cfebras.ru	
Employees	<input checked="" type="checkbox"/> 1-10	<input type="checkbox"/> 11 - 50	<input type="checkbox"/> 51 - 250	<input type="checkbox"/> 250 +	
Organisation type	<input type="checkbox"/> Higher Education Institution	<input checked="" type="checkbox"/> Research Institution	<input type="checkbox"/> Industry	<input type="checkbox"/> SME	<input type="checkbox"/> other
Department	Laboratory of Numerical Methods in the Mathematical Physics				
Short description of your company or organization					

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

neurodegenerative diseases <input type="checkbox"/>  <b>4. Contemporary socio-economic studies</b> Social security systems and welfare state (in the context of globalization) <input type="checkbox"/> Labour, labour market, and employment <input type="checkbox"/> Transformation of the educational system <input type="checkbox"/>
Areas of activity ( <i>Free keywords</i> )

PROJECT IDEA(S)	
Short description of project	<p>The physical properties of nanostructured materials (e.g. Ti and mesoporous SiO<sub>2</sub>) are interesting for technological applications, e.g., micro-electronic, optoelectronic, aerospace and automobile industries. This project is devoted to supercomputer quantum-mechanical computing of the influence of impurity ions on the atomic, electronic structures and elastic properties of Ti and SiO<sub>2</sub> nanostructures. Therefore, it is interesting to study the effects of the doped oxygen atom on the agglomeration process of titanium clusters.</p> <p>The incorporation of active metals (e.g. Ti, Zr, Fe, Al et al.) into the structure of mesoporous silica makes them very valuable for catalytic applications. Ti is required to investigate the affect of the local environment of the metal center on the band gap. In addition, it is necessary to understand the effect of the doped metals on the interaction of carbon monoxide (CO), carbon dioxide (CO<sub>2</sub>) and methane (CH<sub>4</sub>) with the an mesoporous materials. In this work ab initio computing is based on the density functional theory and pseudopotential theory.</p>
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 ...)	1. University of Helsinki, Department of Physics, Finland 2. PSIN CP234 Université Libre de Bruxelles Boulevard du Triomphe B-1050 Bruxelles Belgium

## Prof. Vina

PARTICIPANT			
Gender	<input checked="" type="checkbox"/> Mr	<input type="checkbox"/> Ms	Title Prof.
First name	Luis		
Last name	Vina		
Position	Full Professor of Condensed Matter Physcis		

ORGANISATION DETAILS				
Organisation name Universidad Autónoma de Madrid				
Street *C/. F Tomas y Valiente 7 (Facultad de Ciencias, C4-507)				
ZIP *E28034		City *Madrid		Country *Spain
Phone *+34914974782			Fax +34914978579	
Email *luis.vina@uam.es			Web http://www.uam.es/ultrafast	
Employees	<input checked="" type="checkbox"/> 1-10	<input type="checkbox"/> 11 - 50	<input type="checkbox"/> 51 - 250	<input type="checkbox"/> 250 +
Organisation type	<input checked="" type="checkbox"/> Higher Education Institution <input type="checkbox"/> Research Institution <input type="checkbox"/> Industry <input type="checkbox"/> SME <input type="checkbox"/> other			
Department	Física de Materiales			
Short description of your company or organization	Public University			

TOPICS OF INTEREST REGARDING THE CALL IN “COLLABORATIVE S&T PROJECTS”
Sub-topic of exercise
<p><b>1. Innovative materials and cutting edge technological processes</b></p> <p>ultrahigh-power laser sources <input type="checkbox"/></p> <p>intelligent materials and nanomaterials <input type="checkbox"/></p> <p>quantum optics <input checked="" type="checkbox"/></p> <p><b>2. Environmental research and climatic change</b></p> <p>biodiversity and ecophysiology of natural ecosystems <input type="checkbox"/></p> <p>climate change in the arctic and subarctic regions <input type="checkbox"/></p> <p>Material sciences connected with energy convergion and storage <input type="checkbox"/></p> <p><b>3. Research on serious human health problems</b></p> <p>viral infections: HIV and Hepatitis <input type="checkbox"/></p> <p>auto-immune diseases <input type="checkbox"/></p> <p>neurodegenerative diseases <input type="checkbox"/></p>



#### 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*)      Quantum information, quantum optics, semiconductor physics, spectroscopy, ultrafast processes of carriers

PROJECT IDEA(S)	
Short description of project	Semiconductor nanostructures for quantum optics and quantum information
Description of scientific expertise offered	Group with more than 20 years of experience on electronic properties of semiconductor nanostructures, formed by three subgroups: cw-spectroscopy, time-resolved spectroscopy and theory of condensed matter physics
Description of technical expertise offered	Spectroscopy and advanced techniques of quantum optics as well as computational capabilities to perform simulations
Description of requested partner scientific expertise	Complementary to those offered, with special interest on nanostructures growth and patterning. Also complementary characterization techniques
Description of requested partner technical expertise	Same as above
Potential partners (name, organisation, address ...)	Ioffe Institut (St. Petersburg), Institut For Solid State Physics, RAS (Chernogolokva), Institute of Semiconductor Physics (Novosibirsk)

**Dr Mikhailov Serguei**

PARTICIPANT					
Gender	<input checked="" type="checkbox"/> Mr	<input type="checkbox"/> Ms	Title Dr.		
First name	Mikhailov				
Last name	Serguei				
Position	CEO of start-up Creepservice Sarl, Professor HES SO				
ORGANISATION DETAILS					
Organisation name	Creepservice Sarl				
Street *	Sentier du Ministre 22				
ZIP *	2014	City *	Bole	Country *	Switzerland
Phone *	+4132930145		Fax	+41329302930	
Email *	serguei@net2000.ch		Web	www.creepservice.com	
Employees	<input checked="" type="checkbox"/> 1-10	<input type="checkbox"/> 11 - 50	<input type="checkbox"/> 51 - 250	<input type="checkbox"/> 250 +	
Organisation type	<input type="checkbox"/> Higher Education Institution <input type="checkbox"/> Research Institution <input type="checkbox"/> Industry <input checked="" type="checkbox"/> SME <input type="checkbox"/> other				
Department					
Short description of your company or organization	Manufacturing of machine for surface treatment				

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

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 and technologies for surface treatment and functionalisation, including ion beam and plasma technologies. Industrial application: selflubricating coatings, biocompatibility
Description of scientific expertise offered	Material and surface sciences.
Description of technical expertise offered	Machine building in the field of surface treatment, ion and plasma treatment
Description of requested partner scientific expertise	Material and surface sciences.
Description of requested partner technical expertise	Machine building
Potential partners (name, organisation, address ...)	Sverdlovsk University



## 28 February 2011, Ekaterinburg, Brokerage Event

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

## PROFILE FORM

PARTICIPANT			
Gender	<input checked="" type="radio"/> Mr	<input type="radio"/> Ms	Title
First name	Maxim		
Last name	Ananyev		
Position	PhD student		

ORGANISATION DETAILS				
Organisation name	Institute of High Temperature Electrochemistry of Ural Branch of Russian Academy of Sciences			
Street *	S. Kovalevskaya, 22			
ZIP * 620990	City * Yekaterinburg		Country * Russian Federation	
Phone * +7(343)362-34-84	Fax +7(343)374-59-92			
Email * <a href="mailto:wedney@yandex.ru">wedney@yandex.ru</a>	Web <a href="http://www.ihte.uran.ru">www.ihte.uran.ru</a>			
Employees	<input checked="" type="radio"/> 1-10	<input type="radio"/> 11 - 50	<input type="radio"/> 51 - 250	<input type="radio"/> 250 +
Organisation type	<input type="checkbox"/> Higher Education Institution	<input checked="" type="checkbox"/> Research Institution	<input type="checkbox"/> Industry	<input type="checkbox"/> SME <input type="checkbox"/> other
Department	Laboratory of Physico-Chemical Analytical Methods			
Short description of your company or organization	The Institute of High Temperature Electrochemistry (IHTE) of Ural Branch of Russian Academy of Sciences is one of the leading research centers in the field of physical chemistry and electrochemistry of solid electrolytes and molten salts. It was founded in 1957. Both basic and engineering studies of various electrochemical devices (SOFC, electrochemical reformers, sensors, pumps etc.) have been carried out in the IHTE.			

TOPICS OF INTEREST REGARDING THE CALL IN "COLLABORATIVE S&T PROJECTS"
Sub-topic of exercise
<b>1. Innovative materials and cutting edge technological processes</b> ultrahigh-power laser sources <input type="checkbox"/> intelligent materials and nanomaterials <input checked="" type="checkbox"/> quantum optics <input type="checkbox"/>
<b>2. Environmental research and climatic change</b> biodiversity and ecophysiology of natural ecosystems <input type="checkbox"/> climate change in the arctic and subarctic regions <input type="checkbox"/>



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 (SOFC) performance, cathodes, anodes, microstructure, kinetics, degradation, design of experiments.

PROJECT IDEA(S)	
Short description of project	<p>The main goal of the project is development of scientific basis for cathodes and anodes performance enhancement of Solid Oxide Fuel Cells (SOFC). The project is concerned with characterization and understanding of SOFCs electrochemical kinetics and degradation. This study is focused on different functional parts of SOFCs. These functional parts are chosen to be cathode and anode composite materials. The project includes:</p> <ol style="list-style-type: none"> <li>1) design of the experiments;</li> <li>2) material matching (chemical composition, microstructure, electrochemical);</li> <li>3) characterization and 3D microstructure reconstruction of cathodes and anodes in SOFC;</li> <li>4) electrochemical kinetics of cathodes, anodes and single cells;</li> <li>5) degradation tests and life-time modeling.</li> </ol> <p>The outcome of the project should be quantitative relationships between cathode and anode performance and their electrochemical behavior in SOFC including life-time modeling.</p>
Description of scientific expertise offered	Materials sciences, electrochemical kinetics, microstructure characterization and modeling, SOFC degradation.
Description of technical expertise offered	Materials synthesis, isotope exchange method, scanning electron microscopy, diffractometry, electrochemical measurements, image analysis, microstructure modeling, design of experiments.
Description of requested partner scientific expertise	Image analysis methodologies, SOFC, ceramic materials sciences, thin-layer technologies, electrochemical modeling of SOFC.
Description of requested partner technical expertise	SOFC stacks and cells production, FIB-SEM, X-Ray tomography and long-time testing.



PARTNERS	
Partners' names, organizations and addresses	<ol style="list-style-type: none"> <li>1) Robert Steinberger-Wilckens, Forschungszentrum Jülich (IEK-PBZ), 52425, Germany, Jülich, Leo-Brandt-Str.</li> <li>2) Gavriluk Alexander Lyvovich, Institute of Mathematics and Mechanics, UB RAS (IMM): 620990, Russian Federation, Yekaterinburg city, S. Kovalevskoy, 16.</li> <li>3) Florence Lefebvre-Joud, Commissariat a l'Energie Atomique, BP6 - 92265 Fontenay-aux-Roses cedex, France.</li> <li>4) Dr. Jari Kiviaho, Valtion teknillinen tutkimuskeskus, P.O. Box 1000, FI-02044 VTT, Finland.</li> <li>5) Dr. Philippe Baranek, Electricite de France, France.</li> </ol>



## 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: <b>Institute of Technical Chemistry</b>				
Street * : <b>Korolev, 3</b>				
ZIP *	<b>614013</b>	City *	<b>Perm</b>	Country * <b>Russia</b>
Phone *	<b>( 342) 237 82 69</b>		Fax	<b>(342) 237 82 62</b>
Email *	<b>e-mail: <a href="mailto:itch-uro-ran@yandex.ru">itch-uro-ran@yandex.ru</a></b>		Web	<b><a href="http://www.itch.perm.ru">http://www.itch.perm.ru</a></b>
Employees			100-110	
Organisation type	<input type="checkbox"/> Higher Education Institution <input checked="" type="checkbox"/> Research Institution <input type="checkbox"/> Industry <input type="checkbox"/> SME <input type="checkbox"/> other			
Department	<b>Ural Branch of the Russian Academy of Sciences</b>			
Short description of your company or organization	<b>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.</b>			

TOPICS OF INTEREST REGARDING THE CALL IN "COLLABORATIVE S&T PROJECTS"	
<b>1. Innovative materials and cutting edge technological processes</b> ultrahigh-power laser sources <input type="checkbox"/> intelligent materials and nanomaterials <input checked="" type="checkbox"/> quantum optics <input type="checkbox"/>	
<b>2. Environmental research and climatic change</b> biodiversity and ecophysiology of natural ecosystems <input checked="" type="checkbox"/>	



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	
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	





## 28 February 2011, Ekaterinburg, Brokerage Event

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

## PROFILE FORM

PARTICIPANT			
Gender	<input checked="" type="checkbox"/> Mr	<input type="checkbox"/> 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	<input type="checkbox"/> 1-10	<input type="checkbox"/> 11 - 50	<input type="checkbox"/> 51 - 250	<input checked="" type="checkbox"/> 250 +	
Organisation type	<input type="checkbox"/> Higher Education Institution	<input checked="" type="checkbox"/> Research Institution	<input type="checkbox"/> Industry	<input type="checkbox"/> SME	<input type="checkbox"/> 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
<b>1. Innovative materials and cutting edge technological processes</b> ultrahigh-power laser sources <input type="checkbox"/> intelligent materials and nanomaterials <input checked="" type="checkbox"/> quantum optics <input checked="" type="checkbox"/>
<b>2. Environmental research and climatic change</b> biodiversity and ecophysiology of natural ecosystems <input type="checkbox"/> climate change in the arctic and subarctic regions <input type="checkbox"/> Material sciences connected with energy conversion and storage <input checked="" type="checkbox"/>



### 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	



## 28 February 2011, Ekaterinburg, Brokerage Event

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

## PROFILE FORM

PARTICIPANT			
Gender	<input checked="" type="checkbox"/> Mr	<input type="checkbox"/> Ms	Title Dr.
First name	Vyacheslav		
Last name	Marchenkov		
Position	Leading Researcher		

ORGANISATION DETAILS					
Organisation name	Institute of Metal Physics				
Street *	Kovalevskaya, 18				
ZIP *	620041	City *	Ekaterinburg	Country *	Russia
Phone *	+7-343 378 35 04		Fax	+7-343 374 52 44	
Email *	march@imp.uran.ru		Web		
Employees	<input checked="" type="checkbox"/> 1-10	<input type="checkbox"/> 11 - 50	<input type="checkbox"/> 51 - 250	<input checked="" type="checkbox"/> 250 +	
Organisation type	<input type="checkbox"/> Higher Education Institution <input checked="" type="checkbox"/> Research Institution <input type="checkbox"/> Industry <input type="checkbox"/> SME <input type="checkbox"/> other				
Department	Low Temperature Physics				
Short description of your company or organization	Basic and applied researches of structure and physical properties of metallic systems				

TOPICS OF INTEREST REGARDING THE CALL IN "COLLABORATIVE S&T PROJECTS"	
Sub-topic of exercise	
<b>1. Innovative materials and cutting edge technological processes</b> ultrahigh-power laser sources <input type="checkbox"/> intelligent materials and nanomaterials <input checked="" type="checkbox"/> quantum optics <input type="checkbox"/>	
<b>2. Environmental research and climatic change</b> biodiversity and ecophysiology of natural ecosystems <input type="checkbox"/> climate change in the arctic and subarctic regions <input type="checkbox"/>	



<p>Material sciences connected with energy convergion and storage <input type="checkbox"/></p> <p><b>3. Research on serious human health problems</b>  viral infections: HIV and Hepatitis <input type="checkbox"/>  auto-immune diseases <input type="checkbox"/>  neurodegenerative diseases <input type="checkbox"/></p> <p><b>4. Contemporary socio-economic studies</b>  Social security systems and welfare state (in the context of globalization) <input type="checkbox"/>  Labour, labour market, and employment <input type="checkbox"/>  Transformation of the educational system <input type="checkbox"/></p>
<p>Areas of activity (<i>Free keywords</i>)</p>

PROJECT IDEA(S)	
Short description of project	Development and creation of new Heusler alloys based on 3d-metals and metal-ceramic compounds based on Ti by methods of severe plastic deformation, pressure treatment and integrated doping for technical applications
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	



## 28 February 2011, Ekaterinburg, Brokerage Event

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

## PROFILE FORM

PARTICIPANT			
Gender	<input checked="" type="checkbox"/> Mr	<input type="checkbox"/> Ms	Title Ph.D. in Geology
First name	Vyacheslav		
Last name	Muftakhov		
Position	Scientific Secretary		

ORGANISATION DETAILS				
Organisation name	Institute of Mineralogy of the Ural Branch of the Russian Academy of Sciences			
Street *				
ZIP * 456317	City * Miass	Country * Russian Federation		
Phone * +7 3513 573562	Fax +7 3513 570286			
Email * anfilogov@mineralogy.ru	Web http://www.mineralogy.ru			
Employees	<input type="checkbox"/> 1-10	<input type="checkbox"/> 11 - 50	<input checked="" type="checkbox"/> 51 - 250	<input type="checkbox"/> 250 +
Organisation type	<input type="checkbox"/> Higher Education Institution <input checked="" type="checkbox"/> Research Institution <input type="checkbox"/> Industry <input type="checkbox"/> SME <input type="checkbox"/> other			
Department	Ural Branch of the Russian Academy of Sciences			
Short description of your company or organization	Institute investigations are conducted ore-forming processes; material composition and structure of the Earth, the Moon and other planets are studied. Experimental investigations are conduct physical and chemical problems of geological processes. Large body of research is devoted to synthesis of new substances, to the development of materials with the pre-determined properties; to creation of geoinformation systems.			

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



Material sciences connected with energy convergion and storage <input type="checkbox"/>
<b>3. Research on serious human health problems</b> viral infections: HIV and Hepatitis <input type="checkbox"/> auto-immune diseases <input type="checkbox"/> neurodegenerative diseases <input type="checkbox"/>
<b>4. Contemporary socio-economic studies</b> Social security systems and welfare state (in the context of globalization) <input type="checkbox"/> Labour, labour market, and employment <input type="checkbox"/> Transformation of the educational system <input type="checkbox"/>
Areas of activity ( <i>Free keywords</i> ) <i>Quartz, quartz glass, alloyed glasses, experimental fusion</i>

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	



## 28 February 2011, Ekaterinburg, Brokerage Event

### ERA.Net-RUS Pilot Joint Call

### For Collaborative S&T Projects

## PROFILE FORM

PARTICIPANT			
Gender	<input checked="" type="checkbox"/> Mr	<input type="checkbox"/> Ms	Title Prof
First name	Nikolay		
Last name	Mushnikov		
Position	Head of Laboratory		

ORGANISATION DETAILS					
Organisation name	Institute of Metal Physics, Ural Branch of RAS				
Street *	S. Kovalevskaya, 18				
ZIP *	620990	City *	Ekaterinburg	Country *	Russia
Phone *	+7-343-3783675		Fax	+7-343-3745244	
Email *	mushnikov@imp.uran.ru		Web		
Employees	<input type="checkbox"/> 1-10	<input type="checkbox"/> 11 - 50	<input type="checkbox"/> 51 - 250	<input checked="" type="checkbox"/> 250 +	
Organisation type	<input type="checkbox"/> Higher Education Institution	<input checked="" type="checkbox"/> Research Institution	<input type="checkbox"/> Industry	<input type="checkbox"/> SME	<input type="checkbox"/> other
Department	Magnetic Materials				
Short description of your company or organization	Institute of Metal Physics, Russian Academy of Sciences-Ural Division, is the biggest Institute of Physics away of Moscow. The main topics are materials science, magnetism, electronic physics and nondestructive testing.				

TOPICS OF INTEREST REGARDING THE CALL IN "COLLABORATIVE S&T PROJECTS"
Sub-topic of exercise
<b>1. Innovative materials and cutting edge technological processes</b> ultrahigh-power laser sources <input type="checkbox"/> intelligent materials and nanomaterials <input checked="" type="checkbox"/> quantum optics <input type="checkbox"/>
<b>2. Environmental research and climatic change</b> biodiversity and ecophysiology of natural ecosystems <input type="checkbox"/> climate change in the arctic and subarctic regions <input type="checkbox"/>



Material sciences connected with energy convergion and storage <input type="checkbox"/>
<b>3. Research on serious human health problems</b> viral infections: HIV and Hepatitis <input type="checkbox"/> auto-immune diseases <input type="checkbox"/> neurodegenerative diseases <input type="checkbox"/>
<b>4. Contemporary socio-economic studies</b> Social security systems and welfare state (in the context of globalization) <input type="checkbox"/> Labour, labour market, and employment <input type="checkbox"/> Transformation of the educational system <input type="checkbox"/>
Areas of activity ( <i>Free keywords</i> )      magnetic nanomaterials, coercivity, strength, plasticity, structure

PROJECT IDEA(S)	
Short description of project	This project deals with the development of multi-functional materials exhibiting a high mechanical strength together with a high coercivity and a strong magnetization. These materials are nanostructured in such a way that the dislocation mobility is reduced (increase of the yield strength) and the size of magnetic domains is minimized (increase of the coercivity). Several systems will be investigated during this project: Fe-Cr-Co-W-Ga, SmCo7, NdFe7 and Nd2Fe14B alloys. The realization of the project will provide advancement to the purposeful influence on the structure by means of varying the regimes of treatments and choice of alloying elements.
Description of scientific expertise offered	We have a great experience in synthesis of different alloys and intermetallic compounds an investigation of the structure and related magnetic properties. Recent publications on the topic include: G.V.Ivanova, N.N.Shchegoleva, V.V.Serikov, N.M.Kleinerman, E.V.Belozarov. Structure of a W-enriched phase in Fe-Co-Cr-W-Ga alloys. J. Alloys and Compounds, 2011, v. 509, p. 1809; N.M.Kleinerman, E.V.Belozarov, N.V.Mushnikov, V.V.Serikov. Moessbauer study of structure changes in Fe-Co-Cr alloys upon their alloying with W and Ga. Journal of Physics: Conference Series, 2010, v. 217, p. 012129; A.G. Popov, N.V. Kudrevatykh, V.P. Vyatkin, D.Yu. Vasilenko, D. Yu. Bratushev, T.Z. Puzanova, and E.G. Gerasimov. Preparation of High-Power Permanent Magnets from Platelike Nd-Fe-B Alloys. Phys. Met. Metallogr., 2010, v. 217, p. 238-246.
Description of technical expertise offered	Sample preparation techniques, severe plastic deformation, splat cooling, electron microscopy, X-ray diffraction, magnetization and coercivity measurements, high-field magnetization studies, Moessbauer spectroscopy, mechanical testing.
Description of requested partner scientific expertise	Nanostructure studies, experience in local chemical composition determination, hyperfine interactions
Description of requested partner technical expertise	Atom 3d-probe, atomic force microscopy, Moessbauer spectroscopy in magnetic field and at low temperature, nuclear magnetic resonance, nanoprobe energy dispersive X-ray analysis.
PARTNERS	
Partners' names, organizations and addresses	Prof. Sauvage Xavier, Groupe de Physique des Materiaux – UMR CNRS 6634, Faculte des Sciences, Universite de Rouen, BP12, 76801 St Etienne du Rouvray, Charge de recherche CNRS. Tel: + 33 (0)2 32 95 51 42. E-mail: xavier.sauvage@univ-rouen.fr





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

### PROFILE FORM

PARTICIPANT			
Gender	<input checked="" type="checkbox"/> Mr		Title <b>no</b>
First name	<b>Evgueni</b>		
Last name	<b>Naimushin</b>		
Position	<b>International Officer</b>		

ORGANISATION DETAILS					
Organisation name: <b>Institute of Technical Chemistry</b>					
Street * : <b>Korolev, 3</b>					
ZIP *	<b>614013</b>	City *	<b>Perm</b>	Country *	<b>Russia</b>
Phone *	<b>( 342) 237 82 75</b>		Fax	<b>(342) 237 82 62</b>	
Email *	<b>e-mail: <a href="mailto:international@itch.perm.ru">international@itch.perm.ru</a></b>		Web	<b><a href="http://www.itch.perm.ru">http://www.itch.perm.ru</a></b>	
Employees			100-110		
Organisation type	<input type="checkbox"/> Higher Education Institution <input checked="" type="checkbox"/> Research Institution <input type="checkbox"/> Industry <input type="checkbox"/> SME <input type="checkbox"/> other				
Department	<b>Ural Branch of the Russian Academy of Sciences</b>				
Short description of your company or organization	<b>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.</b>				

TOPICS OF INTEREST REGARDING THE CALL IN "COLLABORATIVE S&T PROJECTS"
<b>1. Innovative materials and cutting edge technological processes</b> ultrahigh-power laser sources <input type="checkbox"/> intelligent materials and nanomaterials <input checked="" type="checkbox"/> quantum optics <input type="checkbox"/>
<b>2. Environmental research and climatic change</b>



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	
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	



## 28 February 2011, Ekaterinburg, Brokerage Event

### ERA.Net-RUS Pilot Joint Call

### For Collaborative S&T Projects

## PROFILE FORM

PARTICIPANT			
Gender	<u>Mr.</u>	<input checked="" type="checkbox"/> Ms	Title <u>Prof.</u>
First name	Alexander		
Last name	Nosov		
Position	Head of the Laboratory		

ORGANISATION DETAILS				
Organisation name	Institute of Metal Physics, Ural Division of the Russian Academy of Sciences			
Street *	S.Kovalevskoi str.18			
ZIP * 620990	City * Ekaterinburg		Country * Russia	
Phone * +7-343-378-35-87	Fax +7-343-374-52-44			
Email * nossov@imp.uran.ru	Web			
Employees	<input checked="" type="checkbox"/> 1-10	<input type="checkbox"/> 11 - 50	<input type="checkbox"/> 51 - 250	<input type="checkbox"/> 250 +
Organisation type	<input type="checkbox"/> Higher Education Institution	<input checked="" type="checkbox"/> <u>Research Institution</u>	<input type="checkbox"/> Industry	<input type="checkbox"/> SME <input type="checkbox"/> other
Department	Electron spectroscopy Laboratory			
Short description of your company or organization	Fundamental research in material science			

TOPICS OF INTEREST REGARDING THE CALL IN "COLLABORATIVE S&T PROJECTS"	
Sub-topic of exercise	
<b>1. Innovative materials and cutting edge technological processes</b> ultrahigh-power laser sources <input type="checkbox"/> <u>intelligent materials and nanomaterials</u> quantum optics <input type="checkbox"/>	
<b>2. Environmental research and climatic change</b> biodiversity and ecophysiology of natural ecosystems <input type="checkbox"/> climate change in the arctic and subarctic regions <input type="checkbox"/>	



<p>Material sciences connected with energy convergion and storage <input type="checkbox"/></p> <p><b>3. Research on serious human health problems</b>  viral infections: HIV and Hepatitis <input type="checkbox"/>  auto-immune diseases <input type="checkbox"/>  neurodegenerative diseases <input type="checkbox"/></p> <p><b>4. Contemporary socio-economic studies</b>  Social security systems and welfare state (in the context of globalization) <input type="checkbox"/>  Labour, labour market, and employment <input type="checkbox"/>  Transformation of the educational system <input type="checkbox"/></p>
<p>Areas of activity (<i>Free keywords</i>)      magnetic nanostructures, thin films</p>

PROJECT IDEA(S)	
Short description of project	Preparation of magnetic nanostructures and thin films and investigations of their properties
Description of scientific expertise offered	Studies of magnetic, structural, and transport properties of nanostructured materials
Description of technical expertise offered	Preparation of magnetic nanomaterials and thin film structures by variety of techniques
Description of requested partner scientific expertise	Organization for fundamental research in the field of magnetic nanomaterials
Description of requested partner technical expertise	Possibilities for preparation of thin film magnetic nanostructures
PARTNERS	
Partners' names, organizations and addresses	



## 28 February 2011, Ekaterinburg, Brokerage Event

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

## PROFILE FORM

PARTICIPANT			
Gender	<input checked="" type="checkbox"/> Mr	<input type="checkbox"/> 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	<input checked="" type="checkbox"/> 1-10	<input type="checkbox"/> 11 - 50	<input type="checkbox"/> 51 - 250	<input type="checkbox"/> 250 + +
Organisation type	<input type="checkbox"/> Higher Education Institution	<input checked="" type="checkbox"/> Research Institution	<input type="checkbox"/> Industry	<input type="checkbox"/> SME <input type="checkbox"/> 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
<b>1. Innovative materials and cutting edge technological processes</b> ultrahigh-power laser sources <input type="checkbox"/> intelligent materials and nanomaterials <input type="checkbox"/> + quantum optics <input type="checkbox"/>
<b>2. Environmental research and climatic change</b> biodiversity and ecophysiology of natural ecosystems <input type="checkbox"/>



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	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 or 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	



## 28 February 2011, Ekaterinburg, Brokerage Event

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

## PROFILE FORM

PARTICIPANT			
Gender	<input checked="" type="checkbox"/> Mr	<input type="checkbox"/> 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	<input type="checkbox"/> 1-10	<input checked="" type="checkbox"/> 11 - 50	<input type="checkbox"/> 51 - 250	<input type="checkbox"/> 250 +
Organisation type	<input type="checkbox"/> Higher Education Institution	<input checked="" type="checkbox"/> Research Institution	<input type="checkbox"/> Industry	<input type="checkbox"/> SME <input type="checkbox"/> 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
<b>1. Innovative materials and cutting edge technological processes</b> ultrahigh-power laser sources <input type="checkbox"/> <input checked="" type="checkbox"/> intelligent materials and nanomaterials <input type="checkbox"/> <input checked="" type="checkbox"/> quantum optics <input type="checkbox"/>
<b>2. Environmental research and climatic change</b> biodiversity and ecophysiology of natural ecosystems <input type="checkbox"/>



climate change in the arctic and subarctic regions ☐

Material sciences connected with energy conversion 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	





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

### PROFILE FORM

PARTICIPANT			
Gender	<input checked="" type="checkbox"/> Mr		Title <b>doctor of science</b>
First name	<b>Viktor</b>		
Last name	<b>Valtsifer</b>		
Position	<b>Science Deputy Director</b>		

ORGANISATION DETAILS					
Organisation name: <b>Institute of Technical Chemistry</b>					
Street * : <b>Korolev, 3</b>					
ZIP *	<b>614013</b>	City *	<b>Perm</b>	Country *	<b>Russia</b>
Phone *	<b>( 342) 237 82 50</b>		Fax	<b>(342) 237 82 62</b>	
Email *	e-mail: <a href="mailto:itc-ras.perm@mail.ru">itc-ras.perm@mail.ru</a> <a href="mailto:valtsiferv@mail.ru">valtsiferv@mail.ru</a>		Web	<a href="http://www.itch.perm.ru">http://www.itch.perm.ru</a>	
Employees			100-110		
Organisation type	<input type="checkbox"/> Higher Education Institution <input checked="" type="checkbox"/> Research Institution <input type="checkbox"/> Industry <input type="checkbox"/> SME <input type="checkbox"/> other				
Department	<b>Ural Branch of the Russian Academy of Sciences</b>				
Short description of your company or organization	<b>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.</b>				

TOPICS OF INTEREST REGARDING THE CALL IN "COLLABORATIVE S&T PROJECTS"	
Sub-topic of exercise: mesoporous composites, silica, aluminum oxide	
<b>1. Innovative materials and cutting edge technological processes</b> ultrahigh-power laser sources <input type="checkbox"/> intelligent materials and nanomaterials <input checked="" type="checkbox"/> quantum optics <input type="checkbox"/>	



## 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	<p><b>Synthesis and physico-chemical properties of mesoporous composites on the basis of silica and aluminum oxide; application of these materials in oil-refining industry</b></p> <p>Mesoporous materials based on silica and possessing ordered porous structure with high specific surface of pores are promising as catalysts and carriers for catalysts, sorbents, selective membranes, sensors and systems for address delivery of medications. Wide range of these materials' applications is due to peculiarities of template sol-gel synthesis enabling to control structural and textural properties of mesoporous silica by altering composition of reaction medium, of components' ratio and temperature-time mode of synthesis, by inducing functional organic-silane additives during the synthesis process.</p> <p>Structure formation processes of mesoporous silica synthesized in aqueous-alkali, alcohol-ammoniac and acid mediums have been investigated. The influence of temperature-time parameters on structural and textural characteristics of mesoporous silica has been monitored. The influence of organic-silane additives on structural and textural characteristics of mesoporous silica has been investigated. Metal-oxide compositions on the basis of silica with oxides of zinc, nickel, titanium, aluminum, iron, copper and zirconium has been produced. Results demonstrate a wide range of applications for these materials among which the use of these in oil-refining industry seems to require further research work jointly with a foreign partner.</p>
Description of scientific expertise offered	<p>During the research work, 14 articles have been published including 3 articles in periodical journals, 11 presentations made on conferences (including international conferences), 1 patent application has been submitted.</p>
Description of technical expertise	<p>Produced materials are planned on using in various catalytic and sorption processes in oil-refining industry, as builders for polymers and for address delivery of medications.</p>



offered	
Description of requested partner scientific expertise	Research and production companies of appropriate profile.
Description of requested partner technical expertise	Oil-refining enterprises, manufacturers of polymers, pharmaceutical companies
<b>PARTNERS</b>	
Partners' names, organizations and addresses	To be learned yet.



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

### PROFILE FORM

PARTICIPANT			
Gender	<input checked="" type="checkbox"/> Mr	<input type="checkbox"/> 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		
<input checked="" type="checkbox"/> CheckBox1					
Employees	<input checked="" type="checkbox"/> 1-10	<input type="checkbox"/> 11 - 50	<input type="checkbox"/> 51 - 250	<input type="checkbox"/> 250 +	
Organisation type	<input checked="" type="checkbox"/> Higher Education Institution <input checked="" type="checkbox"/> Research Institution <input type="checkbox"/> Industry <input type="checkbox"/> SME <input type="checkbox"/> 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
<b>1. Innovative materials and cutting edge technological processes</b> ultrahigh-power laser sources <input type="checkbox"/> intelligent materials and nanomaterials <input checked="" type="checkbox"/> quantum optics <input type="checkbox"/>
<b>2. Environmental research and climatic change</b> biodiversity and ecophysiology of natural ecosystems <input checked="" type="checkbox"/> climate change in the arctic and subarctic regions <input type="checkbox"/>



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	<p>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.</p>
Description of scientific expertise offered	<p>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.</p> <p>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 <i>Nanobiotechnology &amp; Bioremediation</i> 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</p>



	<p>inimitably specialized bacteria that use organohalogen compounds for energy conservation in a process called dehalorespiration (<i>e.g.</i>, by <i>Dehalococcoides</i> 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 <i>real-time</i> 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.</p>
Description of technical expertise offered	<p>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 (<i>in situ</i> hybridization [FISH und CARD-FISH], epifluorescence microscopy, confocal laserscanning microscopy, electron microscopy).</p>
Description of requested partner scientific expertise	
Description of requested partner technical expertise	
Potential partners (name, organisation, address ...)	<p>Justus Liebig University of Giessen, Germany, Research Centre for BioSystems, Land Use and Nutrition (IFZ), Rolf-Alexander Düring</p> <p>Tomsk Polytechnic University, Russia, Division of Nanomaterials and Nanotechnologies, Anna Yu. Godymchuk and Vladimir An</p> <p>University of Innsbruck, Austria, Institute for Ion Physics &amp; Applied Physics, Atmospheric Chemistry and Indoor Air Chemistry, Armin Wisthaler</p>





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

## PROFILE FORM

PARTICIPANT			
Gender	<input checked="" type="radio"/> Mr	<input type="radio"/> Ms	Title Prof. Dr.
First name	Lothar		
Last name	Heinrich		
Position	CEO		

ORGANISATION DETAILS					
Organisation name	marcotech oHG Marketing, Controlling & Technology Management				
Street *	Heisenbergstr. 11				
ZIP *	48149	City *	Muenster	Country *	Germany
Phone *	+49 251 836 3410		Fax	+49 251 836 3412	
Email *	lothar.heinrich@marcotech.de		Web	www.marcotech.de	
Employees	<input checked="" type="radio"/> 1-10	<input type="radio"/> 11 - 50	<input type="radio"/> 51 - 250	<input type="radio"/> 250 +	
Organisation type	<input type="checkbox"/> Higher Education Institution <input type="checkbox"/> Research Institution <input type="checkbox"/> Industry <input checked="" type="checkbox"/> SME <input type="checkbox"/> other				
Department	Scientific-technical coaching				
Short description of your company or organization	marcotech provides training programmes for professionals and students in the field of applied nanotechnology, nanoanalytics and material processing.				

TOPICS OF INTEREST REGARDING THE CALL IN "COLLABORATIVE S&T PROJECTS"	
Sub-topic of exercise	
<b>1. Innovative materials and cutting edge technological processes</b> ultrahigh-power laser sources <input type="checkbox"/> intelligent materials and nanomaterials <input checked="" type="checkbox"/> quantum optics <input type="checkbox"/>	
<b>2. Environmental research and climate change</b> biodiversity and ecophysiology of natural ecosystems <input type="checkbox"/> climate change in the arctic and subarctic regions <input type="checkbox"/>	





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) nanotechnology, nano-engineered catalysts, nanoparticles, nanotechnology for medicine

## PROJECT IDEA(S)

Short description of project	Organization and creation of an international educational and training school (or bilaterally organised with Russian partners) for applied nanotechnology in order to intensify the transfer of scientific results to innovative nano-enabled products. A combination with a virtual training centre (electronic access) served by international experts is considered.
Description of scientific expertise offered	Scientific and practical experiences of many years in industrial heterogeneous catalysis, successful research projects on nano-enabled catalysts for oil processing, as well as on drug-delivery systems; lectureship on medical technology at the University Muenster (Germany) and Kiev (Ukraine).
Description of technical expertise offered	Preparation of inorganic and organic nanomaterials, modified heterogeneous catalysts, mechanical and chemical modification of materials, development of technical processes and economic analysis; additional: experienced in trainings and conference organization; laboratory provides devices for the preparation and modification of nanoparticles, analytical methods like DLS, SEM, TEM, AFM and typical spectroscopy.
Description of requested partner scientific expertise	Experienced in applied nanotechnology (catalysis, medical application, polymer chemistry) and modern educational methods
Description of requested partner technical expertise	Partners should provide experiences based on own equipment and projects, as well as should be familiar with the process development in industrial scale. Experiences in collaboration with industrial partners would be useful. Furthermore, the partners should provide expertise in distant learning, teaching and trainings, and should be ready and equipped for the joint development of a virtual training centre.
Potential partners (name, organisation, address ...)	Prof. W. Reschetilowski, Institute for Industrial Chemistry, Dresden University of Technology, 01062 Dresden (Germany); Dr. Oleg L. Khasanov, Tomsk Polytechnical University, Centre Nanomaterials & Nanotechnologies (Russia); Dr. Gabriele Gorzka, Ost-West-Wissenschaftszentrum University Kassel (Germany); Prof. Dr. Y. Tretyakov, Dept. Material Science, Moscow State University (Russia); Prof. P. Kopjev, Ioffe Institute, Saint Peterburg (Russia); Boreskov Institute for Catlysis, Novosibirsk (Russia); Dr. P. Grambow, Nanoinitiative Bayern GmbH, 97218 Gerbrunn (Germany); Dr. H. Winter, Center for Nanotechnology, Heisenbergstr. 11, 48149 Muenster (Germany)





## 28 February 2011, Ekaterinburg, Brokerage Event

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

## PROFILE FORM

PARTICIPANT			
Gender	<input checked="" type="checkbox"/> Mr	<input type="checkbox"/> Ms	Title Prof. Dr.-Ing.
First name: Andreas			
Last name: Jahr			
Position: Institute Director			

ORGANISATION DETAILS				
Organisation name FH-Duesseldorf University of Applied Sciences				
Street * Josef-Gockeln-Str. 9				
ZIP * 40764		City * Duesseldorf		Country * Germany
Phone * +49(0) 211 4351 420			Fax: +49(0) 211 4351 423	
Email * andreas.jahr@fh-duesseldorf.de			Web: www.fmdauto.de	
Employees	<input type="checkbox"/> 1-10	<input checked="" type="checkbox"/> 11 - 50	<input type="checkbox"/> 51 - 250	<input type="checkbox"/> 250 +
Organisation type	<input checked="" type="checkbox"/> Higher Education Institution	<input checked="" type="checkbox"/> Research Institution	<input type="checkbox"/> Industry	<input type="checkbox"/> SME
Department	FMDauto			
Short description of your company or organization	FMDauto – Institute of Product Development and Innovation			

TOPICS OF INTEREST REGARDING THE CALL IN "COLLABORATIVE S&T PROJECTS"	
Sub-topic of exercise	
<b>1. Innovative materials and cutting edge technological processes</b> ultrahigh-power laser sources <input type="checkbox"/> intelligent materials and nanomaterials <input checked="" type="checkbox"/> quantum optics <input type="checkbox"/>	
<b>2. Environmental research and climatic change</b> biodiversity and ecophysiology of natural ecosystems <input type="checkbox"/> climate change in the arctic and subarctic regions <input type="checkbox"/>	



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 projects	<p>I. Novel method for modifying of the nano-relief of friction surfaces by using surface-active compounds for improving the sliding properties in by dry and mixed friction. The suggested method includes: 1) Analysis of the compounds of various molecular compositions. Development of compounds for nano-modification of friction surfaces of various technical applications by using statistical analysis of the specific system parametric. 2) Method for application of the active substance on the technical surfaces.</p> <p>A cost effective method to improve the sliding properties of the friction pairs. Previous internal studies show the following results: - the surface energy of 2-4 mN / m; - unit load - up to 3000 N/mm<sup>2</sup>; - Maximum operating temperature 450°C (in short-term work to 700°C).</p> <p>II. Novel method for depositing of the superhard nanostructured coatings for cutting tools and machine components. The suggested method includes: 1) Utilization of plasma generated by a set of cathodic arc sources, based on the principle of plasma accelerator. 2) The above mentioned plasma sources are featuring the implementation of the revolutionary reactive gas-controlled arc (RGCA) technology and allow depositing of extremely smooth and hard nc-M<sub>n</sub>N/a-Si<sub>3</sub>N<sub>4</sub> (M-Ti, Zr, V and so on) and other nanostructured coatings.</p> <p>The method is a cost effective alternative for a conventional arc methods currently based on utilization of expensive multi-component cathodes /targets manufactured by methods of powder metallurgy. The basic benefit of the RGCA technology is depositing smooth coatings without utilization of expensive plasma filters which significantly reduce coating deposition rate.</p> <p>Deliverables: 1) Design (and construction) of a prototype of an industrial PVD system for a large volume production of nanocomposite coatings for heavy duty cutting tools and components. 2) Development of the system software for process control. 3) Development of optimal regimes dedicated to some specific applications. 4) Recommendation of a peripheral set of equipment for PVD system integration into production.</p>
	I.



Description of scientific expertise offered	<p>Systematic analysis of the effectiveness of anti-friction nanocomposites in the problems of energy efficiency, increase service life, durability and reduction of vibration of objects of mechanical engineering, shipbuilding, transport, agricultural machinery, processing equipment and cutting tools.</p> <p>II. Design of novel architecture of superhard nanocomposite coatings. Modern methods of analysis of composition and structure of nano-materials. Formulation of design concepts of plasma systems and process parameters for robust and reproducible coating deposition process. Process optimization by design of experiments and neural networks techniques.</p>
Description of technical expertise offered	<p>I. System analysis based on the results of field tests and specific implementations for the most characteristic objects of different materials (metals, polymers, rubber), operating modes and operating conditions.</p> <p>II. Expertise in PVD system design and manufacturing. Developing software for process control and plasma monitoring /diagnostics. Turnkey approach to system integration into production. Evaluation of coating mechanical properties. Utilization of MATLAB toolboxes for statistical process control and optimization (DOE and Neural Networks).</p>
Description of requested partner scientific expertise	FH-Duesseldorf University of Applied Sciences. Duesseldorf, Germany.
Description of requested partner technical expertise	CDEC Center of Diagnostics, Examination and Certification. St. Petersburg, Russia.
Potential partners (name, organisation, address ...)	open



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

### PROFILE FORM

PARTICIPANT			
Gender	<input checked="" type="checkbox"/> Mr	<input type="checkbox"/> Ms	Title Dr.
First name	Christoph		
Last name	Riethmüller		
Position	Founder, CEO		

ORGANISATION DETAILS				
Organisation name	Serend-ip GmbH			
Street *	Heisenbergstrasse 11			
ZIP * 48149	City * Münster	Country *	Germany	
Phone * 0049 251 8363440	Fax			
Email * <a href="mailto:info@serend-ip.de">info@serend-ip.de</a>	Web <a href="http://www.serend-ip.com">www.serend-ip.com</a>			
Employees	<input checked="" type="checkbox"/> 1-10 X	<input type="checkbox"/> 11 - 50	<input type="checkbox"/> 51 - 250	<input type="checkbox"/> 250 +
Organisation type	Higher Education Institution	Research Institution	Industry	SME X other
Department				
Short description of your company or organization	High Tech Start up Nanobiological Analysis of Cells			

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



1. Innovative materials and cutting edge technological processes  
Atomic force Microscopy

3. Research on serious human health problems  
Patho-Physiology of cultivated cells, pattern analysis

Areas of activity (Free keywords) High Content Analysis for Cell Culture, Contract Research

## PROJECT IDEA(S)

Short description of project	Develop and establish phenotypic „cell based assays“ for drug profiling
Description of scientific expertise offered	Physiological function and Quality assessment for drug testing
Description of technical expertise offered	Quantitative Pattern Analysis of nanoscale cell topography, Atomic force Microscopy
Description of requested partner scientific expertise	Cell Biology, Drug Development, Drug safety
Description of requested partner technical expertise	Cell biological assays, High Content Screening, Drug profiling expertise
Potential partners (name, organisation, address ...)	



## PROFILE FORM

PARTICIPANT			
Gender	<input checked="" type="checkbox"/> Mr	<input type="checkbox"/> 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	<input checked="" type="checkbox"/> 1-10	<input type="checkbox"/> 11 - 50	<input type="checkbox"/> 51 - 250	<input type="checkbox"/> 250 +
Organisation type	<input checked="" type="checkbox"/> Higher Education Institution <input checked="" type="checkbox"/> Research Institution <input type="checkbox"/> Industry <input type="checkbox"/> SME <input type="checkbox"/> 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
<p><b>1. Innovative materials and cutting edge technological processes</b>            ultrahigh-power laser sources <input checked="" type="checkbox"/>            intelligent materials and nanomaterials <input checked="" type="checkbox"/>            quantum optics <input checked="" type="checkbox"/></p> <p><b>2. Environmental research and climatic change</b>            biodiversity and ecophysiology of natural ecosystems <input type="checkbox"/>            climate change in the arctic and subarctic regions <input type="checkbox"/>            Material sciences connected with energy conversion and storage <input checked="" type="checkbox"/></p> <p><b>3. Research on serious human health problems</b>            viral infections: HIV and Hepatitis <input type="checkbox"/>            auto-immune diseases <input type="checkbox"/>            neurodegenerative diseases <input type="checkbox"/></p> <p><b>4. Contemporary socio-economic studies</b></p>



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 for confinement 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 $0.001 \text{ cm}^{-1}$ ) broad-band ( $10 - 40000 \text{ cm}^{-1}$ ) Fourier spectrometers, absorption measurements in a broad range ( $1.5 - 450 \text{ K}$ ) of stabilized temperatures using polarized light and magnetic field (up to $8 \text{ T}$ ), 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.



## PROFILE FORM

PARTICIPANT			
Gender	<input checked="" type="checkbox"/> Mr	<input type="checkbox"/> 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	<input checked="" type="checkbox"/> 1-10	<input type="checkbox"/> 11 - 50	<input type="checkbox"/> 51 - 250	<input type="checkbox"/> 250 +
Organisation type	<input checked="" type="checkbox"/> Higher Education Institution <input checked="" type="checkbox"/> Research Institution <input type="checkbox"/> Industry <input type="checkbox"/> SME <input type="checkbox"/> 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
<p><b>1. Innovative materials and cutting edge technological processes</b>            ultrahigh-power laser sources <input checked="" type="checkbox"/>            intelligent materials and nanomaterials <input checked="" type="checkbox"/>            quantum optics <input checked="" type="checkbox"/></p> <p><b>2. Environmental research and climatic change</b>            biodiversity and ecophysiology of natural ecosystems <input type="checkbox"/>            climate change in the arctic and subarctic regions <input type="checkbox"/>            Material sciences connected with energy conversion and storage <input checked="" type="checkbox"/></p> <p><b>3. Research on serious human health problems</b>            viral infections: HIV and Hepatitis <input type="checkbox"/>            auto-immune diseases <input type="checkbox"/>            neurodegenerative diseases <input type="checkbox"/></p> <p><b>4. Contemporary socio-economic studies</b></p>





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 for confinement 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 $0.001 \text{ cm}^{-1}$ ) broad-band ( $10 - 40000 \text{ cm}^{-1}$ ) Fourier spectrometers, absorption measurements in a broad range ( $1.5 - 450 \text{ K}$ ) of stabilized temperatures using polarized light and magnetic field (up to $8 \text{ T}$ ), 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.



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

### PROFILE FORM

EXPERT DETAILS			
Gender	<input checked="" type="checkbox"/> Mr	<input type="checkbox"/> Ms	Title Dr.
First name	Veniamin		
Last name	Kondratiev		
Position	Professor		

ORGANISATION DETAILS					
Organisation name	Chemical department St. Petersburg State University				
Street *	Universitetskii pr.26				
ZIP *	198504	City *	Petrodvoretz, St.Petersburg	Country *	Russia
Phone *	007(812)4286900		Fax		007(812)4286900
Email *	vkondratiev@mail.ru		Web		
Employees	<input checked="" type="checkbox"/> 1-10	<input type="checkbox"/> 11 - 50	<input type="checkbox"/> 51 - 250	<input type="checkbox"/> 250 +	
Organisation type	<input checked="" type="checkbox"/> Higher Education Institution <input type="checkbox"/> Research Institution <input type="checkbox"/> Industry <input checked="" type="checkbox"/> SME <input type="checkbox"/> other				
Department	Dept.of Electrochemistry				
Short description of your company or organization	<p>Our department of electrochemistry and subsidiary SME ChemLab are interested in cooperation with analogous in profile EU companies, which are specialized in the field of electrochemical sensors, and also in the design, synthesis and technology development of a range of electroactive materials (energy-storing , electrochromic) for different applications. We looking for partners for joint implementation of R&amp;D projects of named directions.</p>				

TOPICS OF INTEREST REGARDING THE CALL IN "COLLABORATIVE S&T PROJECTS"	
Sub-topic of exercise	Sensory materials and sensors. Electrochromic and energy-storing materials
<b>1. Innovative materials and cutting edge technological processes</b> ultrahigh-power laser sources <input type="checkbox"/> intelligent materials and nanomaterials <input checked="" type="checkbox"/> quantum optics <input type="checkbox"/>	
<b>2. Environmental research and climatic change</b>	



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*)  
materials, energy-storing materials

Sensory materials , sensors , nanoparticles, electrochromic

PROJECT IDEA(S)	
	<b>Project    Sensory materials and sensors</b>
Short description of project	The main objective of this project is the development of sensory materials and suitable, economically justified micro- and nanofabrication technologies for sensors. The use of nanostructured materials offers novel and advanced properties of conducting polymer and metal-polymer composite based electrochemical sensors for different applications.
Description of scientific expertise offered	We are experts in the field of electrochemistry of conducting polymers and metal-polymer composites. Spectroelectrochemistry, EIS, and others electrochemical techniques. Design and fabrication of amperometric and voltammetric sensors and instruments.
Description of technical expertise offered	
Description of requested partner scientific expertise	
Description of requested partner technical expertise	
Potential partners (name, organisation, address ...)	



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

### PROFILE FORM

EXPERT DETAILS			
Gender	<input checked="" type="checkbox"/> Mr	<input type="checkbox"/> Ms	Title Prof.
First name	Vasily		
Last name	Lutsyk		
Position	Head of sector of computer-aided materials design		

ORGANISATION DETAILS					
Organisation name	Buryat Scientific Center of Russian Academy of Science (Siberian Branch)				
Street *	Sakhyanova Str., 8				
ZIP *	670047	City *	Ulan-Ude	Country *	Russian Federation
Phone *	8(3012)433224		Fax	8(3012)433238	
Email *	vluts@pres.bscnet.ru		Web		
Employees	<input checked="" type="checkbox"/> 1-10	<input type="checkbox"/> 11 - 50	<input type="checkbox"/> 51 - 250	<input type="checkbox"/> 250 +	
Organisation type	<input type="checkbox"/> Higher Education Institution	<input checked="" type="checkbox"/> Research Institution	<input type="checkbox"/> Industry	<input type="checkbox"/> SME	<input type="checkbox"/> other
Department	Physical Problems Department				
Short description of your company or organization	Department of Physical Problems belongs to the Buryat Scientific Centre of the Russian Academy of Sciences and includes nearly 100 physicists and mathematicians. It is situated in Ulan-Ude, capital of Republic Buryatia near lake Baikal. Now it is in the process of reorganizing into the Institute of physical materials science of the Russian Academy of sciences.				

TOPICS OF INTEREST REGARDING THE CALL IN "COLLABORATIVE S&T PROJECTS"	
Sub-topic of exercise	
<p><b>1. Innovative materials and cutting edge technological processes</b></p> <p>ultrahigh-power laser sources <input type="checkbox"/></p> <p>intelligent materials and nanomaterials <input checked="" type="checkbox"/></p> <p>quantum optics <input type="checkbox"/></p> <p><b>2. Environmental research and climatic change</b></p> <p>biodiversity and ecophysiology of natural ecosystems <input type="checkbox"/></p> <p>climate change in the arctic and subarctic regions <input type="checkbox"/></p> <p>Material sciences connected with energy conversion and storage <input type="checkbox"/></p>	



### 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*): microstructure design in heterogeneous ceramics and alloys, 3D computer models of phase diagrams, surfaces with minimal area, competition of crystals of different dispersity in invariant reactions and on peritectical stages of monovariant reactions, phase regions with changes of phase reaction type.

PROJECT IDEA(S)	
Short description of project	<p>Tentative title: 3D computer Models of T-x-y diagrams with the surfaces of minimal area as a tool of materials scientist.</p> <p>Alternative principles of the phase diagrams (PD) design will be used: 1) before proceeding with the assembly of whole diagram, the space scheme of monovariant reactions or three-phase regions are to be elaborated; 2) contours of the surfaces with the unruled nature are to be closed and data of thermodynamical calculations are used on this stage; 3) surfaces should be approximated as the minimal ones, like the soap films, with the minimal areas; 4) all geometrical elements (points, lines, surfaces, phase regions) are designated, and their "names" contain the meaning (reason) of these designations; 5) after the computer assembling the PD space model changes into a useful tool to solve different fundamental and applied tasks. E.g. in CaO-Al<sub>2</sub>O<sub>3</sub>-SiO<sub>2</sub> system there are 325 solidification paths (117 two-dimensional ones, 163 – one- and 45 – zero-dimensional), confirmed by mass balances: vertical ones for the given centre of masses and horizontal material balances - for the isothermal state of isopleth. To investigate a competition of tiny eutectical crystals with more large primary crystals of the same phase in the reaction with melt, an idea of "disperse" tie-line is used, compositions will be found for microstructures with large, small and with mixed type of crystals. As computer model of T-x-y diagram saves information about system in compact form, and permits to receive any projection, isotherm and isopleth with decoding of intersected surface and phase region, it helps also to discover the errors and incorrectly interpreted experimental data, especially in cases of surface degeneration because of negligibly small sizes of homogeneous regions.</p>
Description of scientific expertise offered	Our research team mainly touches on geometrical description of phase diagram, and prefers to use more progressive surfacing of phase region borders by the surfaces with minimal, within thermodynamically calculated perimeters.
Description of technical expertise offered	We elaborate original technologies and specific software to manipulate with very sophisticated constructions of multidimensional phase diagrams.
Description of requested partner scientific expertise	As the results of COST Action 531 (Lead-Free Solder Material) will be used as main training ground for new technology, we need to cooperate with the colleagues responsible for theoretical modeling of phase diagrams for these types of ternary systems.
Description of	As the results of COST Action 531 (Lead-Free Solder Material) will be used as main training ground for new technology, we need to cooperate with the colleagues responsible for



requested partner technical expertise	experimental thermodynamic properties of alloys and experimental phase diagrams for these types of ternary systems.
Potential partners (name, organisation, address ...)	<ol style="list-style-type: none"> <li>1. Prof. A.T. Dinsdale, National Physical Laboratory. Teddington, UK.</li> <li>2. Prof. A. Watson, Institute for Materials Research, School of Process, Environmental and Materials Engineering, University of Leeds. GB- LS2 9JT Leeds. Tel.: +44 1133432354, Fax: +44 1133432384, e-mail: a.watson@leeds.ac.uk.</li> <li>3. Prof. A. Kroupa and prof. A. Zemanova. Institute of Physics of Materials, Academy of Sciences of the Czech Republic. Zizkova 2 CZ-611 37, Brno, Czech Republic. kroupa@ipm.cz.</li> <li>4. Prof. J. Vrest'al. Dept. of Theoretical and Physical Chemistry, Masaryk University. Kotlářská 2 CZ-611 37, Brno, Czech Republic. vrestal@chemi.muni.cz.</li> <li>5. Prof. J. Vizdal, Brno Univesity of Technology, Czech Republic.</li> <li>6. Prof. H. Ipser, Institut f. Anorganische Chemie, Univ. Wien. Waehringerstr. 42, A-1090 Wien, Austria. Tel.: +43 1 4277 52606, Fax: +43 1 4277 9526, e-mail: herbert.ipser@univie.ac.at.</li> <li>7. Prof. B. Legendre. Université Paris Sud. Paris, France.</li> <li>8. Prof. L. Zabdyr. Inst. Met. Mater. Sci., Polish Acad. Sci. Krakow, Poland.</li> </ol>