

Researcher information for Technology Consulting Program

Code # : EC01

Available term for consultation	1 week	Available for trip to Korea	Yes
Intellectual property Information	-		
Category of Research (Choose 1 or more)	ME (Material & Equipment), MP (Manufacturing & Production)		
Available field for consulting	<p>1. Career Path (Experience)</p> <ul style="list-style-type: none"> - (2019 ~ Current) TMK R&D/Deputy Head of the laboratory of corrosion protection and operational reliability: tests for corrosion resistance of metal by electrochemical methods, development of electrochemical methods corrosion testing of metal - (2006 ~ 2019) Chelyabinsk Tube Rolling Plant / Head of corrosion and mechanical strength laboratory: organization of laboratory for corrosion testing of metal, conducting metal tests for resistance to sulfide stress cracking (NACE TM 0177, method A, C, D), hydrogen-induced cracking resistance (NACE TM0284), Conducting of general corrosion tests in different model environments. <p>2. Consultation fields</p> <ul style="list-style-type: none"> - metal tests for resistance to sulfide stress cracking (NACE TM0177) of pipe material, - metal tests for resistance to hydrogen-induced cracking (NACE TM0284) of pipe material, - metal tests for resistance to general corrosion. <p>3 Expected effect</p> <p>Training in testing procedures according to standards NACE TM0177, NACE TM0284 in different model environments Selection of conditions for testing Improvement of electrochemical corrosion tests techniques</p>		
Education	MS	Major	South Ural State University, Metallurgical Department, qualification - the engineer, physicochemical methods of research (1994-1999)
		Research field	
		Dissertation	

Code # : EC02

Available term for consultation	1 week	Available for trip to Korea	Yes
Intellectual property Information	Patent of Russian Federation #2443786 “Low Carbon Steel Treatment Method ”		
Category of Research (Choose 1 or more)	ME (Material & Equipment), MP (Manufacturing & Production)		
Available field for consulting	<p>1. Career Path</p> <ul style="list-style-type: none"> - (2018 – Current) TMK R&D, Deputy Head of Materials Science and Welding Laboratory/ - (2015 - 2016) SIBUR, Project office “ZapSibNeftekhim”, Senior materials engineer - (2003 - 2015) Baikov Institute of Metallurgy and Materials Science, Laboratory of Materials Diagnostics, Senior Scientist. <p>2. Consultation fields</p> <ul style="list-style-type: none"> - Fracture research of steels by fracture surface analysis (scanning electron microscopy, 3D- reconstruction of fracture surface) - Metallic Materials selection for different applications - Influence of structure and metallurgical quality on service life of materials - Research Methods of metallic materials <p>3. Expected effect</p> <ul style="list-style-type: none"> - Improve product quality and manufacturing yield in metallurgical manufacturing - reduce loss and cost saving thru process optimization - Right material selection 		
Education	Ph.D	Major	Metal Science and Heat Treatment
		Research field	Fracture mechanisms of low alloy steels by fracture surface analysis, rail steels, wheel steels, pipe steels.
		Dissertation	Assessment of ductility heterogeneity of low alloy steels by fracture surface analysis by means with different dimensions (2D, 3D).
	MS	Major	Physics of metals
		Research field	Submicrocrystalline alloys by severe plastic deformation
		Dissertation	Influence of submicrocrystalline structure obtained by equal channel angular pressing on mechanical properties low alloy steels
	BS	Major	Physics of metals

Code # : EC03

Available term for consultation	1 week	Available for trip to Korea	Yes
Intellectual property Information	"Pipe threaded connection and method for its implementation" - Patent No. 2520275		
Category of Research	ME (Material & Equipment)		
Available field for consulting	<p>1. Career path (experience)</p> <p>(2010 - 2013) Laboratory of technological lubricants and coatings / engineer. - Scientific research in the field of high temperature greases, preservation greases and polymer threaded coatings.</p> <p>(2013 - 2016) Junior Researcher at the TMK R&D Center. Material Area: - Participation in the development of a polymer coating for threads, eliminating the use of grease during transportation, storage and operation of OCTG pipes. - Development of technology for coating deposition and polymerization. Equipment Area: - Development of equipment for controlling the time of destruction of samples during testing according to NACE TM 0177. - Development of its own algorithm and control program for autoclave equipment</p> <p>(2016 - 2019) Research Associate at the TMK R&D Center: Material Area: - Development of threaded polymer coating technology - Development of technology for local chrome plating of the surface of a rolling tool in an industrial environment Equipment Area: - Developed equipment for applying chrome coating to the surface of a rolling tool in an industrial environment</p> <p>(2019 - present) Head of the Laboratory of Physical and Chemical Methods of Analysis of the TMK R&D Center in Skolkovo</p> <p>2. Consulting fields</p> <ul style="list-style-type: none"> - The choice of material and organization of technology for the industrial application of wear-resistant and conservation coatings - Development of new devices for research and testing - Electronics, microcontrollers 		
Education	MS	Major	Physical engineer
		Research field	Physical chemistry
		Dissertation	Phase transformations during oxidation and reduction of fayalite

Code # : EC04

Available term for consultation	1 week	Available for trip to Korea	Yes
Intellectual property Information	More than 10 patents in the field of materials for oil pumps and test benches		
Category of Research	ME (Material & Equipment)		
Available field for consulting	<p>1. Career Path(Experience) - (2003-august 2019) Head of materials and technology Department in Borets company.(Oil production equipment development center) -August 2019- current Head of the laboratory of corrosion protection and operational reliability of scientific and technical center "TMK"</p> <p>2. Consultation fields -development of new promising materials for oil production equipment (motor,pump, the input module, the gas separator and others) including for complicated operating conditions; -bench tests of new products; - revision analysis of equipment; - acceptance tests; - support of new products and controlled operation; -preparation of expert opinions in the field of materials and tests</p> <p>3. Certification - effective leadership training ("Mercury international")</p> <p>4. Expected effect - Selection of materials for operation in severe conditions - methods of protection of materials (including coating and others) - methods of testing of operational properties of materials - reduce loss and cost saving thru process optimization</p>		
Education	Ph.D	Major	Ph.D in Powder metallurgy, composite materials, coatings. Moscow steel and alloys institute
		Research field	Hard wear-resistant coating, film
		Dissertation	Development of thermoreactive surface hardening method
	MS	Major	Powder metallurgy, composite materials, coatings.
		Research field	The methods of coating, hard alloys
		Dissertation	Thermosetting methods of surface hardening

Code # : EC05

Available term for consultation	week	Available for trip to Korea	Yes
Intellectual property Information	<p>Continuous rolling method and continuous multi-stand mill for its implementation (RU2614974) SoftWare: TPAtex – FQM (RU2018665514), Mandrel position (RU2019616594), DigitMill (RU2019666493), EX-pam (RU2016662673), The software package for determining the service life of the bandage of the wheelset of an electric locomotive (RU2013614473), Software package for determining the technological parameters of the process of rolling shells on the mill FQM (RU2013618794), “Sobol” program for the automated calculation of the geometric dimensions of hot-pressed pipes (RU2017616980), The “TMK-IRS” program for the automated calculation of operational parameters of hot-pressed pipes with screw ribbing of the inner surface (RU2018612109)</p>		
Category of Research	IT(Information Technology), ME(Material&Equipment), MP(Manufacturing&Production)		
Available field for consulting	<p>1. Career Path(Experience)</p> <ul style="list-style-type: none"> - (2014 ~ Current) Deputy Head of the Digital Technologies Laboratory / Deputy head of laboratory: development digital twin of the rolling mill (process); - (2012 ~ 2019) Laboratory of modeling of technological processes of JSC "RosNITI" ("Russian Research Institute of Pipe Production")/ engineer-Junior researcher-researcher - head of the laboratory: modeling of technological processes, technological equipment and operating conditions of products using software products and installations for physical modeling; development of new software products, their debugging, testing and adaptation to real conditions (programming language Delphi, C# and markup language HTML); analysis of technological modes of deformation during the installation of a new continuous mill FQM; development of methods of testing of pipes of category High Collapse; development of measures to increase the level of resistance to crushing of pipes; development of mathematical model and SOFTWARE for calculation of technological parameters of reduction of pipes; determination of causes of premature failure of railway locomotive bands; increase of accuracy of geometrical sizes of pipes after heat treatment <p>2. Consultation fields</p> <ul style="list-style-type: none"> - modeling of materials processing pressure using finite element method with the use of specialized software, the simulation of the process operation by the finite element method (strength, thermal fatigue calculations); - analysis and optimization of continuous pipe rolling technology; - technologies of digitalization of metallurgical production. <p>3. Relate Networking</p> <p>Member of the editorial Board of the journal " Bulletin of SUSU. Metallurgy series»</p> <p>4. Expected effect</p> <p>to make modeling of metal forming before introduction of new technologies; search of the reasons of formation of defects, definition of technological parameters of process of metal forming by modeling by a finite element method.</p>		
Education	Ph.D	Major	Metal forming
		Research field	Reduction mill, seamless pipes
		Dissertation	Improving the efficiency of manufacturing hot-deformed pipes based on physical and mathematical modeling of the reduction process
	MS	Major	Metallurgy
		Research field	Wire production
		Dissertation	Research of roller dies and development of a new design of roller dies for drawing titanium wire
BS	Major	Engineering and technology	

Code # : EC06

Available term for consultation	week	Available for trip to Korea	Yes
Intellectual property Information	No. 2680457 High-strength oil-grade pipe in cold-resistant design		
Category of Research (Choose 1 or more)	NT(Nano Technology), ME(Material&Equipment), MP(Manufacturing&Production)		
Available field for consulting	<p>1. Career Path(Experience) (2004-2019) Russian Research Institute of the Tube & Pipe Industries (2019 - present) TMK R&D Center in Skolkovo</p> <p>2. Consultation fields</p> <ul style="list-style-type: none"> - Optimization and development of new modes of heat treatment of pipes. - Development of mechanisms and methods for improving the physicomechanical, technological and operational properties of pipe metal. - Examination of the causes of defects in hot and cold deformed pipes and premature failure of pipes. - Carrying out metallographic studies in accordance with the requirements of normative and technical documentation. - Determination of the corrosion characteristics of metal pipes for compliance with the requirements of regulatory documentation in various environments, including hydrogen sulfide (NACE MR0175/ ISO 15156). - Investigation of factors affecting the corrosion resistance of steels, including in real conditions. - Investigation of the resistance of pipe metal to local corrosion. - Participation in full-scale (bypass) tests in order to adjust the composition, technology and processing of pipe steels. - Recommendations on the selection of materials for specific operating conditions. <p>3. Expected effect</p> <ul style="list-style-type: none"> - selection of pipe material to obtain the required properties and operating conditions - metal science, corrosion, welding metal science. 		
Education	Ph.D	Major	Materials Science
		Research field	Metal science and solid state physics
		Dissertation	Study of the structure and properties of high-strength ferritic-bainitic steels designed for high-pressure trunk pipelines
	MS	Major	Physical engineer
		Research field	Metal science and solid state physics
		Dissertation	Improvement of thread rolling tool production technology

Code # : EC07

Available term for consultation	1-2 week	Available for trip to Korea	Yes
Intellectual property Information	-		
Category of Research (Choose 1 or more)	ME(Material&Equipment), MP(Manufacturing&Production), NT(Nano Technology)		
Available field for consulting	<p>1. Career Path</p> <ul style="list-style-type: none"> - (2019 ~ Current) Material Science and Welding Laboratory in TMK R&D / Senior Research Engineer : Research in microalloyed low-carbon steel manufacture for critical offshore oil and gas pipelines (for reel-laying and sour service) - (2015 ~ 2019) Metal Science and Heat Treatment Laboratory in TMK RosNITI / Senior Engineer : Research in microalloyed low-carbon steel manufacture for critical offshore pipelines Research in aqueous polymer quenchants application for gas cylinders and tool joint heat treatment <p>2. Consultation fields</p> <ul style="list-style-type: none"> - Full-scale and small-scale mechanical and corrosion testing of materials for critical offshore oil and gas pipelines - Effect of micro- and nanostructure on operational (including corrosive) properties of bainitic steels - Application of alternative liquid quenchants for heat treatment <p>3. Expected effect</p> <ul style="list-style-type: none"> - reduce loss thru optimal test scheduling of material - right material selection for strain based and/or sour service steel linepipes - right equipment selection for heat treatment 		
Education	MS	Major	MSc, South Ural State University, Chelyabinsk
		Research field	Material Science and Heat Treatment of Metals
		Dissertation	"Research of Microstructure and Properties of Low-Carbon Steels for Reel-Laid Linepipes"
	BS	Major	1) Kostanay State University, Kostanay, Kazakhstan 2) University of Chemical Technology and Metallurgy, Sofia, Bulgaria (as an academic mobility program participant)
Research field		1) Technological Machines and Equipment for Metal Working 2) Material Science	

Code # : EC08

Available term for consultation	week	Available for trip to Korea	Yes
Intellectual property Information	<ul style="list-style-type: none"> ▪ Eurasian patent № 031598 «Caliber of Three Roll Pipe Mill» (filed / registered: 29.08.2016 / 31.01.2019); ▪ Eurasian patent № 032251 «Caliber's System of Continuous Tube Mill» (filed / registered: 29.08.2016 / 31.04.2019); ▪ Patent RU № 2707052 «Method for continuous rolling of pipes and mandrel assembly for its implementation» (filed / registered: 10.05.2017 / 21.11.2019); ▪ Patent application RU № 2019110232/02(019685) « Continuous pipe rolling method» (filed / registered: 08.04.2019 / ____); ▪ Computer program RU №2016662544 «Ovality2+» (filed / registered: 22.09.2016 / 15.11.2016); ▪ Computer program RU №2019616594 «Mandrel Position» (filed / registered: 29.04.2019 / 24.05.2019). 		
Category of Research (Choose 1 or more)	IT(Information Technology), ME(Material&Equipment), MP(Manufacturing&Production), ST(Space Technology)		
Available field for consulting	<ul style="list-style-type: none"> ▪ experience in the application of digital technologies in production (advanced analytics and artificial intelligence can be applied to large data sets to generate new insights and enable better decision making in predictive maintenance and quality management). ▪ setting up industrial equipment using non-contact measuring 3D systems; ▪ optimization of production processes; ▪ precision pipe manufacturing; ▪ mathematical modeling; ▪ computer and physical modeling; ▪ quality management in the production of seamless pipes; ▪ new roll design for seamless pipe production. 		
Education	Ph.D	Major	Metal forming technology
		Research field	High-precision pipes, production, 3-roll Pipe Mill, optimal solutions, Box-Wilson method
		Dissertation	Optimization of the process of continuous rolling of shells in order to increase the accuracy of hot-rolled seamless pipes
	MS	Major	Metal forming technology
		Research field	Production, optimization of the process, slip-line method
		Dissertation	Development of high-quality rolled technology for large diameter pipes
	BS	Major	Steel Technology

Code # : EC09

Available term for consultation	<u>ETC</u>		Available for trip to Korea	Yes
Intellectual property Information	Patent for invention No. 2404294 Composite metal-diamond coating, method for production thereof, electrolyte, diamond-containing additive, electrolyte and method for production thereof			
Category of Research (Choose 1 or more)	IT(Information Technology), NT(Nano Technology), ST(Space Technology), ME(Material&Equipment), MP(Manufacturing&Production),			
Available field for consulting	<p>Ryzhov Evgeny Vasilievich in 1972 entered the Military Engineering Institute of the Red Banner. A.F. Mozhaysky, who graduated in 1977 with a degree in aircraft, with the qualification of a military mechanical engineer. After graduating from Wiki. Mozhaysky served at the Baikonur Cosmodrome. In 1981 he entered the postgraduate studies at VIKI named after Mozhaysky. In 1985 he was awarded the degree of candidate of technical sciences. From 1985 to 1997, he served in one of the Central Research Institute of the Ministry of Defense as a junior research fellow, senior research fellow, laboratory head, deputy department head, department head. In 1989, he was awarded the title of Senior Researcher.</p> <p>In research institutes he was engaged in economic analysis, valuation and capitalization of intangible assets. He is the author of books: "Methods of military-economic research on the prospects for the development of space assets", "Control of the flow around bodies using laser energy in high-speed gas flows". In 1997, retired from military service with the rank of Colonel, was awarded 20 medals. He took part in the creation and establishment of the Research Institute of the CS of the branch of GKNPC them. M.V. Khrunicheva. He served as Deputy Director for Economics for 2003.</p> <p>Since 2003, he has become Deputy General Director of EKA OJSC, an enterprise engaged in R&D in various fields of industry, and primarily in the field of space activities. In 2007 becomes the General Director of RAM. The company is actively engaged in the implementation of various innovative developments in the industry, including technologies: "nanodiamond chrome", "nanodiamond polymer, composite, carbon fiber", as well as the creation of such projects as: "Creation of an industrial complex for applying metal-diamond coatings with a nanocrystalline structure on products operating in extreme operating conditions "</p> <p>From 2010 - 2014, he served as Chairman of the Council on Entrepreneurship and Industrial Policy under the Administration of the Yubileiny Moscow Region. Evgeny Vasilievich - author (co-author) of 47 patents of the Russian Federation and foreign countries, is a full member of the Russian Cosmonautics Academy named after Tsiolkovsky.</p> <p>Since 2013, he has been the Head of the Innovation Development Section of the International Association of Space Activities Participants (MACD). He is actively involved in the activities of expert communities: a member of the expert board of the scientific and production journal "Nanotechnology Production Ecology", an expert of the Skolkovo Foundation, a member of the Expert Council for Mechanized Oil Production, an accredited expert of the Federal Register of Experts in Science and Technology. Since 2016, he has become Chairman of the Committee for Technical Regulation of NP "MON" - Rusnano.</p>			
Education	Ph.D	Major	candidate of technical sciences.	
		Research field	aerospace field	
		Dissertation	Development of new materials and coatings for the space industry	

	MS	Major	Member of the Russian Academy of Cosmonautics
		Research field	innovative development of the International Association of Space Participants
		Dissertation	Author (co-author) of 47 patents of the Russian Federation and foreign countries.
	BS	Major	Chairman of the Board of Directors of RAM LLC. Creation of an industrial complex for applying metal-diamond coatings with a nanocrystalline structure on products operating under extreme operating conditions ”

Code # : EC10

Available term for consultation	1-1.5 week	Available for trip to Korea	Yes
Intellectual property Information	<p>1</p> <p>APPARATUS AND METHOD FOR PROVIDING VEHICULAR POSITIONING</p> <p>PCT RU 2016/000589 от 31.08.2016</p> <p>Tatarnikov D.V., Edelman L., Pimenov A.A., Smirnov M.N., Penkrat N.A.</p>		
	<p>2</p> <p>Algorithms Library for objects recognition</p> <p>2017610528, request 201619919, date 22.09.2016</p> <p>Ufnarovkii V.V., Smirnov M.N., Fedorenko S.I., Pimenov A.A.</p>		
	<p>3</p> <p>Apparatus and method of large scenes visualization</p> <p>2606875, request 20151001179, 16.01.2015</p> <p>Ufnarovkii V.V., Smirnov M.N., Fedorenko S.I., Pimenov A.A, Penkrat N.A., Gorilovsky A.A., Kocherizhkin V.A., Bogdanuik I.A., Bocharov E.I.</p>		
	<p>4</p> <p>Vizimapping</p> <p>201466255, request 2014617165 from 22.07.2014</p> <p>Ufnarovkii V.V., Smirnov M.N.,</p>		
Category of Research (Choose 1 or more)	IT(Information Technology)		
Available field for consulting	R&D projects in Computer Vision area R&D projects in following areas: industry safety, computer vision in digital medicine, computer vision in automotive, AR/VR applications, CNN.		
Education	MS	Major	Mathematics
		Research field	Software Engineering
		Dissertation	Processor IP-core development for FPGA design

Code # : EC11

Available term for consultation	Up to 4 weeks	Available for trip to Korea	Yes
Intellectual property Information			
Category of Research (Choose 1 or more)	IT (Information Technology), ME (Material & Equipment), MP (Manufacturing & Production), Mobile Devices, Network & Communication Technologies, Certification, Import		
Available field for consulting	<p>1. Career path and responsibilities August 2013 — October 2019. Samsung Electronics Senior Certification Specialist / Technical Product Manager</p> <ul style="list-style-type: none"> - Prepared needed documents and applied for the certificates of compliance, declarations of conformity, certificates of state registration, acts of manufacturing analysis, expertise and all other relevant to product standards documentation; - Participation in certification tests (EAC, Electromagnetic Compatibility, Low Voltage Equipment, Radio Frequency, etc.); - Proceeded tenders for certification services; - Arranged and controlled all steps of the process of in-time documents preparation and keeping all required documents and databases up-to-date; - Communication with certification agencies, government institutes and appropriate ministries (FSB, Federal Customs Service, Ministry of Communication, Ministry of Industry and Trade, etc.); - Inquired relevant information and documents (product data, test reports, descriptions, etc.) from the manufactures and company business units; - Reviewed and analyzed national and EAEU legislation and regulatory documentation in appliances/network/frequency/safety/batteries/packaging areas; distributed information to all involved people; - Checked translation correctness for marking text creation; makes sure all texts, labels and stickers are in line with the national/EAEU regulation; - Assisted in import process problem solving related with product compliance; - Deals with quality & standards claims and requests from customers, end consumers (warranty claims) and authorities in Russia; initiated and followed actions on correction; - Participates in investigations regarding product safety and compliance initiatives; - Makes sure that documents are in place with the Russian (EAEU) regulation and ensures information and documents are distributed properly to the customers, end consumers and authorities. - Proceeded factories (Russia, Korea, Vietnam) inspections and verifying it's comply with Quality Management Systems (ISO 9001) - Negotiation with mobile operators about launching new technologies (4G, 5G, VoLTE, VoWiFi, RCS, OMC, etc) - Testing of Android and Tizen devices (QA) <p>2. Consultation fields</p> <ul style="list-style-type: none"> - Certification of products - Comply with EAEU and Russian legislation - Certification tests - Quality assurance - Marking and labeling - Mobile Network and Communications - New Technologies (5G, AR, VR, etc.) <p>4. Relate Networking</p> <ul style="list-style-type: none"> - Lots of contacts with different certification agencies, testing laboratories, Ministry of Communication, Federal Customs Service, Federal Security Service <p>5. Expected effect</p> <ul style="list-style-type: none"> - Provide trouble-free import and sell processes in accordance with EAEU and Russian law and regulations - Improve product quality by process optimizing - Import fee and additional expenses cost saving 		

Education	MS	Major	Electronical Engineering at Bauman Moscow State Technical University
		Research field	Vacuum Technologies
		Dissertation	System for diagnosing the operability parameters of the elements of vacuum equipment
	MS	Major	Management
		Research field	Human Resources
		Dissertation	Innovative technologies for the labor activity assessment in a modern organization

Code # : EC12

Available for trip to Korea	Yes (up to 2 weeks)	Intellectual property Information	Berezkin Iaroslav Vyacheslavovich International Patent № A61B 17/58 (2006.01) Request № PCT/RU2018/000020 Publication № WO/2019/035734 Date: 21.02.2019
Category of Research (by 6T)	BT (Biology Technology)		
Available field for consulting	<p>- PelvicFractures is a project of Doctive LLC in collaboration with the specialized research centres of Russia, Venezuela, Italy and Germany. We are focusing on the development of new surgical techniques and new devices for fixation of unstable pelvic ring fractures.</p> <p>- Pu-Lock™ is a solution for Interlocking intramedullary nailing for pubic rami fractures</p> <p>- We made a number of comparative biomechanical tests (torsion and cyclic bending of the pelvic fracture model of the bone synthesized plate, cannulated screw and nail).</p> <p>- We simulated cyclic loads on the pelvis model similar to normal walking.</p> <p>- The first patient has been operated in the end of 2016.</p> <p>- About 400 Pu-Lock™ nails have already been installed.</p>		
	Ph.D	Major	Orthopedic Trauma
		Research field	Pelvic Fractures
		Dissertation	«Closed intramedullary osteosynthesis with locking nails in pubic bone fractures» [in Russian]
	MS	Major	Doctor of medicine

Code # : EC13

Available for trip to Korea	Yes	Intellectual property Information	<p>Russian Federation patent № 2406043 dated March 12, 2009 «Solar power installation with the concentrator of solar energy from the flat reflecting wafers»</p> <p>Russian Federation patent № 2583317 dates January 29, 2015 «Combined concentrator PV plant»</p> <p>Russian Federation patent № 2426954 dated May 17, 2010 «The PV module with the system of flat mirror concentrators for controlling of PV stations position»</p> <p>USA patent 10,148,224 dated December 4, 2018 «COMBINED CONCENTRATOR PHOTOVOLTAIC INSTALLATION»</p> <p>The Republic of Korea patent 10-2026003 dated August 20, 2019 «조합형 집광기 광전지 설비»</p> <p>International application PCT/RU2016/000072 dated February 15, 2016 «COMBINED CONCENTRATOR PHOTOVOLTAIC INSTALLATION». The application transferred to the national phase in the countries of the European Patent Office</p>
Category of Research (by 6T)	ET(Environment Technology) (solar power)		
Available field for consulting	Possibility of setting up a joint venture in Korea for the assembly plant for SEU-2000 solar co-generation stations.		
Education	Ph.D	Major	Microelectronics
		Research field	Special machinery
		Dissertation	NDA

Code # : EC14

Available term for consultation	1week	Available for trip to Korea	Yes
Intellectual property Information	<ol style="list-style-type: none"> 1. A method of producing a carbon fiber based on viscose for the surgical treatment of glaucoma; 2. The prepreg and the product thereof. 		
Category of Research (Choose 1 or more)	NT (Nano Technology) ME (Material&Equipment)		
Available field for consulting	<p>The main achievements of JSC Nilgrafit and JSC Giredmet achieved under the leadership of Mayanov EP from 2012 to present:</p> <ul style="list-style-type: none"> - Relocation of Giredmet JSC to the research and production site of Nilgrafit JSC, taking into account the preservation of institutions. - Within the framework of the strategy of the State Atomic Energy Corporation ROSATOM and the plans of the Moscow City Government to transfer industrial production outside the city in 2012 - 2015. a project was implemented to develop the experimental production base of Nilgrafit JSC and transfer part of industrial production to a separate unit in the city of Zarechny, Penza Region. - As a result of research and development work carried out during the period, pilot experimental sites were created at the industrial sites of Nilgrafit JSC in Moscow and the Zarechny Penza Region: a workshop for the production of structural graphite with a full technological cycle, including isostatic pressing, firing and graphitization, a production site long-lived prepreg, laboratory and industrial lines for the production of carbon fabric from hydrated cellulose, equipment for the production of carbon-fiber and carbon-ceramic heat-resistant composite x materials. - For the period from 2016 to the present under the leadership of Mayanov E.P. Nilgrafit JSC carried out R&D and supplies in the interests of Russian industries. - Research, design and experimental technological work has been carried out, technological re-equipment of pilot sites for the production of artificial graphites, siliconized graphites, carbon-carbon materials based on graphite has been carried out, including for enterprises in the nuclear industry, the Ministry of Defense of the Russian Federation and industrial sectors. Technological documentation (technical specifications, technological processes), sets of design and project documentation have been developed. - Nilgrafit JSC developed and manufactured a unique special composite material and components based on it for the cases of thermal blocks of radioisotope electric power sources (RTGs), which were used in the Chinese spacecraft in the framework of international cooperation between Roscosmos State Corporation and Rosatom State Corporation Chang'e-4 lunar mission. - The first direct government contract with the Russian Ministry of Defense for the supply of graphite powder was signed in the history of Nilgrafit JSC. - Long-term contracts were concluded (until 2021) under the State Defense Order and advanced advances were received on them. Early delivery of products produced under the state defense order was carried out at the request of the Ministry of Defense of the Russian Federation. - Long-term cooperation was established with JSC TsKBM, large-sized parts were manufactured, without R&D and R&D for a promising pumping unit (GTsN) No. GTsNA1753. The enterprise is included in the special list (protocol No. 1-OK / 55-Pr of 07/05/19.), As the sole supplier for the supply of siliconized graphite for MCP inside the circuit. - in 2018, 16 research and development institutes were created at Nilgrafit JSC, of which 6 patents were obtained, 4 advance projects were completed as part of the R&D Thematic Plan of the State Atomic Energy Corporation Rosatom for 2019-2022. in the direction "Materials and Technologies" regarding the development of the sub-direction "Materials based on carbon". - In 2019, Nilgraphit JSC implemented 6 topics within the framework of the CES. - in 2019, Nilgrafit JSC was approved by the operator of the examination and support of the formation of a "road map" for the development of the high-tech field "Technologies of new materials and substances". 		

- in 2019, new technologies were mastered at Giredmet JSC: thermoelectric microgenerators with characteristics exceeding the world level of existing analogues were developed (efficiency = 2.8% at $\Delta T = 50^\circ \text{C}$, geometric dimensions of the micromodule $3.8 \times 3.8 \times 1.6 \text{ mm}^3$), as confirmed by the acceptance committee of the Advanced Research Foundation; The technology for producing a mixture for the growth of single crystals of lutetium silicate was developed. Currently, by the order of JSC NIITFA, in the framework of the EOTP, work is underway to create a technology for growing single crystals and to manufacture detection elements for the next generation positron emission tomography on their basis.

- The small-tonnage production of rare metal powders was created.

- The property complex of Giredmet JSC was successfully implemented on B. Tolmachevsky per.

- A program of succession and development of young personnel was formed. The institute's staff is annually replenished due to the employment of young specialists from the best technical higher educational institutions, which allowed to form one of the best teams, winner and prize-winners of the Championships of professional excellence, national and international level: AtomSkills, WorldSkills, WorldSkills Hi-Tech.

- (2013 - Current) Director of JSC "Science and Innovation" - the managing organization of JSC "Nilgrafit", JSC "Giredmet"

- (2012 – 2013) General Director of JSC Nilgrafit

- (2009 – 2012) Deputy General Director of HC "Composite" (management company "NPK" Khimpromengineering)

- (2008 – 2009) General Director, Executive Director of OAO NPK Khimpromengineering.

Education	Ph.D	Major	Electronics Engineering
		Research field	Non-volatile Memory(PRAM, MRAM, FRAM), Semiconductor packaging process, equipment and materials(Adhesive, film)
		Dissertation	Flexible transparent GO-NH ₂ -AgNP/AgNW/PET multilayer electrode for nonvolatile memory applications
	MS	Major	Economics
		Research field	International Economic Relations (Foreign Trade Economics)
		Dissertation	-
	BS	Major	Electronics Engineering

Code # : EC15

Available term for consultation	2 weeks	Available for trip to Korea	Yes
Intellectual property Information	<ol style="list-style-type: none"> 1. Methods of double-sided electrochemical dimensional processing of parts. 2. Methods of electrochemical processing of surfaces of small curvature with a sectional electrode-tool and a device for its implementation. 3. Methods of manufacturing a brush seal. A device for measuring the angle of inclination. 4. Devices for measuring the small displacements of an object. 5. Devices for determining the position of an aircrafts. 		
Category of Research (Choose 1 or more)	ME (Material&Equipment), Technology transfer, Patents management		
Available field for consulting	<ul style="list-style-type: none"> - I am the founder of an Accelerator for Technological Startups Guide to Innovations (way2innovations.ru) from 2018. - Today, my platform is a multidisciplinary infrastructure consulting and IT company that supports and develops innovative technology projects and startups, organizes and conducts regional, corporate and university acceleration and educational programs and events throughout the country - in Moscow, St. Petersburg, Yekaterinburg, Tomsk, Rostov-on-Don, Ufa, Samara, Ulyanovsk, Penza, Barnaul, Tyumen, Saransk, Sterlitamak, Magadan and other Russian cities, as well as abroad - in South Korea, Israel, Germany and Turkey. - Since 2015, more than 300 technology entrepreneurs and startups have taken part in various acceleration programs, and more than 3,000 people have participated in educational events. - The competitive advantages of my platform are the highest professionalism of the team and a responsible approach to the provision of services, a powerful digital platform and various digital services of its own design for managing acceleration programs, an author's animation course on technological entrepreneurship and innovation, as well as a strong composition of speakers, scientific, technical and business experts, mentors and trackers from all over the country. - Consulting fields: Patent management, technology transfer, project management, technology sourcing (materials etc.) - (2018 - Current) Founder & CEO, Guide to Innovations - (2016 – 2018) Project Manager, Agency for Strategic Initiatives (ASI) - (2014 – 2016) Head of Intellectual Assets, OAO Poligon - (2013 – 2014) Head of Technical Department, OAO Poligon 		
Education	Ph.D	Major	Aviation Engineering at Ufa State Aviation Technical University
		Research field	Thermal, electric propulsion engines and power plants of aircraft
		Dissertation	Thermal, electric propulsion engines and power plants of aircraft
	MS	Major	Aviation Engineering at Ufa State Aviation Technical University
		Research field	Machines and technologies for highly efficient material processing processes
		Dissertation	Machines and technologies for highly efficient material processing processes
BS	Major	Aviation Engineering at Ufa State Aviation Technical University	

Code # : EC16

Available term for consultation	Up to 1 week	Available for trip to Korea	Yes
Intellectual property Information	-		
Category of Research (Choose 1 or more)	Electronics Engineering, IT (Information Technology), MP (Manufacturing & Production)		
Available field for consulting	<p>1. Career Path</p> <ul style="list-style-type: none"> - (2019 – current) CEO at ООО «Оптех» (https://opteh.ru) - (2016 – 2019) CTO at ООО «Оптех» (https://opteh.ru) - (2015) Software Engineer at ООО «Безконтактные Устройства» (https://wirenboard.com) - (2013 – 2016) Engineer at Institute of Control Sciences of Russian Academy of Sciences - (2010- 2013) Computer Operator at Moscow Institute of Physics and Technology Department of Computer Science <p>2. Consultation fields</p> <ul style="list-style-type: none"> - Electronic engineering - Hardware development - Embedded software development - Embedded Linux - Prototyping - Robotics <p>3. Teaching and advisory experience</p> <p>(2018 – current) – Advisor to the MIPT robot football team “StarKIT” (Moscow Institute of Physics and Technology)</p> <p>(2016 – current) – Teacher at Moscow Institute of Physics and Technology: Basics of radio engineering</p> <p>(2015 – 2016) – Advisor to the MIPT Eurobot team (Moscow Institute of Physics and Technology)</p>		
Education	MS	Major	Applied Mathematics and Physics at Moscow Institute of Physics and Technology
		Research field	Electronics Engineering
		Dissertation	-
	BS	Major	Applied Mathematics and Physics at Moscow Institute of Physics and Technology

Code # : EC17

Available term for consultation	Up to 2 weeks	Available for trip to Korea	Yes
Intellectual property Information	-		
Category of Research (Choose 1 or more)	IT (Information Technology), MP (Manufacturing & Production), Mobile Devices, Network & Communication Technologies, Certification		
Available field for consulting	<p>1. Career path and responsibilities From 2012 - Global IT company Technical Product Manager</p> <ul style="list-style-type: none"> - QA of mobile devices including smartphones, tablets, wearables. Communication with local network operators; - Russian IT market analysis and strategy creation for new products launch; - VR/AR Project management for B2C and B2B; - Global services (applications) localization for local market – existing features adaptation and new function development based on local needs; - Documents preparation for new products certification (EAC and DoC); - Cloud gaming solutions development in Russia; - Negotiation with mobile operators about launching new technologies (4G, 5G, VoLTE, VoWiFi, RCS, OMC, etc) - Marketing promotions creation for new services highlight. <p>2. Consultation fields</p> <ul style="list-style-type: none"> - Certification of products - VR/AR - Cloud gaming - Quality assurance - Mobile devices - Mobile Network and Communications - New Technologies (5G, AR, VR, etc.) <p>4. Relate Networking</p> <ul style="list-style-type: none"> - Lots of contacts with main Russian network operators, VR/AR companies, Cloud gaming companies, certification agencies. <p>5. Expected effect</p> <ul style="list-style-type: none"> - Support in successful launch of new products - Improve product quality by process optimizing - Certification issues support 		
Education	MS	Major	Electronical Engineering at Bauman Moscow State Technical University
		Research field	Radioelectronic devices

Code # : EC18

Available term for consultation	Up to 4 weeks	Available for trip to Korea	Yes
Intellectual property Information	-		
Category of Research (Choose 1 or more)	IT (Information Technology), Software Product Management, Agile Implementation, Product analytics		
Available field for consulting	<p>1. Career path and responsibilities (September 2019 — to present) Docdoc (docdoc.ru) – app for booking medical appointment offline or via telemedicine service. Product lead/Senior Product Manager Lead the team of managers, analysts, software engineers to grow up the app's business and product metrics via user and market research, eliciting requirements and users needs and then developing new services and features or improving current functionality.</p> <p>(December 2017 — September 2019) Yandex (yandex.ru) Product Manager</p> <ul style="list-style-type: none"> • Performance-driven project manager able to work with multiple clients and stakeholders (20+). Excel in managing both insource and outsource cross-functional distributed teams (10+ developers in 4 different regions simultaneously); • Recognized for the implementation of Agile practices to enhance teams' productivity and operational excellence; • Mentored number of Yandex employees and students at Yandex product management school; • Exceeded company goals as a product manager by defining clients' needs and products' requirements through executing user research and cjm, shaping product roadmap, prioritizing backlog and assessing all possible outcomes to choose the best course of action. <p>Achievements:</p> <ul style="list-style-type: none"> • Successfully launched Yandex Games service and several internal services from the scratch; • Led, developed and released more than 20 projects (services for Yandex Station smart speaker, web services for Yandex Browser, Internetometr, Petfinder and internal services); • Promoted as a manager of 2 teams of developers with united scope of projects due to ability to build productive relationships and strong judgment at critical junctures. <p>May 2016 — December 2017. Evotor Product Manager Evotor is a smart terminal (POS terminal) with an application marketplace (market.evotor.ru) and ecosystem of services for small businesses.</p> <p>Was one of the first employees to join the team and came along the path of company establishment from 10 to 200 people and 250 000 business clients.</p> <ul style="list-style-type: none"> • Elicited requirements, defined user stories via customer interviews, made market research and shaped roadmaps for several company's products; • Successfully launched number of new products and services, incl. management of operations and processes; • Owned P&L models for all companies' products. 		

Achievements:

- Extended current hardware product by launching new telecom inbox service (3M Rub monthly revenue);
- Made in-depth research of the big data market and as a result number of product prototypes were launched.

May 2016 — December 2017. Kassir.ru

Project Manager

- Elaborated and implemented business processes (incl. developing and meeting the budget requirements), developed a transparent system of efficiency analysis and reporting;
- Stellar negotiator with history of successful profitable arrangements, ability to attract key clients and its further supervision;
- Developed the system of sales analysis and customer actions' forecasting.

Achievements:

- Recognized for deep and unique knowledge of ticketing operations as a result led key consulting streams for FIFA Confederations Cup 2017, FIFA World Cup 2018.

August 2013 – October 2014. Sochi 2014 Organizing Committee.

Senior Project Manager

- Developed and continuously assessed the implementation of the ticket sales strategy, predictive models and sales plans;
- Carried out in-depth analysis and forecasting within the ticketing program to achieve full stadia and revenue goals;
- Supervised the development and execution of the Fan2fan – online platform for verified ticket resale.

2. Consultation fields

- Software product management;
- Agile implementation;
- Management of processes at the software development teams;
- Product Analytics (funnels, metrics, dashboards);
- User research, customer interviews, customer journey maps.

4. Relate Networking

- Lots of contacts with experts from leading Russian it-companies

5. Expected effect

- Improvement of software development process;
- Agile practices implementation;
- Consultations about product analytics, metrics, dasboards. Creating data-driven style of software development
- Consultations about different methods of user research and their application
- other consultations about software product management

Education	MS	Major	Electronical Engineering at Bauman Moscow State Technical University
		Research field	Vacuum Technologies and Microelectronics
		Dissertation	The Technology of forming nanostructured coatings in vacuum by thermal evaporation technique

Code # : EC19

Available term for consultation	Up to 4 weeks	Available for trip to Korea	Yes
Intellectual property Information	-		
Category of Research (Choose 1 or more)	ST(Space Technology), ME(Material&Equipment), MP(Manufacturing&Production), CT(Convergence Technology)		
Available field for consulting	<p>1. Career path and responsibilities (July 2018 — Current) Binology Company, www.binology.com Lead engineer</p> <ul style="list-style-type: none"> - Design product from idea to production - Communication with factories - Development team management - Mechanical and electronical device testing <p>(August 2019 — Current) Controlled thermonuclear fusion Center - International projects Design advisor</p> <ul style="list-style-type: none"> - Determination of methods and solutions of design - Communication with factories <p>(October 2014 — Current) MIPT, Phystech School of Aerospace Technology Teacher</p> <ul style="list-style-type: none"> - Basics of engineering design - Computer-aided design systems <p>(December 2013 — Current) MIPT, Plasma Propulsion Lab Deputy Head of Laboratory, Chief Engineer</p> <ul style="list-style-type: none"> - Building laboratory from idea to work - Plasma diagnostics research - Team management - Administrative support <p>(February 2017 — December 2019) Techservice Company Chief Engineer</p> <ul style="list-style-type: none"> - Design, testing, production different embedded systems - Design, testing, production robotics - Communication with factories <p>2. Consultation fields</p> <ul style="list-style-type: none"> - Manufacturing - Embedded systems - Plasma propulsion systems - Prototyping - Robotics - Waste Management <p>4. Relate Networking</p> <ul style="list-style-type: none"> - Lots of contacts with different factories, Science Institutes in Space Technology, Ministry of Aerospace, field of Waste Management <p>5. Expected effect</p> <ul style="list-style-type: none"> - Determination optimal technology facilities for production - Determination factories for production - Improve skills members of team in modern computer-aided design (CAD) systems - Help in design mechanical and electronical systems 		

Education	MS	Major	Electronical Engineering at Bauman Moscow State Technical University
		Research field	Vacuum Technologies
		Dissertation	Wide range sensor for determine vacuum and surface coverage ratio sorbate

Code # : EC20

Available for trip to Korea	Yes	Intellectual property Information	Patent No. 2479384 A method of producing ceramic products with nanoscale structure
Category of Research (by 6T)	NT(Nano Technology), ST(Space Technology)		
Available field for consulting	<p>- Currently working as Deputy Director of Science for Institute of Structural Macrokinetics and Materials Science RAS</p> <p>- ISMAN (founded in 1987) is based on the Department of Macroscopic Kinetics at the Institute of Chemical Physics, USSR Academy of Sciences. At that time, the Institute united a team of young, like-minded researchers that used the macrokinetic approach in their theoretical and experimental studies and had acquired a taste for practical app In terms of this approach, the process is controlled not only by the rates of chemical reactions and heat/mass transfer (as in classical macrokinetics) but also by the kinetics of phase and structure transformations in the system. In other words, the processes of product formation (its composition, texture, structure, and properties) are now considered to be of great importance. All this naturally stimulated development of new materials, which gave an addition to the name of the Institute (since 1998, it is the Institute of Structural Macrokinetics and Materials Science).</p> <p>Combination of the macrokinetic and materials studies has become a distinctive feature of the Institute.</p> <p>Nowadays, R&D at ISMAN is going on along the following lines:</p> <p>theoretical models of structural macrokinetics general theory of autowave and induction processes experimental investigation of solid-flame combustion theory and practice of chain reactions new catalysts and heterogeneous catalysis new systems for combustion chemistry new experimental techniques impact of external influences on SHS SHS in multicomponent systems SHS production of powders, materials, and items; SHS coatings SHS joining materials science of SHS products etc.</p> <p>The research work carried out at the Institute facilitates further integration of macrokinetics, chemistry, and technology. lications.</p> <p>-</p>		
Education	Ph.D	Major	-
		Research field	-
		Dissertation	SHS EXTRUSION OF MULTIFUNCTIONAL ELECTRODE MATERIALS FOR ELECTRIC SPARK ALLOYING

Code # : EC21

Available for trip to Korea	Yes	Intellectual property Information	-
Category of Research (by 6T)	IT(Information Technology), NT(Nano Technology), Technology for AgroTech,		
Available field for consulting	<ul style="list-style-type: none"> - Our innovative centers ultimately have a combination of IT and software engineers, scientists, researchers and technicians who carry out a full DSTU Research and Development strategy as part of global University Development Programme 2020. - In addition to our R&D centers, we invest in partnerships with educational centers all over the world in order to create the next generation of world-class experts. We have established collaborative partnerships with universities worldwide, investing more than 100 000 € in recent years to support joint programmes at DSTU and partner HEIs. - Active involvement in the work of R&D centers provides students a great chance to start their careers straight from the university and continue work in one of the R&D based partner companies. - MEDIAPARK “SOUTH REGION – DSTU - INDUSTRIAL COWORKING - RUSSIAN-CHINESE CENTER FOR INNOVATIONS AND HIGH TECHNOLOGIES TRANSFER - INTERNATIONAL EDUCATIONAL CENTER ARENA MULTIMEDIA - ROBOTICS DESIGN AND ENGINEERING PARK “DSTU-ROBOTICS” - INNOVATIVE TECHNOLOGICAL CENTER OF ENGINEERING EDUCATION “MESO-BUREAU” 		
Education	Ph.D	Major	-
		Research field	-
		Dissertation	The method of vibrational refinement of cylindrical parts by rolling (transporting) on a flat oscillating surface with lateral restrictions

Code # : EC22

Available for trip to Korea	Yes	Intellectual property Information	METHOD FOR PRODUCING CARBON NANOTUBES BY GAS-PHASE CHEMICAL DEPOSITION A method of manufacturing a sealed product of carbon-silicon carbide material
Category of Research (by 6T)	NT(Nano Technology), ST(Space Technology)		
Available field for consulting	<p>."Ural Research Institute of Composite Materials" specializes in research, development of technologies and production of articles from composite materials based upon carbon, ceramic and polymeric matrices. At present the Institute is one of the leading designers and manufacturers of composite articles.</p> <p>The Institute has mastered technology of manufacturing precise parabolic beam antennas of 5m diameter from polymeric composite materials. Within the frames of federal program on development of civil aviation equipment the research and development work was carried out along with preparation for serial production of shells and panels from composite materials for the ventilator duct of aircraft TU-204, TU-214, IL-96-300 and repair kit for the bottom part of jacket for TU 154 M. The Institute has developed the technology of manufacturing and winding load bearing shells onto sealed metallic liner to withstand operational pressure up to 150 Atm.</p> <p>Developments of "Ural Research Institute of Composite Materials" are confirmed by many patents and marked by celebrated awards of international exhibitions.</p>		
Education	Ph.D	Major	-
		Research field	-
		Dissertation	METHOD FOR PRODUCING CARBON NANOTUBES BY GAS-PHASE CHEMICAL DEPOSITION

Code # : EC23

Available for trip to Korea	Yes	Intellectual property Information	30 patents. Patent No. 2501108 Electrical insulation composition.
Category of Research (by 6T)	NT(Nano Technology), ET(Environment Technology), ST(Space Technology)		
Available field for consulting	<p>- The Institute operates in the Kabardino-Balkarian State University since 1957, at first under the name «Faculty of Civil Engineering», from 1960 to 2015 — «Engineering Department», in 2015 — «Polytechnic Institute», and from 2016 years- «Institute of Architecture, construction and design. »</p> <p>- Since 2017 has 3 institute departments and 2 colleges.</p> <p>Research Fields: Physics and chemistry of materials and processes of solid-state electronics;</p> <p>Research: Nonclassical boundary value problems for differential equations and their applications to environmental protection;</p> <p>Development of methods for improving the technical and economic performance of equipment and technologies of machine-building industries.</p> <p>Research of dynamics and reliability of machines and equipment; x-ray Diffraction crystallography;</p> <p>Physics of interphase phenomena.</p> <p>Thermal physics; New, metal, polymer, structural and composite materials, structural ceramics;</p> <p>Biodiversity of the Central Caucasus: composition, structure, dynamics, ecology, protection, rational use;</p> <p>Scientific bases of management of interaction of the person and environment;</p> <p>Mathematical and information and logical models and their computer assistance;</p> <p>Methods of increasing diamond tools durability ;</p> <p>Medical and biological research;</p> <p>Adaptive physiology and medicine;</p> <p>Physics of the atmosphere and near-earth space;</p> <p>Development of new nature conservation technologies.</p>		
Education	Ph.D	Major	-
		Research field	-
		Dissertation	Guanidine-containing polymers and nanocomposites based on them

Code # : EC24

Available for trip to Korea	Yes	Intellectual property Information	20. Patent No. 2407606 Damping Railway Patent No. 2349699 An iron-based high damping alloy with a regulated level of damping and mechanical properties and an article made of it
Category of Research (by 6T)	NT(Nano Technology), ET(Environment Technology), ST(Space Technology)		
Available field for consulting	<p>Central Research Institute of Iron and Steel named after Bardin is the leading Russian research center for the creation of metallurgical technologies and new materials</p> <p>Research Application / Advantages</p> <p>A flexible, individual approach to each order, taking into account the wishes of consumers</p> <p>Selection of materials in accordance with customer requirements</p> <p>The possibility of additional scientific research and research</p> <p>Development, adjustment and approval of regulatory documentation for the supply of products at the federal and industry levels</p> <p>Delivery of products in small batches</p> <p>Ensuring a high level of product quality</p> <p>Minimum lead time</p>		
Education	Ph.D	Major	-
		Research field	-
		Dissertation	The structural mechanism of the formation of a highly damping state in α -Fe-based ferromagnetic alloys

Code # : EC25

Available term for consultation	5 days	Available for trip to Korea	YES
Intellectual property Information	17 patents. Emap of the repair base area with visual display of health and safety hazards of the technological environment subject to their type 2015613552		
Category of Research (Choose 1 or more)	ST (Space Technology), Civil aircraft, MT (Material Technology)		
Available field for consulting	<p>- Currently working for United aviation corporation (UAC) of ROSTEC</p> <p>- Patents: e.g. Emap of the repair base area with visual display of health and safety hazards of the technological environment subject to their type 2015613552</p>		
Education	Ph.D	Major	Engineering
		Research field	-
		Dissertation	Modular positioning high-response hydraulic drive for automated machinery

Code # : EC26

Available term for consultation	5 days		Available for trip to Korea	YES
Intellectual property Information	-			
Category of Research (Choose 1 or more)	IT (Information Technology), NT(Nano Technology), ET(Environment Technology), ST(Space Technology), ME(Material&Equipment), MP(Manufacturing&Production)			
Available field for consulting	<p>(Career)</p> <ul style="list-style-type: none"> - 2019-current Adviser to CEO, Association RH ISTC - 2009-current Vice-president, Aviation and building technologies - 2016-2017 Deputy general director, New Defense Technologies <p>Projects for the export of high-tech dual-use and civilian products for Russian enterprises:</p> <ul style="list-style-type: none"> * Condor 2020 (the fight against air drug trafficking); * Modernization / equipment of airfields and helipads); * Promising systems for providing instrumental take-off / landing; * Promising building technologies <p>Continents: Latamerica, Middle East + Countries: CIS, India, Vietnam</p> <p>(Specialty)</p> <p>Specialization in regional and interstate high-tech projects related to the transfer of production and technology, including the industry:</p> <ul style="list-style-type: none"> - aerospace; - National Air Navigation Plans; - security systems and complexes (monitoring / protection / protection), including national and personal levels; - landfill systems in high technology; - complexes of airfields and control centers; - monitoring complexes (space-air surface); - complexes for ensuring accurate navigation / landing / special operations at the local and national levels. 			
	MS	Major	Moscow Institute of Physics and Technology (National Research University)	
		Research field	Flight Dynamics and Control	
		Dissertation	Development and testing of aerospace engineering	

Code # : EC27

Available for trip to Korea	Yes	Intellectual property Information	1) Russian utility model patent No. 113266 « Installation for cleaning swimming pool water using ozone, ultrasound, UV radiation and chlorine» (joint authors); 2) Patent for invention of the Russian Federation No. 2635129 «Waste water treatment system» (joint authors)
Category of Research (by 6T)	ET(Environment Technology), Shipbuilding		
Available field for consulting	1) Use of ozone, cavitation and UV radiation in swimming pool water treatment technology; 2) Design issues of a hydrodynamic cavitator; 3) Assessment of possible locations for swimming pool baths in the hull of passenger vessels; 4) Justification of the size of the ship's swimming pool bath; 5) Research on the quality of water preparation in swimming pools.		
Education	Ph.D	Major	Ship design and construction
		Research field	Water treatment, design of ship swimming pools
		Dissertation	Improving the design methodology for ship pools with their own water treatment system
	Diploma degree (5 year program)	Major	Shipbuilding
		Research field	Ship design
		Dissertation	Conversion of a 559B ship

Code # : EC28

Available for trip to Korea	Yes (up to 14 days)	Intellectual property Information	RU2651821C1. Method of localization of explosion of methane-air mixture and coal dust and device for its implementation
Category of Research (by 6T)	ET(Environment), ETC (Technology Transfer, Legal Services)		
Available field for consulting	<p>1) Career Abstract</p> <ul style="list-style-type: none"> - Education: 1991, attorney at law, the Red Banner Order Military Institute (Moscow) of the Ministry of Defense of the USSR - (1991-1995) Serviced in the Armed Forces of the Russian Federation in officer posts in a military court (Znamensk, Astrakhan Region) - (1995-August 2019) Advocate specialized in natural resources development & technical expertise, a member of Moscow Bar Association - (2004-August 2019) Chairman of the Presidium, Law Firm «Borodin & Partners» - (2004-2009) Chairman of the Board of Directors, CJSC Belovskaya Mine (Kemerovo Region) - 2016 – Multinational Joint R&D and JV Project in soft-magnetic materials (by technology transfer from Russian Fed.) - (2017-2019) Advisor to Director General, State Scientific Center VOSTNII for Industrial & Environmental Safety in Mining Industry of the Russian Federation (JSC «NC VOSTNII») - August 2019 - Deputy General Director, State Scientific Center VOSTNII for Industrial & Environmental Safety in Mining Industry of the Russian Federation (JSC «NC VOSTNII») / Head of Moscow Representative Office <p>2) Consultation Fields</p> <ol style="list-style-type: none"> 1. Research Activities 2. Expertise and Conclusions in the field of Industrial Safety 3. Testing and Certification 4. Environmental Monitoring 5. Scientific and Educational Activities 6. Publishing 7. Design Bureau 8. Scientific and Technological Support 9. Development of Regulatory Documents for the Mining Industry 10. Development of Technical Regulations of the TR TS, GOSTs(EAS), Technical Specifications of TU. 11. Technology Transfer Process Management (especially between Russian & Korean partners) <p>3) Related Networks</p> <ul style="list-style-type: none"> - Top and working-level contacts with RTN (Rostekhnadzor) and its certification & testing laboratories, Ministry of Natural Resources and Environment, Federal Agency for State Property Management, Federal Security Service, Ministry of Justice etc. <p>4) Expected effect</p> <ul style="list-style-type: none"> - Provide optimized services for products related to industrial (e.g. energy sector) & ecological safety in accordance with Russian legislations - Management of technology transfer 		
		MS	Major
		Research field	Juridical Field (Aviation Law)
		Dissertation	Aviation & Space Law Regulation Measures

Code # : EC29

Available for trip to Korea	Yes (up to 14 days)	Intellectual property Information	IP possessed by VostNII (RU2631516C1 Method for detecting underground fires etc.)
Category of Research (by 6T)	ET (Environment), Procurement Program		
Available field for consulting	<p>1) Career Abstract</p> <p>(2003-2007) Court clerk, Moscow City Court</p> <ul style="list-style-type: none"> - maintaining minutes of court hearings; - registration of received cases from district courts; - execution of convicted persons to participate in court hearings; - registration of exemptions (in case of release of convicts in the courtroom); - entering information on the cases examined into the information base of the court; - consultation of citizens on issues related to the compilation and filing of cassation complaints. <p>(2007) Penalties Inspector, Rusdolgnadzor</p> <ul style="list-style-type: none"> - work with bank customers on issues of arrears; - conducting telephone conversations with customers in arrears to banks; - customer consultation on loan repayment issues; - monitoring of debts from identification to repayment; - work with credit documentation. <p>(2007-2009) Legal adviser, Atman</p> <ul style="list-style-type: none"> - participation in the work on amending the constituent documents of the organization; - study, analysis and generalization of the results of claims, court and arbitration cases, the practice of concluding and executing contracts; - participation in the conclusion of business contracts (in a row, the provision of services, delivery, purchase and sale), conducting their legal examination, consideration of questions about accounts receivable and accounts payable; - providing legal assistance to structural units of the organization in the preparation and execution of various kinds of legal documents; - collection of information, materials and documents for the preparation of statements of claim, claims, preparation of drafts of these documents; - participation in court hearings, familiarization with case materials in courts of general jurisdiction and arbitration courts; - work with notary offices, including the provision of notarized copies organization documentation and contracts; <p>(2009-2013) Legal adviser, TransTelecom</p> <p>Claim work, enforcement proceedings:</p> <ul style="list-style-type: none"> - legal expertise and analysis of documents for the presentation of claims to counterparties; - preparation and submission of claims to counterparties; - interaction with contractors on issues of voluntary and timely satisfaction claims; - consideration and analysis of claims received, preparation of reasoned answers (objections) - control of the terms of consideration of claims; - accounting and storage of claims filed in production and completed by execution; - analysis and study of existing claims work practices. - Representation and protection of the interests of the organization in courts of general jurisdiction and arbitration courts including those located in different regions of the Russian Federation (business trips); 		

- preparation of statements of claim, statements on contesting decisions, actions (inaction) government officials;
- preparation of appeals, cassation complaints;
- accounting and storage of pending and completed court cases;
- analysis of judicial practice.
- support of enforcement proceedings;
- the implementation of activities to enforce judicial acts, including the number of recovery of funds, return of property;
- preparation of necessary documents (decrees, requests, statements, accompanying letters) for the execution of the decision;
- submission of executive documents for execution;
- familiarization with materials of enforcement proceedings;
- presence during the execution of actions by the bailiff;
- legal assessment of the actions of bailiffs, incl. appeal of actions (inaction) bailiff.

Legal work:

- preparation of draft civil law contracts (in a row, the provision of services, supply);
- preparation of additional agreements to concluded agreements, termination agreements contracts;
- preparation of official letters (requests, refusals, notice of termination of the contract, answers to claims, etc.);

Corporate work:

- registration of powers of attorney;
- introduction of amendments to constituent documents;
- interaction with the IFTS, notaries;

Labor law, supervision of personnel work:

- Representation in courts of general jurisdiction in labor disputes (dismissal, illegal translation, wage disputes, etc.);
- challenging in court decisions, actions (inaction) of the state labor inspectorate, bailiffs; (2013-2014) Deputy Head of Contract Management, Administration of Zhukovsky urban district
- management of management activities
- organization of current and long-term planning of management activities, taking into account the goals, objectives and directions for the implementation of which it was created;
- ensuring control over the implementation of planned tasks, coordination of the work of management employees;
- Providing methodological and practical assistance to employees of the department on issues of preparation and participation in municipal procurement;
- making suggestions for improving the management workflow;
- participation in the selection and placement of management personnel, in the organization of raising their qualifications and professional skills;
- participation in the preparation and certification of management employees;
- ensuring the timely preparation of established reporting documentation;
- participation in municipal procurement (tenders, auctions);
- Interaction with the heads of departments on the specifics and pricing.

(2015-2019) Head of Procurement, State Budget Institution of Road Agency of Moscow region (Mosavtodor)

- management of the service
- organization of current and long-term planning of the service's activities taking into account the goals, objectives and directions for the implementation of which it was created;

- ensuring control over the implementation of planned tasks, coordinating the work of departments and service employees;
- the provision of methodological and practical assistance to employees of departments on the issues of preparation and participation in procurement;
- making suggestions for improving the work process of the service;
- participation in the selection and placement of service personnel, in the organization of advanced training and professional skills;
- participation in the preparation and certification of service employees;
- ensuring the timely preparation of established reporting documentation;
- conducting public procurement from the budget of the Moscow Region (open tenders, electronic auctions, requests for proposals, requests for quotations, purchases from a single supplier, contractor, contractor);
- interaction with the heads of structural divisions on the specifics and pricing;
- interaction with central government bodies (the Main Directorate of Road Facilities of the Moscow Region, the Main Control Department of the Moscow Region, the Ministry of Economy of the Moscow Region, the Ministry of Finance of the Moscow Region, the Committee for Competition Policy of the Moscow Region) on the issues of coordination and procurement;
- participation in meetings of the Interdepartmental Commission on the assessment of the validity of procurement (procurement of more than 50 million rubles);
- Representation of the interests of the institution in the Federal Antimonopoly Service of Russia, Office of the Federal Antimonopoly Service of Russia in the Moscow Region. (August 2019 - Present) Deputy Head of Moscow Representative Office, State Scientific Center VOSTNII for Industrial & Environmental Safety in Mining Industry of the Russian Federation (JSC «NC VOSTNII»)

2) Consultation Fields

1. Expertise for Federal & Regional Government Procurement Programs
2. Expertise and Conclusions in the field of Industrial & Environment Safety
3. Development of Regulatory Documents for the Mining Industry
4. Technology Transfer Process Management (especially between Russian & Korean partners)

3) Related Networks

- Top and working-level contacts with Moscow Region Government, banking sector, RTN (Rostekhnadzor) and its certification & testing laboratories, Ministry of Natural Resources and Environment, Federal Agency for State Property Management, Federal Security Service, etc.

4) Expected effect

- Provide optimized services for procurement programs in accordance with Russian legislations
- Management of technology transfer

Education	MS	Major	Organization Management at National Institute named after Catherine the Great (Moscow)
		Research field	Organization Management in the Government Administration
		Dissertation	Organization Management in the Government Administration
	MS	Major	Faculty of Law at Law Academy of the Ministry of Justice of the Russian Federation (Moscow)
		Research field	Administrative Jurisprudence
		Dissertation	Administrative Law

Code # : EC30

Available term for consultation	1 week	Available for trip to Korea	Yes
Intellectual property Information	RU111027U1 (Device for grinding weighted particles in irrigation systems) and others		
Category of Research (Choose 1 or more)	NT, ET		
Available field for consulting	<p>1. Career Path(Experience)</p> <ul style="list-style-type: none"> - PhD, Laboratory for Research and Implementation of Advanced Technologies to Prevent Methane and Coal Dust Explosions in Mines - (2005-Current) Development of regulatory documents, application of methods for prevention of methane and coal dust explosions in coal mines. - (2009-Current) Head of Dust Control and Dust Explosion Protection Laboratory <p>2. Consultation fields</p> <ul style="list-style-type: none"> - Prevention of methane and coal dust explosions in coal mines - Reduction of coal dust in open atmospheres (mine, yard, port etc.) - We are now researching a gaseous inhibitor to prevent methane explosions and will need international R&D programs to commercialize the project <p>Field: Mining.</p> <p>Application relates to the mining industry, in particular to methods and devices for localizing explosions of methane-air mixture and coal dust. To this end, in the method, a primary blasting agent-a flame-extinguishing cloud-is formed by the energy of a compressed gaseous inhibitor, in addition to the powder in the suspended state, in the flow of the shock air wave. At the same time, with the formation of the primary explosive-shielding barrier from the extinguishing powder in the suspended state and the gaseous inhibitor before the propagating flame front, form a secondary barrier from the gaseous inhibitor behind the flame front in the zone of heated explosion products consisting of carbon monoxide, hydrogen and homologues of methane capable of exploding and igniting. Moreover, the secondary explosive-shielding barrier is formed by the energy of a compressed gaseous inhibitor fed into the heated-up explosion product stream, with the possibility of inhibiting explosive mixtures and cooling the temperature on the front of the flame and the products of the explosion, both primary and secondary explosion-blocking barriers form behind it. Also provided is an apparatus for carrying out a process in which a working chamber filled with a compressed gaseous inhibitor is divided, by means of a perforated metal membrane, into two equal containers V1 and V2. At the same time, on the left side of the piston there is a protrusion for supporting metal balls by reducing the diameter of the piston, and in the right part of the piston seals are arranged. Assembly connected to the outboard metal bar is connected to a sliding sleeve made with two grooves to move the supporting metal balls when the device is triggered by the impact air shock. Remote metal rod at both ends is equipped with two shields for receiving the force impact of the shock air wave, both from the side of the extension rod, and from the side of the cone hopper. Hopper for placing the flame-suppressing powder is in the form of a truncated cone.</p> <p>Effect: increasing the efficiency and reliability of localization of methane explosions, but primarily coal dust spreading through a network of mine workings.</p> <p>3. Related Networks</p> <ul style="list-style-type: none"> - Contacts with RTN (Rostekhnadzor) and its certification & testing laboratories, coal mining major corporations (e.g. SUEK etc.) in Siberian Region, Russian Academy of Science (RAS) etc. <p>4. Awards & Certification</p> <ul style="list-style-type: none"> - (2011) Gratitude of the Ministry of Energy of the Russian Federation - (2016) Certificate of Merit of the Ministry of Energy of the Russian Federation - (2016) Medal "For Work and Devotion to Science" 		

- (2016) Medal "For Faith and Good"

5. Expected effect

- Prevention of methane and coal dust explosions in coal mines,
- Industry death reduction
- Reduction of coal dust in open atmospheres (mine, yard, port etc.)

6. Appx.

- (2005) PhD (Engineering Science)

Education	Ph.D	Major	Engineering Sciences
		Research field	Mining engineering
		Dissertation	Development of a method for predicting the dust situation in coal mines based on large-scale parameters

Code # : EC31

Available term for consultation	1week	Available for trip to Korea	Yes
Intellectual property Information	-		
Category of Research (Choose 1 or more)	IT (Information Technology), <u>Software development</u>		
Available field for consulting	<p>1. Career Path (Experience)</p> <ul style="list-style-type: none"> - (2018 ~ current) Software Architect \ CTO in I-EXP, main responsibilities are business analytics of new projects, strategy and roadmap of software development, team management, development cost estimation, edutech - (2015 ~ 2018) Head of the Department in Tecon MT, main responsibilities were organization and technical leading of a new department of software development and verification for microelectronics development, verification of new processor with RISC-V architecture, system software development, DevOps, team management - (2013 ~ 2015) Software Developer in mail.ru, ICQ client software development for Android/Windows platforms - (2009 ~ 2013) Lead Software Developer in Stoloto, main responsibilities were statistical analysis of new lotteries, payment terminal software development, cloud processing software development, system integration with partners software - (2008 ~ 2009) Software Developer in Cyberplat, C++\Qt programmer in payment terminal software - (2006 ~ 2008) Software Developer in AAM Systems, C++, application programmer in access control system software <p>2. Consultation fields</p> <ul style="list-style-type: none"> - Implementation of DevOps automation - Project analysis and collection of requirements - Software development cost estimation - Software development team organization and management - Strategic business planning and Project management methodologies (SWOT-analysis, 6Sigma, TRIZ, Stage Gate, Value Curve, etc) - Edutech, innovative educational technologies <p>3. Certification</p> <ul style="list-style-type: none"> - MBA of Information Management <p>4. Relate Networking</p> <ul style="list-style-type: none"> - Association of graduates of IT-Management School <p>5. Expected effect</p> <ul style="list-style-type: none"> - Mentee (Applicants) can get the methodologies how to evaluate the new project's cost and development period - Organize software development life cycle - Organize software testing and verification - Software requirements analysis 		
Education	MBA	Major	Informational management
		Research field	Software development organization, development management, cutting edge technologies
		Dissertation	Software development cost estimation
	MS	Major	Applied Mathematics and Informatics
		Research field	Real-time decision support systems
		Dissertation	Temporal databases research and realization
BS	Major	Applied Mathematics and Informatics	

Code # : EC32

Available term for consultation	Up to 1 week	Available for trip to Korea	Yes
Intellectual property Information	-		
Category of Research	IT(Information Technology)		
Available field for consulting	<p>Area of expertise: machine learning, data mining, computer vision, IoT</p> <p>Programming languages: Python, C, C++, C#, Objective-C</p> <p>Libraries/Frameworks: Tensorflow/Keras, PyTorch, Caffe, NVIDIA TensorRT, Intel nGraph, various python libraries</p> <p>Data science: Machine learning, deep learning, convolutional neural networks, recurrent neural networks, computer vision, regression models, hierarchical cluster analysis, video analytics, neural networks optimization, big data analysis, NLP</p> <p>Other: Git, PostgreSQL, TeX, basic skills of iOS and IoT development</p> <p>Languages: Russian (native), English (fluent)</p> <p>Projects & experience: 3 year experience as a developer, data scientist and software engineer.</p> <p>Completed various IT-projects:</p> <ul style="list-style-type: none"> • Object detection and recognition in images and videos (faces, people, cars etc.) • Classification (emotions, age, gender, insects etc.) • Text clusterization • Style transfer <p>Have wide experience with customer code and models integration, models tuning and heuristics design for production usage, full customer interaction.</p> <p>Technologies used: CNNs, RNNs, GAN, MapReduce, CUDA, TensorRT, OpenCL, MIOpen, Intel MKL-DNN, nGraph. Tools: Docker/NVIDIA Docker, Selenium, PyCharm, Jupyter Notebook, Sublime; Atlassian stack: JIRA, Confluence, Bitbucket, Trello etc.</p> <p>Education: Specialist in mechanics and mathematics Moscow State University (MSU) September 2009 — July 2014</p> <p>Consultation fields</p> <ul style="list-style-type: none"> - How to classify and deconstruct problems and build neural networks architectures based on the problems specifics (NLP, CV, ASR, etc.) - How to cut and optimize architectures to speed up inference with minimal quality loss - How to speed up inference using TensorRT - How to use multiprocessing and train networks using multi GPU - How to build efficient algorithms <p>Expected effect</p> <ul style="list-style-type: none"> - Applicants can implement AI solutions into their own products. - Applicants can automate workflows and optimize inner processes. - Applicants can speed up solutions to reach desired quality and speed metrics values. 		
Education	MS	Major	Mechanics and mathematics
		Research field	Probability theory
		Dissertation	On galactic dynamo equations with helicity flows and random coefficients

Code # : EC33

Available term for consultation	Up to 1 week	Available for trip to Korea	Yes
Intellectual property Information	-		
Category of Research	IT (Information Technology)		
Available field for consulting	<p>Area of expertise: machine learning, data mining, computer vision, IoT.</p> <p>IT: Python, C++, algorithms and data structures.</p> <p>Libraries: NumPy, OpenCV, TensorFlow, Keras, Darknet, Torch, Flask.</p> <p>Big Data: Hadoop, Apache Spark.</p> <p>Data science: Machine learning, neural networks, deep learning, reinforcement learning, computer vision, NLP, STT.</p> <p>Languages: Russian (native), English (fluent).</p> <p>ML researcher and developer in various fields:</p> <ul style="list-style-type: none"> • Took part in a quality control project for a restaurant network (implemented product quality analysis tools for video streaming, managed application's back-end and front-end servers); • Designed neural networks for an insurance company for document classification; • Designed neural networks for eye disease detection for a pharmacy company; • Developed highly optimized pipeline, designed, trained and accelerated neural networks for license plate detection/segmentation and recognition; • Designed neural networks for specified objects detection and classification; • Conducted research, gathered and processed data for speech recognition and synthesis, trained neural networks; • Had experience with Super Resolution GAN networks for film quality improvement; • Designed and tuned high quality neural networks for age and gender classification using facial images; • Had vast experience in systems and network administration, server solutions and infrastructure scripts, including nginx, SQL, Django, CRON, etc. <p>Technologies used: CNNs, RNNs, GAN, Vowpal Wabbit, MapReduce, Wav2Letter, Tacotron 2, BERT, nltk, CUDA, TensorRT.</p> <p>Tools: Docker/NVIDIA Docker, Selenium, SoX, FFmpeg, PyCharm, Jupyter Notebook, Sublime; Atlassian stack: JIRA, Confluence, Bitbucket, Bamboo, etc.</p> <p>Education: September 2009 — July 2014 Specialist in mechanics and mathematics Moscow State University (MSU)</p> <p>Additional: September 2015 — June 2017 Big Data specialist Yandex School of Data Analysis (YSDA)</p> <p>Consultation fields</p> <ul style="list-style-type: none"> - How to classify and deconstruct problems and build neural networks architectures based on the problems specifics (NLP, CV, ASR, etc.) - How to cut and optimize architectures to speed up inference with minimal quality loss 		

- How to speed up inference using TensorRT
 - How to use multiprocessing and train networks using multi GPU
 - How to build efficient algorithms
- Expected effect**
- Applicants can implement AI solutions into their own products.
 - Applicants can automate workflows and optimize inner processes.
 - Applicants can speed up solutions to reach desired quality and speed metrics values.

Education	MS	Major	Mechanics and mathematics
		Research field	Mathematical and Computer Methods of Analysis
		Dissertation	On the arithmetic problems of the Merkle-Damgaard hash function

Code # : EC34

Available term for consultation	free	Available for trip to Korea	Yes
Intellectual property Information	-		
Category of Research (Choose 1 or more)	IT (Information Technology), Data Science, Computer Vision, Image Processing		
Available field for consulting	<p>1. Career Path (Experience) and Responsibilities.</p> <ul style="list-style-type: none"> - (February 2019 – Current) I-EXP Data Scientist/ML Engineer Collection, analysis and preparation of data for training Development and implementation of architectural solutions Research and development of product quality metrics - (November 2016 – December 2018) CadEx Software developer/Mathematician Development and support of software for converting, modeling and visualizing 3D data Development, analysis and optimization of algorithms for data processing Performance analysis and optimization <p>2. Consultation fields</p> <ul style="list-style-type: none"> - Gathering, preparation and analysis of data before training - Model selection and optimization for specific architecture - Improving model prediction quality - Preparation and processing of images before training, fusion of several images - Detection, classification, recognition, verification, determination of the color of faces from one or more photos - Detection, classification of clothes and look generation for fashion tasks - Create high-quality image descriptors for searching tasks - Using generative models for swap and transfer tasks <p>5. Expected effect</p> <ul style="list-style-type: none"> - Simplify data preparation before training - Optimization of model architecture creation processes - Improving the quality of predictive and generative models, algorithms, and architectures 		
Education	MS	Major	Data Science at Higher School of Economics
		Research field	Deep Learning, Computer Vision, Image Processing
		Dissertation	Deep Learning of Energy and Nutritional Value in Food Analysis from Video
	BS	Major	Applied Mathematics and Informatics at Lobachevsky State University of Nizhni Novgorod
		Research field	Nonlinear dynamical systems
		Dissertation	Synchronous modes in chains of coupled pendulums

Code # : EC35

Available term for consultation	Free	Available for trip to Korea	Yes
Intellectual property Information	From Oct 2005 till 2009 all obtained results are regarded to technological issues belong to Samsung Electronics (SEC). The results can be accessed after getting a permission from SEC. My papers (more than 50) have been published at Russian and foreign journals.		
Category of Research (Choose 1 or more)	Optics and Photonics, Optics of lasers, Informational optical devices and laser systems		
Available field for consulting	<p>1. Career Path (Experience)</p> <ul style="list-style-type: none"> - (2016 - Current) Vavilov State Optical Institute, St.-Petersburg, Technical expert-consultant - (2010 - 2016) Vavilov state optical institute, St.-Petersburg, General director assistant, Head of Department, promotion of the Institutes developments in the field of laser optical technologies - (2005 - 2009) Samsung Electronics, Corporate Technology Operation (CTO), Mechatronics & Manufacturing Center, Suwon, Korea. Principal Engineer, UV Holographic Nanolithography - (2001 - 2005) St.-Petersburg State University for Information Technology, Mechanics and Optics, St.-Petersburg, Russia, Professor Associate. Lecturing - (2000 - 2005) LOMO PLC – Leningrad Optical Mechanical company, St.-Petersburg, Head R&D - (1993 – 2000) Research Institute for Laser physics, St.-Petersburg, Senior Research Scientist <p>2. Consultation fields</p> <ul style="list-style-type: none"> - Applied photonics and optics, - Lasers, laser optical systems and its applications, - Traditional and modern optical materials - Precision measurement systems, - Optical devices for various purposes, - Optoelectronic devices and systems - Manufacturing of optics - Testing <p>For several years I was employed as a consultant in companies:</p> <ul style="list-style-type: none"> - LIMO Microoptik GmbH, Dortmund, Germany, - Center for Advanced Research in Space optics (CARSO), Area Science Park, Trieste, Italy, - Industrie Anlagen Betriebs Gesellschaft, IABG, Muenchen, Germany - Schneider GmbH &Co, Fronhausen ,Germany <p>3. Certification</p> <ul style="list-style-type: none"> - May be possible based on Russian standards only <p>4. Relate Networking</p> <ul style="list-style-type: none"> - Member of Rozhdestvenski Optical Society, Russia - Member of International Society for Optics and Photonics (SPIE) , USA - Member of European Optical Society (EOS) , EU <p>5. Expected effect</p> <ul style="list-style-type: none"> - Results of the consultations will help to prepare proposals for grant programs 		

- Improve product quality, performance efficiency and process of optical devices manufacturing
- Search for optimal solutions for advanced device development on all stages of manufacturing, testing and production
- Reduce loss and cost saving thru process optimization

6. Appx.
List of some references: (see Attachments):

- Research Institute for Laser Physics, St.-Petersburg, Russia
- Leningrad Optical-Mechanical Company -LOMO PLC, St-Petersburg, Russia
- Samsung Electronics, CTO, Mechatronics & Manufacturing Technology center, Suwon, Korea

Education	Ph.D	Major	Laser optics
		Research field	Laser optical systems and their applications
		Dissertation	Dissertation Title: High Precision Laser Interferometer for Geophysical Applications, Vavilov State Optical institute Diploma TN-102281,09.09.1987, Saint-Petersburg, Russia
	MS	Major	Physics, Applied Optics
		Research field	Optics and spectroscopy
		Dissertation	Title: "Spectral investigation of continuous high-current Ar-laser", Physical faculty, Leningrad State University, Russia Diploma U-502909, 31.05.1972
		Degree Associated Professor	Senior Research Scientist (Associated Professor) , Research Institute for Laser Physics, Saint-Petersburg, Russia Diploma 5-US , 23.04.1998
	EU Program	Research and management, marketing	Area Science Park, Trieste, Italy Certificate, 20.12.1999
	EU Program	Scientific Management	Lovanium University, Loeven, Belgium Certificate, 15.05.1999
	Personal:		Steady, reliable person, non-smoker, in good health. Hobbies: ski sport, photography. Diploma - coach of boating tourism (rafting) Life style: active sport man

Code # : EC36

Available term for consultation	<u>ETC</u>	Available for trip to Korea	Yes
Intellectual property Information	<p>> 10 patents in client projects.</p>		
Category of Research	<p>ET(Environment Technology), ME(Material&Equipment), MP(Manufacturing&Production)</p>		
Available field for consulting	<p>Certificate of TRIZ specialist №64 of the International TRIZ Association. See appendix 1.</p> <p>Work experience:</p> <ul style="list-style-type: none"> -(March 2011 – Current) Individual entrepreneur, TRIZ-consultant. Problem solver. Projects for EVRAZ, ROSATOM, etc. -(December 2009 – March 2011) TRIZ – consultant in “Technopark of Saint-Petersburg”. Russia. <p>Activities: The help to technopark’s residents in the problem solving of manufacture and production improvement.</p> <ul style="list-style-type: none"> -(July 2005 – February 2009) TRIZ – consultant in Samsung SDI, Suwon, South Korea. <p>Activities: The help to working groups in the problem solving of manufacture and production improvement. TRIZ training.</p> <p>See Appendix 2.</p> <ul style="list-style-type: none"> -(October 1995 – February 2003) TRIZ – expert in Algorithm Ltd. Team manager of advice project, technical problem solver, researcher. -(April 1987 – September 1995) Engineer in Shipbuilding Design Office “RUBIN”, Researcher and developer of the Computer-aided Projecting System (CAPS). <p>Duties: Designer of technical descriptions for the CAPS. Designer drawings of hull.</p> <p style="text-align: center;">CV</p> <p>I’m problem solver in scientific and technical area, on the basis of methods of technical creativity of TRIZ and FCA.</p> <p>Professionally I work as the TRIZ-consultant since 1995.</p> <p>For this time it is executed more than hundred projects and several hundreds solutions are made. The part of decisions is patented by customers, including for my name. On Samsung SDI it is sent about 20 applications for patents.</p> <p>I completed dozens of practical seminars for Russian corporations, with a solution of about 200 real problems of customers.</p> <p>List of tasks to be solved:</p> <ul style="list-style-type: none"> • Solutions to non-standard production problems; • Product improvement; • Cheaper production; • Forecast of product development; • Solving the problems of production modernization; • Elimination of marriage and losses; • Import substitution and circumvention of patents; • Advanced training for engineers, training for TRIZ. <p>The brief list of projects, for an illustration of a range of TRIZ works.</p> <p>For company Procter&Gamble:</p> <ol style="list-style-type: none"> 1. Improvement of hygiene products - several projects.. 2. Manufacturing process of a potato powder. <p>For company Motorola:</p> <ol style="list-style-type: none"> 3. Reduction in price of the case of a choke for fluorescent lamps. <p>For company Ford:</p> <ol style="list-style-type: none"> 4. Elimination of defect of an automatic transmission. <p>For other companies:</p> <ol style="list-style-type: none"> 5. Verification of technologies for tire recycling, manufacturing of boxes for a pizza, juices concentrating by freezing-out. 6. Not invasive measurement of a level of sugar in blood. 		

For Samsung SDI (about 100 projects/consultations):
 7. A portable energy source on the basis of fuel cells.
 8. Reduction prices of the chassis of the plasma TV.
 9. Improvement of the display for mobile phone - some projects.
 10. CRT the TV - some projects on reduction of depth of a kinescope.
 11. Lithium-ion accumulators - some projects for maintenance of passage of tests on safety.
 12. Elimination of various defects during manufacture PDP.

Education	Ph.D	Major	Electronics Engineering
		Research field	Non-volatile Memory(PRAM, MRAM, FRAM), Semiconductor packaging process, equipment and materials(Adhesive, film)
		Dissertation	Flexible transparent GO-NH2-AgNP/AgNW/PET multilayer electrode for nonvolatile memory applications
	MS	Major	Advanced Materials Engineering
		Research field	Advanced materials manufacturing web-coating, roll-to-roll, vanish mixing)
		Dissertation	Microstructure evolution mechanisms and physical, mechanical properties of kinetic and thermal sprayed multi-walled carbon nanotube reinforced metal composite coatings
	BS	Major	Electronics Engineering

Code # : EC37

Available term for consultation	Free	Available for trip to Korea	Yes
Intellectual property Information	From 2004 till 2006 all obtained results are regarded to technological issues belong to Samsung Electro-Mechanics Co., Suwon, Republic of Korea. The results can be accessed after getting a permission from SEM. All other patents and all my papers are in my own personal Intellectual property		
Category of Research (Choose 1 or more)	Materials Science and Technology, Optoelectronic materials and devices. Luminescence and luminescent materials. LED experience		
Available field for consulting	<p>1. Career Path(Experience)</p> <ul style="list-style-type: none"> - 2011-present. <i>Principal Researcher</i>, Institute of Applied Physics, Academy Sciences of Moldova, Republic of Moldova - 2012. <i>Visiting Professor</i>, School of Materials and Mineral Resources Engineering Universiti Sains Malaysia, 14300 Nibong Tebal, Penang, Malaysia - 2007-2011 <i>Research Professor</i>, Department of Materials Science and Engineering, Gwangju Institute of Science and Technology (GIST), Republic of Korea. - 2004-2006. <i>Principal Researcher</i> in Samsung Electro-Mechanics Co., Suwon, Republic of Korea. - 2003-2004. <i>Research Professor</i>, Department of Materials Science and Engineering, Korea Advanced Institute of Science and Technology (KAIST). Display Material Lab., Material Science department, Republic of Korea - 1979-1982. <i>Professor</i> in Annaba State University, Algeria - 1973-2003. <i>Associate professor</i>, Chair of Physics, Technical University of Moldova. <p>2. Consultation fields</p> <p>Professional with extensive research and teaching experience in Materials Science and Technology.</p> <p>Materials analysis, characterization and testing;</p> <p>Optoelectronic materials and devices.</p> <p>Luminescence and luminescent materials</p> <p>Synthesis and investigation of luminescent properties of phosphors. Synthesis of nanophosphors and phosphors with submicron size.</p> <p>Physical and chemical methods of phosphor treatments to improve their light-emitting performance.</p> <p>LED experience.</p> <p>Expert and consultant in the area of light-emitting materials and devices.</p> <p>Reviewer and consultant of the International journals: Solid State Chemistry, Journal of Luminescence, Optical materials, Journal of Crystal Growth, Electrochemical and Solid-State Letters, Materials Science and Engineering, Materials Research Bulletin, Journal of Alloys and Compounds, Journal of non-crystalline Solids, etc;</p>		

3. Certification

Doctorate certificate, MFM No 021128, Moscow, Russia

4. Relate Networking

Member of the New-York Academy of Sciences.

Member of the Optical Society of Korea

Member of the Luminescence Society of India

Member of the Microscopy Society of Malaysia

5. Expected effect

Mentee(Applicants) can get the methodologies how they can logically prepare proposal for the government grant program

Improve product quality and manufacturing yield in luminescent materials
reduce loss and cost saving thru process optimization

Tech. driven discussion for advanced device development on all stages of manufacturing and testing

6. Appx.

Research Professor, Department of Materials Science and Engineering, Korea Advanced Institute of Science and Technology (KAIST).

Principal Researcher in Samsung Electro-Mechanics Co., Suwon, Republic of Korea.

Visiting Professor, Department of Materials Science and Engineering, Gwangju Institute of Science and Technology (GIST), Republic of Korea.

Invited Professor, School of Materials and Mineral Resources Engineering Universiti Sains Malaysia, 14300 Nibong Tebal, Penang, Malaysia

CV and List of main references: (see Attachments)

Education	Ph.D	Major	Electron microscopy
		Research field	Semiconductors and dielectrics at low temperatures
		Dissertation	Dissertation Title: Electron microscopy of semiconductors at low temperatures Doctorate certificate, MFM No 021128, Moscow, 07.12. 1973, Russia Moscow State University, Moscow , Russia
	MS	Major	Advanced Materials Engineering
		Research field	Physics, Electronics Engineering, Advanced materials manufacturing
		Dissertation	Diploma N 634716, Moscow State University, 27.01. 1970, Moscow, Russia Moscow State University, Moscow , Russia
	BS	Major	Electronics Engineering

Code # : EC38

Available term for consultation	free	Available for trip to Korea	Yes
Intellectual property Information	150 scientific paper (Scopus and Web of science); 5 patents		
Category of Research (Choose 1 or more)	IT(Information Technology), NT(Nano Technology)		
Available field for consulting	<p>1. Career Path(Experience)</p> <ul style="list-style-type: none"> - (1996 ~ 1998) Applied Phase Transition Co. in USA (DARPA project “Nonorganic resist for photo- and E-beam lithography) - (1999 ~ 2005) Professor of the Petrozavodsk State University - (2005 ~2009) Senior Researcher in Devices Lab, SAIT, Samsung Electronics Co.: Research in Non-volatile Memory (Resistance Random Access memory – hear after ReRAM), in oxide electronics technical units (heterostructures – diodes and transistors) of Devices Lab. - (2009 ~current) Professor of the Petrozavodsk State University. <p>2. Consultation fields</p> <p>Applicant provide ideas, advise, and work related to the oxide electronics in technical devices of interesting company:</p> <p>(a) Technical support for standard or novel activities:</p> <ul style="list-style-type: none"> - Contribution to non-volatile ReRAM memories (investigation on the physics and engineering for materials and construction of convenient devices). - Contribute to oxide electronics structures and devices (oxide transistors with high mobility channel, oxide diodes with high direct currents) - Contribute to investigations devices utilizing metal-insulator (MIT) in different oxides materials. - Anodic oxidation (new materials, new technologies, application for constructions new devices in nano scale. <p>(b) Follow-up research activities</p> <p>3. Certification</p> <ul style="list-style-type: none"> - Technology Transfer Manager (completed certified training under the CRDF "Transfer technology management" program in the United States). - Government certificate (scientific and pedagogical expertise in the field of semiconductor electronics). <p>4. Expected effect</p> <ul style="list-style-type: none"> - Applicants can get the methodologies how we can logically prepare proposal for the government grant program - Improve product quality and manufacturing yield in semiconductor production - reduce loss and cost saving thru process optimization - right material selection for constructions thin film nano-scale semiconductor devices especially for oxide electronics (especially flexible and transparent) - Tech. driven discussion for advanced device development on early stage(device scale, form factor, configuration, production). 		
Education	Ph.D	Major	Physics, Electronics Engineering
		Research field	Non-volatile Memory (ReRAM,), Oxide electronics.
		Dissertation	Metal-insulator transition in amorphous dioxide vanadium
	MS	Major	Physics, Advanced Materials Engineering
		Research field	Properties of the transition metal oxide
		Dissertation	Metal-insulator transition in anodic oxide materials
BS	Major	Physics, semiconductor electronics	

Code # : EC39

Available term for consultation	Free	Available for trip to Korea	Yes
Intellectual property Information	More then 10 Patents		
Category of Research	ME(Material&Equipment), MP(Manufacturing&Production), <u>New type of energy sources</u>		
Available field for consulting	<div style="text-align: center;">  </div> <p>Eng. Oleg V. Olshansky Alternative energy Engineer and Honored Inventor Born December 30, 1953.</p> <p>Key specialties: design and implementation of alternative energy plants, engineering, automation, power & heat generation, transportation and industrial energy, CAD/CAE design.</p> <p>Appx. (Publications)</p> <p>2012 - Book “Quantum Vacuum - two types of energy” ISBN 978-5-94424-203-7 2012 - Book “Engineering foundation for a new energy” ISBN 978-5-94424-094-1 2012 - Book “The energy and the physical vacuum” ISBN 5-93567-063-11 2012 - Book “Fuel cell technology”, № 2249886 H1M8 2012 - Book “METHOD FOR DETERMINING OF STRUCTURAL MATERIAL” - № 2320972 C2</p> <p>PROFESSIONAL EXPERIENCE</p> <p>2008 Work on project engineering basis -Present</p> <ul style="list-style-type: none"> - Business Partners in CZ SIMETI s.r.o (consulting) - PHE s.r.o (chef of the R&D department) - Business, consulting and partnerships with a number of European companies. <p>1992 - Ltd. Infodate , Co-founder, - 20 - Co_Director Solar technology Ltd.. Technical Director 1 http://solartechnologies.ru/ - Ltd. PIR. (Industrial Research and Development). Director of Economics. Consulting services in the implementation of engineering projects with firms of Germany MONTECH and solar energy practice in companies of Czech Republic.</p> <p style="text-align: center;">-</p>		

FORMAL EDUCATION

- 2006 – 2009 Rates accounting, management, marketing, business training USA and Sweden
- 1984-1986 Patent Examiner, Institute of patenting.
- 1980 – 1982 Professional retraining diploma English-Russian Translator, German-Russian technical translator, Volgograd State Pedagogical University.
- 1974 – 1979 Electrical Engineer, Volgograd State Technical University (Volgograd, Russia)

PUBLICATIONS

- 20 Book (R “Quantum Vacuum - two types of energy”
12 U) ISBN 978-5-94424-203-7 http://samlib.ru/g/gpebenchenko_j_i/032.shtml
- 20 Book (R “Engineering foundation for a new energy”
08 U) ISBN 978-5-94424-094-1 http://samlib.ru/g/gpebenchenko_j_i/030.shtml
- 20 Book (R “The energy and the physical vacuum”
04 U) ISBN 5-93567-063-1
http://samlib.ru/g/gpebenchenko_j_i/033.shtml

RU Patents

AC № **1182421** **1984** DC voltage level indicator.
https://yandex.ru/patents/doc/SU1182421A1_19850930

AC № **1431073** **1987** Multichannel digital to analog converter.
https://yandex.ru/patents/doc/SU1431073A1_19881015

AC № **1682069** **1988** Photocopy system for gas cutting machine.
https://yandex.ru/patents/doc/SU1682069A1_19911007

RU 2249886 2005 METHOD FOR CONTROLLING OUTPUT CURRENT OF ELECTROCHEMICAL GENERATOR (OPTIONS)
https://patents.s3.yandex.net/RU2249886C2_20050410.pdf

RU 2396540 2008 METHOD FOR DETERMINING DURABILITY OF DESIGN MATERIALS IN AGGRESSIVE MEDIA AND DEVICE FOR ITS IMPLEMENTATION
https://yandex.ru/patents/doc/RU2396540C2_20100810

RU 2 5 2 0 2 7 7 2011 DEVICE FOR Catching Locusts

https://yandex.ru/patents/doc/RU2520277C2_20140620

RU 2584618 2013 METHOD OF PROCESSING METAL PARTS IN ACOUSTIC CONDITIONS RESONANCE EXPOSURE AND DEVICE FOR IMPLEMENTING THE METHOD https://patents.s3.yandex.net/RU2584618C2_20160520.pdf

RU 2651841 2013 A method of processing metal parts under conditions of acoustic resonant exposure to a stream of a mixture of compressed air and gaseous chemicals and a device for its implementation

https://patents.s3.yandex.net/RU2651841C2_20180424.pdf

International patents

EP 0396752A1 2005 INDUSTRIEROBOTER

<https://patents.google.com/patent/EP0396752A1/de>

Wo 2009/157808 A2 2008 METHOD FOR DETERMINING DURABILITY OF DESIGN MATERIALS IN AGGRESSIVE MEDIA AND DEVICE FOR ITS IMPLEMENTATION

<https://patentscope.wipo.int/search/ru/detail.jsf?docId=WO2009157808>

CZ Patent 029534 2016 Autonomous apparatus for trapping blood sucking ticks

<https://isdv.upv.cz/doc/FullFiles/UtilityModels/FullDocuments/FDUM0029/uv029534.pdf>

CZ Patent 307004 2017 The methods for producing thermal energy, the devices for its implementation, and heat generation systems

<http://spisy.upv.cz/Patents/FullDocuments/307/307004.pdf>

International Patent Application for CZ Patent 307004 2017:

CA3017034A1 Canadian Patent Application

CN109074872A China Patent Application

KR20190021195A Sous Korea Patent Application

US2019096535A1 US Patent Application

WO2017152889A1 International application published under the patent cooperation treaty (PCT)

Education	Major 1984-1986	Electronics Engineering Patent Examiner, Institute of patenting.
	1980–1982	Professional retraining diploma English-Russian Translator, German-Russian technical translator, Volgograd State Pedagogical University.
	1974–1979	Electrical Engineer, Volgograd State Technical University (Volgograd, Russia)

Code # : EC40

Available term for consultation	5day		Available for trip to Korea	Yes
Intellectual property Information	Please fill in the patents(filed / registered) information Pat RU 2 396 540, A method for determining the durability of structural materials under the influence of aggressive factors and a device for its implementation			
Category of Research	ME(Material&Equipment), MP(Manufacturing&Production),			
Available field for consulting	<p>Industrial Research and Development LLC, a small enterprise in the Russian Federation, organized for research, development of devices and their production in Volgograd, Russia. I am the director of company. Concurrent Professor and head of department in Common and inorganic Chemistry of Volgograd State Tech Univ.</p> <p>The new device for determining the durability of elastomeric materials (rubbers) under aggressive conditions, in particular ozone is one of the introduced developments of the enterprise.</p> <p>The new testing machine is able to characterize materials according to a number of parameters that can reliably determine the physicochemical characteristics of elastomers, initial fracture parameters, and long-term survivability after receiving primary damage. The industrial sample was exhibited at the international exhibition of testing equipment in Nuremberg (Germany).</p> <div style="text-align: center;">  </div> <p>Currently, the equipment is used in Russia for research purposes and at the enterprises of the tire industry. A number of scientific articles on the results of studies of various elastomeric materials using this equipment in engineering journals have been published.</p> <p>The main goal at this time is to obtain consulting support - the found of industrial and trade partners in the Asian region.</p>			
Education	Doctor of Science	Major	Chemistry of macromolecular compounds	
		Research field	equipment for research, materials and its application (Adhesive, film, rubber, environmental friendliness of use)	
		Dissertation	Surface modification of polymer materials	

Code # : KC01

Available term for consultation	free	Available for trip to Korea	free
Intellectual property Information	Knowhow regarding manufacturing method of Tungsten Carbide Nano-particles		
Category of Research	NT(Nano Technology), ME(Material&Equipment)		
Available field for consulting	<p>1. Research Career (Experience) PhD in Physics and Mathematics, Senior Researcher, Laboratory of Non-Stoichiometric Compounds, Institute of Solid State Chemistry, Ural Branch of the Russian Academy of Sciences.</p> <p>Author and co-author of 71 published works, including one review (“Advances in Chemistry”. 2006) and 38 articles in domestic (“Journal of Experimental and Theoretical physics”, “Solid State Physics”, “Letters in JETP”, ”Reports of the Academy of Sciences”, “Journal of Physical Chemistry”, “Inorganic Materials”, “Journal of Structural Chemistry”, “Materials Science”, “Metallophysics and Latest Technologies” and others) and foreign (“Physical Review”, “Journal of Solid State Chemistry”, “Nanotechnology”, “International Journal of Refractory Metals and Hard Materials”) scientific journals, 7 articles in domestic and foreign collections.</p> <p>2. Consultation fields</p> <ul style="list-style-type: none"> - Phase and Equilibria in the W-C and W-Co-C Systems - Crystals structure of Tungsten Carbides - Nanocrystalline Tungsten Carbide - Production and Properties of WC Nanocrystalline Powders - Hardmetals WC-Co Based on Nanocrystalline Powers of Tungsten Carbide <p>3. References</p> <ul style="list-style-type: none"> - Chairman of the Council of Young Scientists of the Institute of Solid State Chemistry, Ural Branch of the Russian Academy of Sciences (2006-2012). - Member of the Council of Young Scientists and Specialists of the Sverdlovsk Region (from 2009 to the present) - Chairman of the Council of Young Scientists of the Ural Branch of the Russian Academy of Sciences (from 2012 to present). 		
Education	Ph.D	Major	Physics and Mathematics
		Research field	Physical chemistry of solids and materials science. Non-Stoichiometric Compounds
		Dissertation	Structure and properties of tungsten carbides of various dispersion

Code # : KC02

Available term for consultation	Up to 1 month	Available for trip to Korea	Yes
Intellectual property Information	<p>Patent on:</p> <p>-Tissue engineering:</p> <p>1. Stepanova A.O., Karpenko A.A., Popova I.V., Laktionov P.P., Pokushalov E. A., Vlasov V.V. Method of treatment of vascular grafts, produced by electros pinning. Russian Patent No. 2563994, registered on August 31, 2015; Application for patent of RF No. 2014128149 priority from 09.09.2014, published: August, 2015</p> <p>2. Stepanova A.O., Chernonosova V.S., Karpenko A.A., Popova I.V., Laktionov P.P., Pokushalov E.A., Vlasov V.V. Method of low porosity small diameter vascular grafts manufacturing. Russian Patent No. 2572333, registered on 10.01.2016, Application for patent of RF No. 2014143589, priority from 28.10.2014, published: 10.01.2016</p> <p>3. V.S. Chernonosova, T.S. Godovikova, A.O. Stepanova, O.B. Naumenko, V.V. Vlasov, P.P. Laktionov. Biograft for restoration of cartilage defects in joints and photopolymerizable hydrogel for its use. Russian Patent No. 2593011, registered on 06.06.2016, Application for patent of RF No. 2015129217, priority from July 16, 2015, published: 06.2016.</p> <p>4. Stepanova A.O., Kuznetsov K.A., Novikova O.A., Pokushalov E.A., Karpenko A.A., Laktionov P.P. Method of producing a microfibrinous drug releasing material. Russian Patent No. 2 669 344, registered on 10.10.2018, Application for patent of RF No. 2017138348, priority from 02.11.2017, published: October 10, 2018 Bull. Number 28</p> <p>5. Gostev A.A., Rasskazov G.A., Chernonosov V.S., Stepanova A.O., Shutov A.V., Karpenko A.A., Karaskov A.M., Pokushalov E.A., Laktionov P .P. A method of manufacturing of small diameter vascular grafts by electrospinning and a device for its implementation. Russian Patent No. 2 704 314, registered on 28.10.2019, Application for patent of RF No. 2018116273, priority from 28.04.2018, published: 28.10.2019 Bull. Number № 31.</p> <p>6. Laktionov P.P., Chernonosova V.S., Rasskazov G.A., Cherepanova A.V., Karpenko A.A. et all, Detergent-free procedure for decellularization of (xenogenic) biological tissues intended for human surgery. Korean patent application 2019</p> <p>-DNA vaccines (apyrogenic DNA isolation) Laktionov P.P., Skvortsova T.E., Morozkin E.S., Malshakova V.S., Cherepanova A.V., Bondar A.A., Vlasov V.V. Ilyichev A.A., Karpenko L.I., Bazhan S.I., Oreshkova S.F., Nechaeva E.A., Drozdov I.G. Method of pyrogen-free plasmid DNA isolation from bacterial cells. Russian Patent No. 2408729, registered on January 10, 2011, priority date 06.04.2009.</p> <p>-Circulating cell isolation (microfluidics) Laktionov P.P., Vainer O.B., Zaporozhchenko I.A., Pyshnaya I.A., Pyshniy D.V., Dmitrienko E.V., Skvortsova T.E., Morozkin E.S., Loseva E .M., Vandysheva N.V., Romanov S.I. Mmethod for the selective isolation of a population of viable cells from biological fluids. Russian Patent No. 2423698, registered on July 10, 2011, priority date 9.11. 2009.</p> <p>-Cell-free Nucleic acids</p> <p>1. Skvortsova T.E., Morozkin E.S., Laktionov P.P., Rykova E. Yu., Pokushalov E.A., Vlasov V.V. Method for the diagnosis of lung cancer. Russian Patent No. 2 633 693, registered on 10.16.2017, priority date 12.12.2016.</p> <p>2. Lekhnov E.A., Laktionov P.P., Morozkin E.S., Zaporozhchenko I.A., Vlasov V.V. Method for isolating microRNA from biological liquids. Russian Patent No. 2585232, registered on 27.05.2016, priority date 06.05.2015.</p>		

	3. Lekhnov EA, Konoshenko M.Yu., Bryzgunova O.E., Zaporozhchenko IA, Laktionov PP, Method for the isolation of extracellular vesicles from biological fluids . Russian Patent No. 2678988, registered on 05.02.2019, priority date 05.03.2018.
Category of Research (Choose 1 or more)	BT(Biology Technology), ME(Material&Equipment), MP(Manufacturing&Production), Molecular Biological Technologies (Tissue culture, cell-free DNA, RNA, NGS, etc)
Available field for consulting	<p>1. Career Path Graduate from Novosibirsk state university at 1983, as Biochemist and Molecular Biologist, young scientist in the Institute of Organic chemistry SB RAS (NIOCH SD RAS), Institute of Biochemistry SB RAS (NIBOCH SD RAS), Institute of Immunology SB RAMS (IIM SB RAMN), starting from 1994 in the current institute of Chemical Biology and Fundamental Medicine SB RAS (ICBFM SB RAS). Starting from 2000 leader of the Group of Cellular Biology, starting from 2013 leader of the laboratory of Molecular Medicine of ICBFM SB RAS. Starting from 2014 leader of the Laboratory of Biomedical Technologies of National Medical Research Center named academician Meshalkin, Ministry of Health of the Russian Federation. Shareholder of Biosilica Ltd (production of DNA and RNA isolation KITs, since 2006) and TE&GRAFTS Ltd. (second shareholder is ICBFM SB RAS, tissue engineering of cardiovascular devices, since 2019) More than 130 publications in PubMed, h-index 23 (Scopus), supervisor of many grants from RFBR, RSF, Ministry of Health of Russian Federation, etc.</p> <p>2. Experience. 1983-1988, Scientist in NIOCh SB RAS, NIBOCH SB RAS. Production of monoclonal antibodies against no less than 10 antigens, development of a rapid method for localization of antigenic determinants on proteins, study of proteins antigenic structure and functional topography. Preparation of Au, Fe, Ag colloids. Preparation of the complexes of the colloids with proteins, protein localization in cells, TEM-immunogold protein localization. 1989-1994. Director of Bios Ltd. Development of technologies for production of immunochemicals (immunoglobulins, monoclonal antibodies, affinity purified polyclonal antibodies, proteins). Development of antibodies in mice, rats, rabbits, goats, sheeps. Production of poly- and monoclonal antibodies against peptides, haptens, conjugates preparation, design of immunoassays. Large scale production of fetal calf serum, immunoglobulins, affinity purified antibodies and their fragments, conjugates. Production of poly- and monoclonal antibodies by order, purification of peptides and proteins by order. Designing and production of laboratory equipment. 1994-2020 Basic Biochemistry and Molecular biology including isolation of biopolymers (proteins, DNA, RNA, microRNA) and microvesicles for general study as well as for diagnostic and DNA vaccines. Study of biopolymer interactions, including affinity modification. Development of cell-free DNA and RNA based cancer diagnostics. Cell culture, primary and transformed cells, immune histochemical and mRNA based cell characterization, tests for toxicity (ISO) and biocompatibility, investigation of cell interaction with different materials including deep study of cellular phenotype by NGS sequencing. Tissue engineering of hyaline cartilage, vascular grafts, covered metal stents and cardiac valves. Basic study of the mechanical and chemical properties of the materials (XPS, IR, SAXS, SEM, strain-stress diagram, etc). Production of drug-releasing materials, study of drug release from 3D matrices. Study of biomaterials, as well as bioprotheses in vivo. Histology, immunohistological studies, blood biochemistry, etc. - Material selection and novel materials development (production of biomaterials from blends of natural and synthetic polymers by electrospinning) - Process customization for new device development, biochemical processes (non-pyrogenic biopolymer production), preparation of the technical regulations - Strategic business planning and Project management preparation of applications for national and international scientific and production support programs. - Technology Transfer activity, preparation of Patents, Know How etc. - Expert of Russian Foundation of Basic Research, Russian Science Foundation, etc.</p>

	<ul style="list-style-type: none"> - Supervisor of more than 10 PhD theses (3 in tissue engineering) <p>3. Expected effect</p> <ul style="list-style-type: none"> - Mentee(Applicants) can get the methodologies how they can logically prepare proposal for the government grant program - Improve product quality and manufacturing yield in field of tissue engineering and biochemistry/molecular and cell biology - reduce loss and cost saving thru process optimization - Tech. driven discussion for advanced device development (necessary for production of small diameter vascular grafts) <p>4. Appx. List of publications for last 2 years.</p>		
Education	Ph.D	Major	Biochemistry
		Research field	Nucleic acids and protein biochemistry, oligonucleotide derivatives, oligonucleotide - protein complexes, development of new DNA related techniques, DNA to protein interactions
		Dissertation	Investigation of interactions of the oligonucleotides and DNA with cells and proteins of body fluids (1997)
	MS	Major	Biochemistry, Monoclonal antibodies technology
		Research field	Cell culture and hybridoma technology, immunology and immunochemistry
		Dissertation	Development of the methods of screening and hybridization of lymphoid cells for production of monoclonal antibodies against human myoglobin - myocardial infarction marker (1983)
	BS	Major	Molecular Biology and Biochemistry

*If necessary, it is available to add next pages.

Appendix 1.

Manuscripts 2019:

1. Stepanova AO, Laktionov PP, Cherepanova AV, Chernonosova VS, Shevelev GY, Zaporozhchenko IA, Karaskov AM, Laktionov PP. **General Study and Gene Expression Profiling of Endotheliocytes Cultivated on Electrospun Materials.** Materials (Basel). 2019 Dec 6;12(24). pii: E4082. doi: 10.3390/ma12244082.
2. Gostev AA, Chernonosova VS, Murashov IS, Sergeevichev DS, Korobeinikov AA, Karaskov AM, Karpenko A A, Laktionov PP. **Electrospun polyurethane-based vascular grafts: physicochemical properties and functioning in vivo.** Biomed Mater. 2019 Dec 23;15(1):015010. doi: 10.1088/1748-605X/ab550c.
3. Chernonosova, V.S., Gostev, A.A., Chesalov, Y.A., Karpenko A.A., Karaskov, A.M., Laktionov, P.P. **Study of hemocompatibility and endothelial cell interaction of tecoflex-based electrospun vascular grafts.** International Journal of Polymeric Materials and Polymeric Biomaterials. 2019, 68(1-3), c. 34-43.
4. Kuznetsov K.A., Stepanova A.O., Kuznetsov N.A., Chernonosova V.S., Kharkova M.V., Romanova I.V., Karpenko A.A., Laktionov P.P. **Diclofenac release form polycaprolactone 3D matrices produced by electrospinning: influence of fiber structure and composition of the surrounding medium.** International Journal of Polymeric Materials and Polymeric Biomaterials 68(1-3), c. 27-33. 2019 DOI: 10.1080/00914037.2018.1525720
5. Novikova OA, Nazarkina ZK, Cherepanova AV, Laktionov PP, Chelobanov BP, Murashov IS, Deev RV, Pokushalov EA, Karpenko AA, Laktionov PP. **Isolation, culturing and gene expression profiling of inner mass cells from stable and vulnerable carotid atherosclerotic plaques.** PLoS One. 2019 Jun 26;14(6):e0218892. doi: 10.1371/journal.pone.0218892. PMID: 31242269
6. Novikova O., Cherepanova A., Nazarkina Z., Laktionov P., Laktionov P. **Isolation And Culture Of Carotid Atherosclerotic Plaque Inner Mass Cells.** Atherosclerosis, Volume 287, August 2019, Pages e269-e270
7. Cheban A.V., Ignatenko P.V., Rabtsun A.A., Saaya Sh. B., Gostev A.A., Bugurov S.V., Laktionov P.P., Popova I.V., Osipova O . S., Karpenko A. A. **Modern approaches to revascularization of femoral-popliteal lesions. Achievements and Prospects.** Cardiovascular therapy and prevention. 2019 in press

8. Alla M. Zaydman, Elena L. Strokova, Alena O. Stepanova, Pavel P. Laktionov, Alexander I. Shevchenko, Vladimir M. Subbotin. **A New Look at Causal Factors of Idiopathic Scoliosis: Altered Expression of Genes Controlling Chondroitin Sulfate Sulfation and Corresponding Changes in Protein Synthesis in Vertebral Body Growth Plates.** *Int. J. Med. Sci.* 2019; 16(2): 221-230. doi: 10.7150/ijms.29312;
9. Strokova, E.L., Zaydman, A.M., Stepanova, A.O., Laktionov, P.P. **Analysis of Gene Expression in Chondroblasts of Vertebral Body Growth Plates in Patients with Grade III–IV Idiopathic Scoliosis.** *Cell and Tissue Biology* 13(2), c. 120-129 2019
10. Novikova O.A., Laktionov P.P., Karpenko A.A. **The roles of mechanotransduction, vascular wall cells, and blood cells in atheroma induction.** *Vascular.* 2019 Feb;27(1):98-109. doi: 10.1177/1708538118796063. Epub 2018 Aug 29.
11. Tamkovich S.N., Yunusova N.V., Tugutova E., Somov A.K., Proskura K.V., Kolomiets L.A., Stakheeva M.N., Grigor'eva A.E., Laktionov P.P., Kondakova I.V. **Protease Cargo in Circulating Exosomes of Breast Cancer and Ovarian Cancer Patients.** *Asian Pac J Cancer Prev.* 2019 Jan 25;20(1):255-262.
12. S.Tamkovich, O. Tutanov, A. Efimenko, A. Grigor'eva, E. Ryabchikova, N. Kirushina, V. Vlassov, V. Tkachuk, P. Laktionov. **Blood Circulating Exosomes Contain Distinguishable Fractions of Free and Cell-Surface-Associated Vesicles.** *Curr Mol Med.* 2019 Mar 14. doi: 10.2174/1566524019666190314120532.
13. O.E. Bryzgunova, I.A. Zaporozhchenko, E.A. Lekchnov, E.V. Amelina, M.Yu. Konoshenko, S.V. Yarmoschuk, O.A. Pashkovskaya, A.M. Gorizkii, S.V. Pak, E.Yu. Rykova, P.P. Laktionov **Data analysis algorithm for the development of extracellular miRNA-based diagnostic systems for prostate cancer.** *PLoS One.* 2019 Apr 10;14(4):e0215003. doi: 10.1371/journal.pone.0215003. eCollection 2019.
14. Svetlana N. Tamkovich, Pavel P. Laktionov. **Cell-surface-bound circulating DNA in the blood: biology and clinical application.** *IUBMB LIFE, 2019. DOI 10.1002/iub.2070. p1-10*
15. Cherepanova A.V., Akisheva D., Popova T.V., Chelobanov B.P., Chesalov Yu.A., Godovikova T.S., Karpenko A.A., Laktionov P.P. **Conjugates of RGD peptidide with albumin for the endothelization of electrospinning matrices.** *Bioorganic chemistry (Rus).* 2019, 45 (6) in press

Manuscripts 2018:

1. Gostev, A. A., Laktionov, P. P., & Karpenko, A. A. (2018). **Modern polyurethanes in cardiovascular surgery.** *Angiologiya i sosudistaya khirurgiya. Angiology and vascular surgery*, (1), 29.
2. Kuznetsov KA, Khar'kova MV, Karpenko AA, Laktionov PP. **Vascular stents: Approaches used to increase their clinical efficacy.** *Angiol Sosud Khir.* 2018;24(2):69-79. Russian.
3. Chernonosova VS, Gostev AA, Gao Y, Chesalov YA, Shutov AV, Pokushalov EA, Karpenko AA, Laktionov PP. **Mechanical Properties and Biological Behavior of 3D Matrices Produced by Electrospinning from Protein-Enriched Polyurethane.** *Biomed Res Int.* 2018 Jun 26; 2018:1380606. doi: 10.1155/2018/1380606.
4. A. A. Gostev, A. A. Karpenko, P. P. Laktionov **Polyurethanes in cardiovascular prosthetics.** *Polymer Bulletin.* September 2018, Volume 75, Issue 9, pp 4311–4325 DOI: 10.1007/s00289-017-2266-x
5. Novikova OA, Laktionov PP, Karpenko AA. **Mechanisms Underlying Atheroma Induction: The Roles of Mechanotransduction, Vascular Wall Cells, and Blood Cells.** *Ann Vasc Surg.* 2018 Aug 17. pii: S0890-5096(18)30479-5. doi: 10.1016/j.avsg.2018.04.030.
6. I.I. Tagiltsev, P.P. Laktionov, A.V. Shutov. **Simulation of fiber-reinforced viscoelastic structures subjected to finite strains: multiplicative approach.** *Meccanica.* 2018, Volume 53, Issue 15, pp 3779–3794 <https://doi.org/10.1007/s11012-018-0909>
7. K.A. Kuznetsov, A.O. Stepanova, R.I. Kvon, T.E. L. Douglas, N.A. Kuznetsov, V.S. Chernonosova, I.A. Zaporozhchenko, M.V. Kharkova, I.V. Romanova, A.A. Karpenko and P.P. Laktionov. **Electrospun Produced 3D Matrices for Covering of Vascular Stents: Paclitaxel Release Depending on Fiber Structure and Composition of the External Environment.** *Materials* 2018, 11(11), 2176; doi:10.3390/ma11112176
8. Cheban A.V., Karpenko A.A., Popova I.V., Saaya Sh.B., Gostev A.A., Rabtsun A.A., Novikova O.A., Laktionov P.P. **Modern endovascular methods of treatment of patients with shin arteries damage: background and prospects.** *Cardiovascular Therapy and Prevention (Russian Federation)* 17(4):74-80 DOI: 10.15829/1728-8800-2018-4-74-80
7. Ivan A. Zaporozhchenko, Evgeny S. Morozkin, Anastasia A. Ponomaryova, Elena Y. Rykova, Nadezhda V. Cherdyntseva, Aleksandr A. Zheravin, Oksana A. Pashkovskaya, Evgeny A. Pokushalov, Valentin V. Vlassov, Pavel P. Laktionov. **Profiling of 179 miRNA Expression in Blood Plasma of Lung Cancer Patients and Cancer-Free Individuals.** *Scientific Reports* 20.02. 2018 г.

8. Elena Y. Rykova, Anastasia A. Ponomaryova, Ivan A. Zaporozhchenko, Valentin V. Vlassov, Nadezhda V. Cherdyntseva, Pavel P. Laktionov. **Circulating DNA-based lung cancer diagnostics and follow-up: looking for epigenetic markers.** *Transl Cancer Res* 2018; 7 (Suppl 2):S153-S170 doi: 10.21037/tcr.2018.02.08
9. O.E. Bryzgunova, M.Yu. Konoshenko, P.P. Laktionov. **microRNA guided gene expression in prostate cancer: literature and database overview.** *Journal of Gene Medicine DOI:10.1002/jgm.3016*
10. E.A. Lekhnov, E.V. Amelina, O.E. Bryzgunova, I.A. Zaporozhchenko, I.D. Osipov, M.Yu. Konoshenko, S.V. Yarmoschuk, I.S. Murashev, O.A. Pashkovskaya, A.M. Gorizkii, A.A. Zheravin, P.P. Laktionov. **Searching for the novel specific predictors of prostate cancer in urine: the analysis of 84 miRNA expression.** *Int. J. Mol. Sci.* 2018, 19, 4088; doi:10.3390/ijms19124088
11. Chernonosova V.S., Gostev A.A., Kharkova M.V., Karpenko A.A., Laktionov P.P. **3D matrices made of polytrimethyl carbonate and its copolymers: study of physicochemical and biological properties.** *Genes & Cells (Russia)*: Volume 13, No. 3, 2018
12. Zaporozhchenko IA, Ponomaryova AA, Rykova EY, Laktionov PP. **The potential of circulating cell-free RNA as a cancer biomarker: challenges and opportunities.** *Expert Rev Mol Diagn.* 2018 Feb;18(2):133-145. doi: 10.1080/14737159.2018.1425143. Epub 2018 Jan 15. Review.
14. Maria Yu. Konoshenko, Evgeny A. Lekhnov, Pavel P. Laktionov. **Isolation of extracellular vesicles: General methodologies and modern trends.** *BioMed Research International*, vol. 2018, Article ID 8545347, 27 pages, 2018. doi:10.1155/2018/8545347.
15. Ivan A. Zaporozhchenko, Evgeny S. Morozkin, Anastasia A. Ponomaryova, Elena Y. Rykova, Nadezhda V. Cherdyntseva, Aleksandr A. Zheravin, Oksana A. Pashkovskaya, Evgeny A. Pokushalov, Valentin V. Vlassov, Pavel P. Laktionov. **Profiling of 179 miRNA Expression in Blood Plasma of Lung Cancer Patients and Cancer-Free Individuals.** *Scientific Reports* 20.02. 2018 r.
16. Zh. K. Nazarkina, A. Zajakina, and P. P. Laktionov. **Maturation and Antigen Loading Protocols Influence Activity of Anticancer Dendritic Cells.** *Molecular Biology (Russia)*, 2018, Vol. 52, No. 2, pp. 222–231. ISSN 0026-8933.
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19. Zaporozhchenko I.A., Bryzgunova O.E., Lekhnov E.A., Osipov I.D., Zaripov M.M., Yurchenko Yu.B., Yarmoschuk S.V., Pashkovskaya O.A., Rykova E .Yu., Zheravin AA, Laktionov P.P. **Analysis of miRNA representation in urinary microvesicles and acellular urine in prostate diseases.** *Biomedical Chemistry*, 2018 Volume 64, Iss. 1, p. 38-45.
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21. Zaydman AM, Strokova EL, Kiseleva EV, Suldina LA, Strunov AA, Shevchenko AI, Laktionov PP, Subbotin VM. **A New Look at Etiological Factors of Idiopathic Scoliosis: Neural Crest Cells.** *Int J Med Sci.* 2018 Mar 6;15(5):436-446. doi: 10.7150/ijms.22894. eCollection 2018.

Code # : KC03

Available term for consultation	free	Available for trip to Korea	Yes
Intellectual property Information	<p>9 international patents, 3 domestic patents registered in Russia</p> <ul style="list-style-type: none"> ● Gas laser WO US CN DE RU US8345723B2 Vladimir Vasilyevich Atezhev Optosystems Ltd. PIC GPI RAS Priority 2009-06-19 • Filed 2010-05-27 • Granted 2013-01-01 • Published 2013-01-01 ● Офтальмохирургическая лазерная система WO RU WO2015178803A1 Игорь ГУРЕВИЧ ОБЩЕСТВО С ОГРАНИЧЕННОЙ ОТВЕТСТВЕННОСТЬЮ "ОПТОСИСТЕМЫ" (ООО "Оптосистемы") Priority 2014-05-22 • Filed 2015-05-05 • Published 2015-11-26 ● Способ формирования оболочки волноводной структуры в прозрачном объемном ... WO RU WO2016105245A1 Михаил Андреевич БУХАРИН ОБЩЕСТВО С ОГРАНИЧЕННОЙ ОТВЕТСТВЕННОСТЬЮ "ОПТОСИСТЕМЫ" (ООО "Оптосистемы") Priority 2014-12-24 • Filed 2015-12-08 • Published 2016-06-30 ● Способ и устройство формирования прецизионных отверстий в оптически прозрачной ... WO CN RU WO2015069143A1 Сергей Каренович ВАРТАПЕТОВ ОБЩЕСТВО С ОГРАНИЧЕННОЙ ОТВЕТСТВЕННОСТЬЮ "ОПТОСИСТЕМЫ" (ООО "Оптосистемы") Priority 2013-11-07 • Filed 2014-10-07 • Published 2015-05-14 ● Ophthalmic surgical femtosecond laser system WO CN DE RU CN202682148U 谢尔盖·卡列诺维奇·瓦尔塔佩托夫 光学系统有限责任公司 Priority 2010-03-10 • Filed 2011-03-02 • Granted 2013-01-23 • Published 2013-01-23 ● Laser scanning device (laser scanning system) with a resonance scanner WO DE RU DE212012000262U1 Optosystems Ltd. PIC GPI RAS Priority 2012-03-26 • Filed 2012-12-14 • Published 2014-12-02 ● Gas-discharge laser WO US CN DE RU US8005126B2 Vladimir Vasilyevich Atezhev Optosystems Ltd. Priority 2007-03-13 • Filed 2008-02-11 • Granted 2011-08-23 • Published 2011-08-23 ● Module of a polymer composite saturation absorber with single-walled carbon ... WO DE RU DE212012000233U1 Optosystems Ltd. Priority 2011-12-29 • Filed 2012-12-14 • Published 2014-08-18 		

	<ul style="list-style-type: none"> ● All-fiber laser with an ultrashort pulse width WO DE RU DE212012000238U1 Optosystems Ltd. Priority 2011-12-29 • Filed 2012-12-14 • Published 2014-08-18 ● CVD Reactor RU 158 690 U1 Priority 21.09.2015 ● CVD Reactor RU2 299 929 C2 Priority 11.08.2005 ● CVD Reactor RU 2 393 270 C1 Priority 03.12.2008
Category of Research	<ul style="list-style-type: none"> ● NT (Nano Technology) ● ME (Material & Equipment), ● MP (Manufacturing & Production)
Available field for consulting	<p>RESEARCH SKILLS and CURRENT RESEARCH INTERESTS:</p> <ul style="list-style-type: none"> ● Gas discharge Excimer laser ● Laser systems for micromachining ● Lidar systems for ozone and pollutants measurements ● Pulse solid state lasers ● Diode pump solid state lasers ● Medical lasers (refractive surgery, cardiology, dermatology) ● Microwave plasma CVD systems and technologies <p>1. Career Path (Experience)</p> <ul style="list-style-type: none"> ● 1977~1980: the chief of research group ● 1980~1990: the chief of laser subdivision of Physics Instrumentation Center Physics Instrumentation, Center of Prokhorov General Physics Institute (PIC GRI RAS) ● 1990~2000: deputy director of Physics Instrumentation Center (PIC GRI RAS) ● 2001~2016: director of Physics Instrumentation Center Physics Instrumentation Center of Prokhorov, General Physics Institute ● 2000~present: Founder of Optosystems Ltd. (www.optosystems.ru). Optosystems Ltd. is the leading manufacturer of lasers for medicine, science and technology in Russia. The product line includes excimer lasers, CO₂ and N₂ lasers, DPSS lasers, medical laser systems, lidars, high voltage power supplies and magnetometers. <p>2. Consultation fields</p> <ul style="list-style-type: none"> ● Consulting on development of laser source and industrial laser equipment using it ● Joint development of laser processing equipment made of metal, polymer and ceramic <p>3. Certification</p> <ul style="list-style-type: none"> ● Russian Academy of Science member <p>4. PROFESSIONAL MEMBERSHIPS:</p> <ul style="list-style-type: none"> ● Expert of Laser Association of Russia

- Expert of «Russian Corporation of Nanotechnologies»
- Member of Research Committee of General Physics Institute

5. Expected effect

- Mentees (applicants) can get a methodology to logically propose a government grant program.
- Support development of ultra-precision laser processing equipment for semiconductor and display production
- Process optimization to reduce losses and costs
- Leading discussion on early stages of advanced device development (device scale, form factor, configuration, BOM / process / production)

Education	Ph.D.	Major	Physics (General Physics Institute)
		Research field	Gas discharge lasers (excimer, CO ₂), solid state lasers.
		Dissertation	Gas discharge laser with magnetic switch generator (*Advisor – Academician A. Prokhorov)
	MS	Major	Physics (Moscow Physical Technical Physical Institute)
		Research field	Gas discharge lasers (excimer, CO ₂), solid state lasers
		Dissertation	High-power solid-state laser with picosecond generator and the problem of interaction of a powerful picosecond laser pulses with solid and gas targets. High power gas discharge CO ₂ and excimer lasers
	BS	Major	Physics

Code # : KC04

Available term for consultation	free	Available for trip to Korea	Yes
Intellectual property Information	-		
Category of Research	ME(Material&Equipment), <u>ETC(Material Science)</u>		
Available field for consulting	<p>1. Career Path 1975-1978 – Head of Laboratory of Separation of Substances Mixtures at the Nizhny Novgorod State University 1978-Current – Head of Laboratory of Chemistry of High-Purity Non-Oxide Glasses at the Institute of Chemistry of High-Purity Substances of Russian Academy of Sciences (ICHPS RAS) 1988-1998 – Deputy Director of ICHPS RAS 1998-2017 – Director of ICHPS RAS 2018-Current – Scientific Supervisor of ICHPS RAS</p> <p>2. Consultation fields - Chemistry and technology of high-purity substances and materials; -Volatile inorganic hydrides (SiH₄, H₂S, H₂Se) -High Purity Elements (S, Se, Te, As, Ge, Si) -High transparent chalcogenide glasses for the middle IR-range optics -Chalcogenide glass fiber with low optical losses in 2-12 micron wavelength range - Strategic business planning and Project management methodologies(Planning of Government Project proposal)</p> <p>4. Relate Networking - Academician Council Chairman of RAS “Chemistry of High-Purity Substances” - Member of Advisory Board of International Symposium of Non-Oxide and New Glasses</p> <p>5. Expected effect - Mentee(Applicants) can get the methodologies how they can logically prepare proposal for the government grant program - Improve product quality and manufacturing yield in IR optical materials production - reduce loss and cost saving through process optimization - right material selection for IR-optical systems - Tech. driven discussion for advanced device development on early stage</p> <p>6. Appx. 2008-Current – Full Member of Russian Academy of Sciences 1998 - Laureate of the state prize of the Russian Federation</p>		
Education	Doctor Degree	Major	Chemistry of High-Purity Substances
		Research field	Deep Purification methods and technologies
		Dissertation	Preparation of High-Purity Chalcogens
	Ph.D	Major	Chemistry of High-Purity Substances
		Research field	Deep Purification methods and technologies
		Dissertation	Sulfur Ultra-Purification from Melt by Counter Current Crystallization
	MS	Major	Chemistry of High-Purity Substances
		Research field	High purity elements (S,Se). Deep Purification methods and technologies
		Dissertation	Mass-Spectrometry of cyclic molecules of sulfur and selenium compounds
BS	Major	Inorganic Chemistry	

Code # : KC05

Available term for consultation	Any time (by agreement)	Available for trip to Korea	Yes
Intellectual property Information	Alla Kornilova is the author (coauthor) of more than 30 patents (medicine, nuclear physics, biophysics, technology for generating short-wave radiation, etc.)		
Category of Research (Choose 1 or more)	BT(Biology Technology), ET(Environment Technology), LENR (Nuclear Reactions at Low energy)		
Available field for consulting	<p>Please fill in detail information of your available consultation fields, knowledge and experience. X-Ray and gamma-Ray generation, Nuclear reactions in biological systems. Physical properties and “memory” of water</p> <p>Career Path(Experience) - 2018 - Director of Center for Expert Technology at Lomonosow Moscow State University - (2014 ~ Current) - Senior Researcher in Solid State Dept at Physical Faculty of Lomonosov Moscow State University - (1975~ 2014) - Researcher in Solid State Dept at Physical Faculty of Lomonosov Moscow State University - (1970-1974) - Postgraduate studies at physical Faculty of Lomonosov Moscow State University</p> <p>Relate Networking - Academician of the Russian Academy of Natural Science</p> <p>Appx. Creative books (in English):</p> <p>Vysotskii V.I., Kornilova A.A. MRET water science. Physics-chemical part. Book, Japan, Publ. house “Sakumei-sha”, 2017, 100 p. (In Japanese). Vysotskii V.I., Kornilova A.A. MRET water science. Biology part. Book, Japan, Publ. house “Sakumei-sha”, 2017, 114 p. (In Japanese). Vysotskii V.I., Kornilova A.A. MOSSBAUER SPECTROSCOPY: APPLICATIONS IN CHEMISTRY, BIOLOGY, AND NANOTECHNOLOGY, Editors: Virender K. Sharma, Gostar Klingelhofer, and Tetsuaki Nishida, (Tentative) Publication Date: April 2013, Projected Page Count: 450 pages, John Wiley and Sons, Inc. Book ISBN: 9781118057247; Chapter 14, Controlled spontaneous decay of Mossbauer nuclei (theory and experiments), p. 292-315. Vysotskii V.I., Kornilova A.A., Smirnov I.V. Applied biophysics of activated water (the physical properties, biological effects and medical applications of MRET activated water), World Scientific Publishing, 2009, 317 p. Vysotskii V.I., Kornilova A.A. Nuclear transmutation of stable and radioactive isotopes in biological systems, Pentagon Press, India, 2009, 187 p. Vysotskii V.I., Smirnov I.V., Kornilova A.A. Introduction to the Biophysics of Activated Water, Universal Publishers, Boca Raton, Florida, USA, 2005, 160 p. Vysotskii V.I., Kornilova A.A. Nuclear Fusion and transmutation of isotopes in biological systems, Moscow, MIR Publishing House, Russia, 2003, 302 p.</p>		
Education (Physical Faculty of Lomonosov Moscow State University)	Ph.D	Major	Nuclear and Solids Physics
		Research field	Mossbauer effect in physical and biological systems
		Dissertation	Investigation of the Mossbauer effect in single crystals under external physical influences
	MS	Major	Physics
		Research field	Solid state physics
		Dissertation	-
	BS	Major	Physics

Code # : KC06

Available term for consultation	all options are the subject to discuss _____	Available for trip to Korea	Yes
Intellectual property Information	-		
Category of Research (Choose 1 or more)	IT (Information Technology)		
Available field for consulting	<p>1. Career Path / Experience</p> <p>2012 - Current</p> <ul style="list-style-type: none"> - ASD technologies (Russia) CEO - Clouddike Inc (USA) COO - IT-products general management - business development and B2B sales <p>2010 - 2012</p> <ul style="list-style-type: none"> - LG Electronics - Product and group lead. - Development of LG cloud products <p>2008 - 2010</p> <ul style="list-style-type: none"> - Rambler (Russia) - Search engine and other IT-products head <p>Before 2008</p> <ul style="list-style-type: none"> - Rambler (Russia) - Head of various internet-products in a field of online advertisement <p>2. Consultation fields</p> <ul style="list-style-type: none"> - Product metrics / KPI analysis and implementation - IT/Internet product design and development - Private/Public cloud strategy development and implementation - Teams and professionals' assessment <p>3. Relate Networking</p> <ul style="list-style-type: none"> - Member of Russian Software Developers Organization 		
Education	MS	Major	Software development / Software and hardware complexes
		Research field	Plain text / not structured data search systems / plagiarism search (science and fiction texts)
	BS	Major	Software development / Software and hardware complexes, engineer

Code # : KC07

Available term for consultation	Free_	Available for trip to Korea	Yes
Intellectual property Information	<p>Russian Patent: Л.К. Шубина, Т.Н. Макарьева, В.А. Стоник, Н. Э. Нифантьев, Д.В. Яшунский, Джеонг Сеунг Хан (KR), Сонг Ин-Сунг (KR), Ким Хиунг Ку (KR), Ким На Ри (KR), Хан Джин (KR) «Кардиопротекторная фармацевтическая субстанция и способ ее получения», RU 2629772 (приоритет 31-05-2016; дата публикации 04-09-2017)</p> <p>Korean Patent: L.K. Shubina, T.N. Makarieva, V.A. Stonik, N.E. Nifantiev, D.V. Yashunsky, S.H. Jeong, I.-S. Song, H.K. Kim, N. Kim, J. Han, "Neopetrosides A and B, and Synthesis thereof" Korean patent 10-1788589 (приоритет 31-05-2016; дата регистрации 16-10-2017) (Korean patent application 10-2016-0067450 (접수번호 1-1-2016-0524960-07; 31-05-2016)</p> <p>PCT/KR2017/005645 "NEOPETROSIDES A AND B, AND SYNTHESIS METHOD THEREOF" L.K. Shubina, T.N. Makarieva, V.A. Stonik, N.E. Nifantiev, D.V. Yashunsky, S.H. Jeong, I.-S. Song, H.K. Kim, N. Kim, J. Han</p>		
Category of Research (Choose 1 or more)	BT(Biology Technology),, <u>ETC(Pharmacy)</u>		
Available field for consulting	<p>Nikolay E. Nifantiev (born: October 12, 1958 in Krasnoyarsk, USSR) studied chemistry in M.V. Lomonosov Moscow State University and then received his Ph.D. in 1984 in academician N.K. Kochetkov's laboratory in N.D. Zelinsky Institute of organic chemistry, Russian Academy of Sciences. After certain years in the same lab and training outside the country (Germany, Denmark) in 1994 he established new research unit at N.D. Zelinsky Institute - the Laboratory of glycoconjugate chemistry. In 1995 he also defended his Dr.Sci. thesis and in 2006 he got the Professorship.</p> <p>Professor Nifantiev has published 400+ papers mainly within the area of the synthesis, NMR, and conformational studies of oligo- and polysaccharides. Recent interests have focused on the development of the computer-assisted method of structural analysis of regular polysaccharides, elaboration of new materials of practical importance from natural polysaccharides (chitosan, fucoidans, fucosylated chondroitin sulfates, arabinogalactan, cyclooligosaccharides), the synthesis of complex oligosaccharides and neoglycoconjugates of medical interest, study of the topology of carbohydrate-protein binding and computer design of the inhibitors of carbohydrate binding proteins, development of glycoconjugate vaccines, diagnostic test-kits and new drugs. He is the co-inventor in many national and foreign patents and recent patent applications.</p> <p>Professor Nifantiev was elected to be the Corresponding Member of the Russian Academy of Sciences (from 2011) and Titular Member of the International Union of Pure and Applied Chemistry (IUPAC) where he also serves as the President (2020-2021), IUPAC Organic and biomolecular chemistry Division and Chair of Subcommittee on Organic Synthesis (2016-2020). He is the representative of Russia in the International Council for Science; member of Russian Chemical and Biochemical Societies. Member of the Editorial Boards of the <i>Journal of Carbohydrate Chemistry</i> (from 1999), <i>Russian Journal of Bioorganic Chemistry</i> (from 2001), <i>Russian Chemical Bulletin</i> (from 2009), Herald of the Russian Academy of Sciences (from 2018), <i>Pure and Applied Chemistry</i> (from 2020). He is the Chairman of Scientific Council on Organic Chemistry at the N.D. Zelinsky Institute, deputy-Chair of Scientific Council on Organic Chemistry, Russian Academy of Sciences. He is also the member of Scientific Council on Chemistry, Russian Foundation for Basic Research and recipient of Russian State prize for junior researchers (1988) and M.M. Shemiakin prize of Russian Academy of Sciences (2012).</p>		

Professor Nifantiev has a large experience in commercialization of his biomedical inventions. In particular, in 2000s he leded pharmaceutical plant in Scotland (part of Biolitec AG) that resulted the development of EMA-approved Foscan-dl cancer drug which is now used in several EU countries, he is co-invented synthetic anti-staphylococcal vaccine which is under Phase I/II clinical trials (FDA, IND #: 17079). Most recently, he developed novel principles for constructing fungal EIA diagnostic kits and the first one product of this group "GalMAg" (detects Aspergillus galactomannan to diagnose invasive aspergillosis) is already approved and used in several countries.

In 2013 Professor Nifantiev has started his intensive collaboration with Professor Jin Han (National Research Laboratory for Mitochondrial Signaling; Professor and Chair, Department of Physiology, College of Medicine, Inje University; Director, Cardiovascular and Metabolic Disease Center, Inje University; 633-165, Gaegeum-Dong, Busanjin-Gu, Busan 614-735, KOREA) which resulted in invention of new class of therapeutic agents, namely Neopetrosides, which exhibit anti-cancer and cardioprotecting properties. These promising compounds are protected by several patents and described in Q1 journal – Journal of Natural Products (published by the American Chemical Society).

To plan next collaboration Professors Nifantiev and Han and their colleagues visited each other several time for intensive discussions and have jointly selected a number of marine natural products for the development of first in class drugs. Present grant will accelerate bilateral developments in this direction.

Education	Ph.D	Major	Bioorganic chemistry
		Research field	Glycochemistry and glycobiology
		Dissertation	Glycosylation by 1,2-O-(1-cyanoethylidene)-derivatives in di- and polysaccharide syntheses (1984)
	MS	Major	Chemistry
		Research field	Synthetic organic chemistry
		Dissertation	Synthesis of bidentate phosphorous organic compounds
	BS	Major	Chemistry

Code # : KC08

Available term for consultation	5day	Available for trip to Korea	Yes
Intellectual property Information	Patent RU 2130762 "Ophthalmological device" date 10.12.1997 Patent RU 2157158 "Ophthalmological device" date 28.12.1998 Patent RU 2477110 "Laser ophthalmological multifunctional system" date 04.02.2011		
Category of Research (Choose 1 or more)	BT(Biology Technology), <u>ETC(Lasers, Biomedical optics and technology)</u>		
Available field for consulting	<p>1. Career</p> <ul style="list-style-type: none"> - (2010-Current) - vice-director Nela Ltd., RF (production and sales solid state lasers, optical components, instruments, fiber optics; R&D devices for medical application includes: 1440 and 1540nm laser for cataract extraction, LED devices for photo- and photodynamic therapy and others) - (2001-2010) - head of laser department Nela Ltd, RF - (1997-2001) - project manager Nela Ltd., RF - (1995-1997) - researcher Nela Ltd., RF - (2010-2015) - director of Advanced research DPI Inc, USA - (2001-2010) - consult of Palomar Medical Inc., USA - (2018-Current) - professor of ITMO University, Head of Laser Technologies program - (2013-2018) - professor of ITMO University, RF - (2002-2013) - associate-professor of ITMO University, RF - (1993–2002) - Ph.D., senior researcher of ITMO, RF - (1990–1993) – post-graduate student of ITMO, RF <p>2. Consultation fields</p> <ul style="list-style-type: none"> - R&D in lasers, biomedical optics, physics of interaction of light with materials <p>3. Certification</p> <ul style="list-style-type: none"> - Docent (ДЦ№025727, 17 February 2010) - Professor (ЗПРН№000652, 03 June 2016) <p>4. Relate Networking</p> <ul style="list-style-type: none"> - Member of SPIE (Society of Photo-Optical Instrumentation Engineers) <p>5. Expected effect</p> <ul style="list-style-type: none"> - manage of biomedical experiments, - manage of R&D laser and optical systems for aesthetic applications, - manage of R&D diode laser with feedback system for dental applications, - manage of R&D laser for cataract extraction and others ophthalmic applications, - patent preparation, - design documentation for medical testing and certification, - manage of production, R&D and sales of solid-state lasers, - manage of R&D fiber optics and medical instruments, - scientific articles preparation (more than 100), - manage of R&D LED devices for medical application, - lecturing on biotissues optics, laser & optical medical technologies 		
Education	Ph.D	Major	Quantum Electronics
		Research field	Interaction of laser radiation with biotissue
		Dissertation	Investigation of the interaction of intense laser radiation with human's hard biotissues

Code # : KC09

Available term for consultation	5day	Available for trip to Korea	Yes
Intellectual property Information	-		
Category of Research (Choose 1 or more)	BT(Biology Technology, <u>ETC(Lasers, Biomedical optics and technology)</u>)		
Available field for consulting	<p>1. Career</p> <ul style="list-style-type: none"> - (2018-Current) - engineer of NELA Ltd. - (2019-Current) - assistant of faculty of laser photonics and optoelectronics of ITMO University. - (2018-2019) - engineer of laser systems and technology department of ITMO University <p>2. Consultation fields</p> <ul style="list-style-type: none"> - design of solid-state lasers for medical applications; - laser-tissue interaction; - laser-assisted drug delivery <p>3. Expected effect</p> <ul style="list-style-type: none"> - optimization of laser radiation parameters for laser processing of tissue 		
Education	Ph.D	Major	Quantum electronics
		Research field	Design of laser system for cataract extraction based on solid-state Yb,Er:Glass laser, laser-tissue interaction
		Dissertation	Laser hydroacoustic processing of cataract lens by microsecond pulses of Yb,Er:Glass laser
	MS	Major	Laser technology and instrumentation
		Research field	Design of high-power solid-state Yb,Er:Glass laser
		Dissertation	High-power pulsed diode-pumped laser of eye-safe range
	BS	Major	Technical physics

Code # : UC01

Available term for consultation	free	Available for trip to Korea	Yes /
Intellectual property Information	Controlled Transparency Screen, RU2645450C1, 2016-12-12 Memristor switching device, Application 2019140967 from 10.12.2019 Method for controlling memristor operation and device for its implementation, Application 2019140968 from 10.12.2019 Latest publication https://iopscience.iop.org/article/10.1088/1742-5468/ab684a		
Category of Research (Choose 1 or more)	IT(Information Technology), ME(Material&Equipment), MP(Manufacturing&Production), CT(Convergence Technology)		
Available field for cooperation	<p>1. Career Path (Experience)</p> <p>6.2018- till now, Engineering Center of Lobachevsky University Vice Director R&D Project Management, Planning of Engineering Center activity, Search, selection and arranging project development teams Manage by outsourcing engineers</p> <p>11.2009 — 12.2019 , LG Electronics, Technology Center in Moscow (LG TCM) Representative in Volga Region</p> <p>08.2000 — 09.2009 , LG Innotek, R/F Lab, Representative office of LG Innotek in Russia Office Head Executive Director of R&D Lab, R&D Project Management, Finance Management, Planning of Representative Office activity, Search, selection and arranging project development teams Manage by outsourcing engineers</p> <p>Over 50 R&D projects in area of wireless and wired communications, electronics, HW and SW design, RF Front End design, Mobile Communication, Measurement equipment, new polymer development, LED, OLED, LCD, etc. Development of equipment related to WLAN, WPAN, WWAN, Wireless USB, WiFi, Multi Band OFDM, GSM, WCDMA, GPS, PCS, WiMax, WiMedia, MIMO, optic communication, image processing etc</p> <p>04.1998 - 07.2000 , LG Electronics, Technology Center in Moscow (LG TCM) Representative in Nyzhny Novgorod R&D project management, Search, selection and arranging project development teams Manage by outsourcing engineers</p> <p>R&D projects in area of wireless communications, electronics, HW design, Mobile Communication, measurement equipment, acoustic electronics etc. Development of equipment related to WWAN, GSM, CDMA, GPS, MW systems etc.</p> <p>11.1996 - 08.2012 , Nyzhny Novgorod State University</p>		

Senior Lecturer, Associated Profesor

Scientific and Applied Research, Teaching

Basics of communication systems and RF waves propagation, noises and fluctuations.

Over 40 scientific papers in international scientific journals.

Citation h-index 11

Participation in projects of INTAS (International Association for the promotion of co-operation with scientists from the New Independent States of the former Soviet Union established in 1993 by the European Community)

Participation in the projects of Russian Foundation for Basic Research

Participation in Russian-Italian project for International PhD Scholarship in framework of Bologna process

09.1995 - 11.1996 , University of Palermo (Italy)**Researcher**

Applied research for ST Microelectronics

Optimization of MOSFET transistors

08.1991 - 06.1993 , Nizhny Novgorod State University**Researcher**

Scientific research

3. Certification

- Foreign economy management, Lobachevsky Univ.
- International technology transfer, Lobachevsky Univ.
- Global Manager Course, LG Electronics Learning Center

4. Relate Networking

- Manager of international PhD school (Russia-Italy-Spain)

Education	Ph.D	Major	Radio-physics and Quantum Electronics
		Research field	Fluctuations in nonlinear systems, Markovian random processes
		Dissertation	Time and spectral characteristics of noise induced transient processes in nonlinear systems

Code # : UC02

Available term for consultation	5 days	Available for trip to Korea	Yes
Intellectual property Information	<p style="text-align: center;">Balandin, D.V., Kogan, M.M. Multi-objective generalized H2 control (2019) Automatica, 99, pp. 317-322.</p> <p style="text-align: center;">Balandin, D.V., Biryukov, R.S., Kogan, M.M. Pareto Suboptimal Robust Controllers in Multi-Objective Generalized H2 Problem // (2018) MED 2018 - 26th Mediterranean Conference on Control and Automation, статья № 8443072, pp. 481-486.</p> <p style="text-align: center;">Balandin, D.V., Kogan, M.M. Multicriteria Robust Generalized H 2 and γ_0 Controllers with Application to Stabilization of a Rotor in Electromagnetic Bearings (2018) Automation and Remote Control, 79 (6), pp. 996-1012.</p> <p style="text-align: center;">Balandin, D.V., Kogan, M.M. Design of Pareto-Optimal Linear Quadratic Estimates, Filters and Controllers (2018) Automation and Remote Control, 79 (1), pp. 24-38. Balandin, D., Malkin, S. On stability of the electromagnetic suspension rotor in space of control parameters // (2017) Cybernetics and Physics, 6 (4), pp. 174-178.</p> <p style="text-align: center;">Balandin, D.V., Kogan, M.M. Pareto suboptimal controllers in multi-objective disturbance attenuation problems (2017) Automatica, 84, pp. 56-61.</p>		
Category of Research (Choose 1 or more)	IT(Information Technology), ME(Material&Equipment),		
Available field for consulting	<p>R&D projects:</p> <ul style="list-style-type: none"> • "Optimization of vibration shock protection of multibody elastic objects" (RFBR grant 01-01-00591), 2001-2003. http://www.rfbr.ru/rffi/ru/project_search/o_199487 • "Optimal vibro-impact protection for multibody elastic systems" (RFBR grant 07-01-00481), 2007-2009. http://www.rfbr.ru/rffi/ru/project_search/o_55312 • "New methods for the synthesis of optimal control laws for mechanical systems with constraints on the phase and control variables" (RFBR grant 10-01-00514), 2010-2012. http://www.rfbr.ru/rffi/ru/project_search/o_46828 • "Optimal Impact Protection for Disabled Persons in Vehicles" (NSF BES 0302337), 2003-2006. • W.Pilkey, USA, D.Balandin. • "Optimal Development of the Optimal Impact Isolation Theory for Injury Prevention" (NATO PST. CLG. 979409), (CBP.NR.NRCLG 982082). 2004-2006. W.Pilkey, USA, D.Balandin. • Vibration damping of the building by means of elastic connection with the base <u>2016-2018</u>: "Multicriteria problems of noise and vibration control of dynamic objects under uncertainty of external influences" (Russian Foundation for Basic Research) <u>2015-2017</u>: "Research and development of microwave sensor for active control of vibrations of buildings and constructions" (Ministry of Science and Education grant) <u>2016-2018</u>: "Development of the theoretical basis for the study of the dynamics and development of technology of electromagnetic suspension of the vertical rotor of large size and weight of new nuclear power plants and renewable energy sources" (Russian Science Foundation grant) <u>2017</u>: "Mathematical modeling of the dynamics of the rotor with active magnetic bearings" (a company) <u>2018-2020</u>: "Multicriteria problems of optimal control of vibrations of mechanical systems under uncertainty" (Russian Foundation for Basic Research) 		

2018: "Study of the dynamics of rotor systems with active magnetic bearings for advanced power plants of orbital space stations" (Russian Foundation of Basic Research)

Selected papers and books

Balandin DV, Kogan MM, Pareto Optimal Generalized H_2 -Control and Optimal Protection from Vibration. *IFAC-PapersOnLine*. 2017;50;4442-4447. Available from: <https://www.sciencedirect.com/science/article/pii/S2405896317307140>

Balandin D.V., Kogan M.M. LMI-based optimal attenuation of multi-storey building oscillations under seismic excitations// JOURNAL OF STRUCTURAL CONTROL & HEALTH MONITORING. 2005. Volume: 12. Issue: 2. Pages: 213-224. Available from: <https://onlinelibrary.wiley.com/doi/abs/10.1002/stc.60>

Balandin DV, Bolotnik NN, Pilkey WD, Review: Optimal Shock and Vibration Isolation. *Shock and Vibration*.1998;5:73-87. Available from: <https://www.hindawi.com/journals/sv/1998/197040/abs/>

Balandin DV, Bolotnik NN, Pilkey WD, *Optimal Protection from Impact, Shock, and Vibration*. Amsterdam: Gordon and Breach Science Publishers; 2001.

Education	D.Sc	Major	Physics and Mathematics
		Research field	Algorithms for vibration control an multicriteria optimization
		Dissertation	Mathematical modelling and optimization antishock and antivibration systems in uncertain conditions

Code # : UC03

Available term for consultation	free	Available for trip to Korea	Yes
Intellectual property Information	<ol style="list-style-type: none"> 1. System and method for adaptive phase compensation of OFDM signals ((US patent 7,457,366) 2. System and method for intelligent transmitted power control scheme (US patent 7,460,876) 3. An adaptive multicarrier wireless communication system, apparatus and associated methods (US patent 7,286,609) 4. System and method for selecting data rates to provide uniform bit loading of subcarriers of a multicarrier communication channel (US patent 7,333,556) 5. Multicarrier communication system and methods for link adaptation using uniform bit loading and subcarrier puncturing (US patent 7,570,953) 6. Adaptive channel equalizer for wireless system (US patent application 20050141657) 7. Downlink preamble processing techniques for initial acquisition (US patent 8,019,026) 8. Method for channel estimation using recursive filtering and multicarrier receiver with interference-aware demodulation (US patent 8,428,158) 9. Interfering base stations recognition method and scheme for 802.16e systems (US patent 8,351,522) 10. Channel quality assessment method in ODFM(A) communications systems (US patent 8,345,781) 11. Method, device, and apparatus for multi-stream multi-band transmission (US patent 7,899,125) 12. Method and apparatus for suppressing co-channel interference (US patent 8,804,884) 13. mmWave communication system using MIMO and beamforming (USPTO provisional application No 61157558) 14. Pre-coding method for spatial multiplexing in multiple input and output system (US patent 8,842,640) 		
Category of Research (Choose 1 or more)	IT(Information Technology)		
Available field for cooperation	<p>SUMMARY</p> <ul style="list-style-type: none"> • 19+ years experience in R&D and ICT (Intel, Rostelecom, UNN, Lantan) • 12+ years experience in initiation and management of R&D projects • Experience in modern wireless technologies (Car radars, Wi-Fi, LTE/WiMAX, mmWave, etc.) • Ph.D. degree in Physics and Mathematics (Radio Physics), Master degree in Economics • Proven analytical capabilities (number of publications – 30+, patent applications – 14) <p>2014 — currently: Lobachevsky State University of Nizhni Novgorod (UNN) SENIOR RESEARCH SCIENTIST</p> <p><u>Achievements:</u></p> <ul style="list-style-type: none"> • Several large R&D projects were performed, including: <ul style="list-style-type: none"> - Optical power meter for high voltage power lines (budget: RUR 142M) - Mobile meteoradar (budget: RUR 94M) - Microwave sensing system for active control of building vibrations (budget: RUR 68M) • UNN Engineering Center was started (budget: RUR 92M) • Megagrant StoLab was started (budget: RUR 96M) <p>2007-2017: LANTAN Ltd (Nizhny Novgorod, Russia) R&D PROJECT MANAGER</p> <p><u>Responsibilities:</u></p> <ul style="list-style-type: none"> - R&D project management. - Work with R&D project agreements and contracts. <p><u>Achievements:</u></p> <ul style="list-style-type: none"> • 20+ R&D projects in the area of wireless technology were performed, including: <ul style="list-style-type: none"> - Small multiband antenna characteristics measurements (for Samsung) - Development of super wideband antenna concept for mobile phone (for Samsung) - Super wideband antenna prototype for folder-type phone (for Samsung) - Development of UL MIMO scheme for 802.16m system (for LG Electronics) - Transmitting/receiving OFDMA (mWiMAX) and SC-FDMA (LTE) signals simultaneously on Uplink (for LG Electronics) - Development of high-throughput PHY concept for mmWave communications (for LG Electronics) 		

- Development of mWiMAX signal analyzing module for DMA (for LIGNex1)
- Development of photopolymer material specified properties (for LG Electronics)
- Direction-of-Arrival (DoA) estimation for 77GHz automotive radar (for LG Electronics)
- Modification of Direction-of-Arrival (DoA) estimation scheme on the base of real road measurements data (for LG Electronics)
- 2 US and Korean patent applications were submitted.

2001-2007: Intel Corporation

SENIOR RESEARCHER

Responsibilities:

- Support of Intel activity in mmWave WPAN standardization process (IEEE 802.15.3c):
- Preparing materials with research results for internal (Intel mmWave Forum) and external (IBM, Philips, SiBEAM, WirelessHD, IEEE802.15.3c) meetings.
- Feasibility study of UWB system concept for mmWave WPAN.
- Research support of Intel Mobile WiMAX product (“Ofer”) developing by BWD-Israel:
- Investigation of fast link adaptation schemes efficiency in WiMAX systems (IEEE 802.16e).
- Development of software platform for system level simulations of Mobile WiMAX systems.
- Development of DL preamble processing scheme for initial acquisition in IEEE 802.16e systems.
- Development high throughput wireless LAN concept (IEEE802.11n).
- Development of link layer simulator of OFDM system (IEEE802.11a PHY).

Achievements:

- 12 US patent applications were submitted at US PTO.
- Gratitude from Intel Mobile WiMAX product team (BWD-Israel).
- 2 standard contributions to TG IEEE802.15.3c were sent.
- First Intel proposal for IEEE 802.11n.
- Paper at Intel Technology Journal.
- Intel Russia/CIS Recognition Award “In recognition of valuable contribution to Intel Mobile WiMAX platform strategy”
- Intel Russia/CIS Special Recognition Award “In recognition of contribution to the first Intel WiMAX simulator development”

Education	Ph.D	Major	Radio Physics
		Research field	Stochastic signal processing
		Dissertation	Analysis of fast link adaptation techniques for OFDM wireless communication systems
	MS	Major	Radio Physics
		Research field	Stochastic signal processing
		Dissertation	Analysis of statistical characteristics of frequency-selective channel capacity
	BS	Major	Radio Engineering

Code # : UC04

Available term for consultation	1week	Available for trip to Korea	Yes
Intellectual property Information	-		
Category of Research (Choose 1 or more)	IT(Information Technology)		
Available field for cooperation	<ul style="list-style-type: none"> • Neural networks • Fundamental and applied research on the system integration • Expert systems and knowledge management systems • Knowledge-based technologies • Data science, big data, analytics, data acquisition and management. <p>Working since 1996 in the Ural Federal University: 1996 - 1999: programmer of the Department of Accompanying the Automated Control Systems; 1999 - 2003: Deputy Chief Accountant for control and auditing work; 2003 - 2009: Director of the Ural Regional Center for New Information Technologies; 2009 - 2010: Deputy Head of the Department of Informatization; 2010 -2016: Head of the Chair of Multimedia Technologies 2016 - Present - Director of the Innovation Center "Sporting Technologies"</p> <p>Main publications:</p> <ol style="list-style-type: none"> 1. A. Kim, V.Kormyshev, H.Kwon, M. Safronov, A. Tarasyev. HIV-infection modeling. IFAC-Proceding Volumes (IFAC Papers Online) ISSN 2405-896, 2015, p.206-209; 2. A. Kim, V.Kormyshev, H.Kwon, M. Safronov, A. Tarasyev. Results of HIV-infection model stabilization. IFAC-Proceding Volumes (IFAC Papers Online) ISSN 2405-896, 2015, p.210-213; 3. A. Kim, V.Kormyshev, H.Kwon, M. Safronov, A. Tarasyev. HIV-infection model stabilization. IFAC-Proceding Volumes (IFAC Papers Online) ISSN 2405-896, 2015, p.214-217; 4. V.M. Kormyshev, M.A. Medvedeva, E.S. Naboychenko, A.V. Prisyazhnyy, A.P. Shamanov. Detection of Failures in a Stator of Turbo-Generator on Early Stages of Their Evolution. http://dx.doi.org/10.1063/1.4951877 Published by the American Institute of Physics 5. A.V. Kim, V.M. Kormyshev, O.B. Kwon, E.R. Mukhametshin On the Pontryagin maximum principle for systems with delays. Economic applications AIP Conference Proceedings 1906, 070002 (2017); https://doi.org/10.1063/1.5012328 6. A.V. Kim, V.M. Kormyshev, N.B. Serova, L.N. Fitina, A.B. Kozhakhmetov Ordinary multiplication of distributions. Application to control of economic processes AIP Conference Proceedings 1906, 070003 (2017); https://doi.org/10.1063/1.5012329 7. A.V. Kim, V.M. Kormyshev, M.Yu. Novikov, M.A. Nikonov Differential games in economic systems with delays AIP Conference Proceedings 1906, 070004 (2017); https://doi.org/10.1063/1.5012330 8. A.V. Kim, V.M. Kormyshev, M.Yu. Novikov, M.A. Nikonov On control of systems delays in economics AIP Conference Proceedings 1906, 070005 (2017); https://doi.org/10.1063/1.5012331 9. Kim, A.V., Kormyshev, V.M., Ivanov, A.V. On the maximum principle for systems with delays (2018) Springer Proceedings in Mathematics and Statistics, 230, pp. 211-219. DOI: 10.1007/978-3-319-75647-9_17 <p>SCIENTIFIC PROJECTS</p>		

During the period 2011-2017, he managed the R & D for a total amount of more than \$ 150,000 (7,000,000 rubles):

- 2013-2014 "Development of video-audio stream synchronization tools for a multi-angle broadcasting cluster"
- 2014 "Improving the Synchronization of Video-Audio Streams for a Multi-Angle Broadcast Cluster"
- 2015 "Development of a comprehensive methodology for testing artificial grass coverings, adapted to the requirements of Russian and international standards"
- 2016 "License agreement for the provision of the secret of production" Neural Model of the Meter "
- 2015-2017 "Provision of services for the examination of scientific, technical and innovative activities"

AWARDS

- Winner of the gold medal VVC (VDNH) for innovation in education (2005)
- Awarded with the diploma of the Ministry of Education of the Russian Federation. for many years of fruitful work to develop and improve the educational process, a significant contribution to the training of highly qualified specialists. (2011)
- Awarded with an honorary medal "Honored Worker of Higher Professional Education" for merits in the field of education (2014)
- Has awards and gratitude from the URFU administration, the Administration of the city of Yekaterinburg, the Ministry of Economics of Knowledge of the Republic of Korea, the Ministry of Education of the Mongolian People's Republic, the Ministry of Education of the Republic of Kazakhstan.
- Has a sporting title "International Master" in chess

Education	Ph.D	Major	Computer Engineering
		Research field	"The use of computer technology, mathematical modeling and mathematical methods in scientific research (by branches of science) "
	MS BS	Major	Radio engineering
		Research field	Radio engineering faculty with a specialization in "Computers, complexes, systems and networks",

Code # : UC05

Available term for consultation	Free	Available for trip to Korea	Yes
Intellectual property Information	Patent KR101094404 METHOD FOR MANUFACTURING SEMICONDUCTOR SUBSTRATE International Patent Application WO 2007112075 A3. Method for Manufacturing an Energy Storage Device International Patent Application WO 2006/038292 A1 Electrode Material and Electrochemical Device International Patent Application WO 2006/038293 A1 Method for Producing Electrode Material International Patent Application WO 2005/036572 A1. Electrode for energy storage devices and electrochemical supercapacitor based on said electrode Int. Patent Application WO 2004/030123 A1 Method for the Manufacture of Electrode for Energy-Storage Devices Int. Patent Appl. WO 2004/ 032162 A1. Electrochemical Capacitor and Method of Use Int. Patent Appl. WO 2004/ 032261 A1. Int. Publ. Date 15.04.2004. Method of Manufacture of an Electrode for Electrochemical Devices US Patent No 6,795,293 B2 Polymer-modified Electrode for Energy Storage Devices and Electrochemical Supercapacitor Based on Said Polymer-modified Electrode US Patent Application No 20030047459 A1 Electrochemical reacting electrode, method of making, and application device US Patent 6606850 Hybrid high temperature fuel cell volume expansion heat engine International Patent Application WO03017451 Magneto-electric machine of linear type International Patent Application WO 2002/058201 Stationary energy center		
Category of Research (Choose 1 or more)	NT(Nano Technology), ET(Environment Technology), ST(Space Technology), ME(Material&Equipment), MP(Manufacturing&Production), CT(Convergence Technology)		
Available field for consulting	1. Career Path(Experience) Апрель 2014 – January 2017– R&BD Partners (Seoul, South Korea). TRIZ-expert April 2011- January 2018 - Converging Technologies Ltd., Scientific Leader May 2012 – January 2014 - Technical University of Liberec (Czech Republic), TRIZ expert March 2009 –2011– Samsung Corning Precision Materials Co, TRIZ expert Innovation TRIZ consulting, technical problems solving, training 1997- March2009– GEN3 Partners / Algorithm, Saint Petersburg. Innovation TRIZ consulting; area of specialization – concept development and verification. 2000- 2009 – Head of Physics&Electrochemistry Department (Algorithm) / Principal (GEN3 Partners, http://www.gen3partners.com/about/team/sergey_logvinov) Leadership and management in groups executing consulting projects on packaging manufacturing (gas barrier layers production, polymer films reinforcement), chemical technologies (agglomeration, supercritical fluids processes), chemical power sources (fuel cells, supercapacitors). 30 successful consulting projects for Nippon ChemiCon, Eagle Picher, Alcoa, Clorox, Energizer. Main performed functions – implementation of modern TRIZ tools and methods, concept verification, documentation preparation for filing patent applications. Accomplishments: 40% Cost reduction in the multi-layered packaging manufacturing process (annual production volume before cost reduction – \$200M); Full development cycle for redox polymer-based capacitors (search for basic technology – generation and elaboration of ideas for technology improvement – experimental verification – IP protection – design, assembly, and tests of a laboratory prototype – preparation for licensing the technology). Results are protected by 1 patent and 7 international patent applications. Design, assembly, and tests of prototypes of a conducting polymer-based Current Limiter Device Development of procedure for clay agglomeration and foaming by using supercritical carbon dioxide 1997-1999 Researcher, Senior Researcher Active participation in consulting projects. 12 successful consulting projects for Honda, Xerox, Procter&Gamble, Hilti, Intel, Motorola. Main performed analytical procedures: Function-Oriented Search, Evolutionary Trends Analysis, Cause-Effect Chains		

Analysis; involvement in concept development, substantiation and verification.
 Accomplishments:
 Prediction of "absolute victory" of Hybrid cars over Fuel Cell-based vehicles;
 Determination and elimination of defect-generating steps in Stress-Buffer Layers manufacturing process (integrated circuits), which resulted in \$20M in client's savings.
 1997-2005 Educator, Saint-Petersburg, International University of Scientific and Technical Work and Development (MUNTTR).
 Lecturing an individually developed course "Creative Imagination Development".
 Graduation theses supervision (7 students)
 1992-1995 Deputy Chief Engineer, Drevich Inc, Saint-Petersburg.
 Development of formulations and conditions for plasma coating of biocompatible coatings onto endoprosthesis devices. Development of supporting equipment.
 Maintenance and improvement of thermal equipment.
 1986-1989 Researcher, Leningrad Institute of Television.
 Assembly of visible and infrared polymatrix photodetectors for space television systems. Electronic circuit prototyping. Maintenance and improvement of vacuum and cryogenic equipment.

2. Consultation fields
 Application of TRIZ methodology for improvement electronic, optical, chemical and electrochemical devices and technologies

3. Certification
 2010 MATRIZ certified specialist Level 5 (TRIZ Master); certificate №79

4. Relate Networking
 MATRIZ Vice President, licensed MATRIZ representative for certification of 1-3 level specialists

5. Expected effect
 Implementation of projects using the TRIZ methodology to reduce costs, improve the parameters of technical systems and find the causes of defects.

Education	Ph.D	Major	Electrochemistry
		Research field	Conductive polymers, supercapacitors, lithium-ion batteries
		Dissertation	Dissertation title: "Modification of double-layer capacitance by polymer nickel complexes with Schiff base ligands"
	MS	Major	Semiconductor technology
		Research field	IR sensors
		Dissertation	The study of the infrared photodetector based on the zinc doped silicon
	BS	Major	Solid State Physics

Code # : UC06

Available term for consultation	1-3 week in august 2020	Available for trip to Korea	Yes
Intellectual property Information	<p>1.Korean Patent: BONE CONDUCTION SPEAKER KR101121170 (B1) — 2012-03-22</p> <p>2.Korean Patent: LED LAMP WITH HEAT RADIATION MECHANISM USING CONVECTION CIRCULATION KR20110062822 (A) — 2011-06-10</p> <p>3.USSA Patent (Author's certificate): ROTATOR № 1510543/1989.22. May</p> <p>4.USSA Patent (Author's certificate): SLIDING DOORS OF HANGAR № 1497937/1989.01. Apr.</p> <p>5.USSA Patent (Author's certificate): PROTECTIVE DOME № 1480388/1989.15. Jan.</p> <p>6.USSA Patent (Author's certificate): WAY OF PUTTING A PROTECTIVE COATING ON AN ELASTIC HARNESS № 1417744/1988.15. Apr.</p> <p>7.USSA Patent (Author's certificate): DOORS OF HANGAR № 1307734/1987.03. Jan.</p>		
Category of Research (Choose 1 or more)	ME/MP		
Available field for consulting	<p>Project management experience: participated in several projects as a developer of new technical systems, business-adviser and business-trainer on modernization of productions and managerial processes in the companies:</p> <ul style="list-style-type: none"> • Metallurgical companies: "Severstal", "Nornikel", "NLMK", "VMZ", "VSMPO-AVISMA" (Russia) • Several production SMEs (South Korea, 2009, 2011, 2013) *** • Furniture fittings: "MDM-Complect" (Russia) • Car manufacturing company: "KAMAZ" (Russia). • Natural Beverage Company: "OCHAKOVO" (Russia) • Research institutes: "Flight Research Institute" (Russia) • High noise level headset bone. (South Korea)/ • Marriage Probe Card. (South Korea) • Overheating of LED lights. (South Korea) • Bend the shaft. (South Korea) • Blockage of channels. (South Korea) • Burn the tray. (Russia) • Cooling of the stamp. (Russia) • Damage to the machine. (Russia) • Stale material. (Russia) • Overspending of electricity. (Russia) • Twisting of the profile. (Russia) • Ph.D. on cognitive-creative activity • Development of methodical materials for educational system • Development of methodical materials on TRIZ • Development of methodical materials for business consulting 		

Education	Ph.D	Major	Chelyabinsk state university (Chelyabinsk, Russia)
		Research field	Manufacturing Process
		Dissertation	TRIZ-Master
	MS	Major	Public university of technical progress (Chelyabinsk, Russia)
		Research field	Manufacturing Process
		Dissertation	TRIZ-Expert (Diploma №39)
	BS	Major	Kazan aviation institute (Kazan, Russia) Engineer, Major in mechanic of aircraft construction (Diploma BI №404325)

Code # : UC07

Available term for consultation	Free	Available for trip to Korea	Yes
Intellectual property Information	№232-T2-06 от 28.12.2006г. №238-T2-07 от 26.10.2007г. №271-T2-07 от 19.09.2007г. №213-T2-07 от 24.06.2007г. №40-T2-07 от 22.02.2007г. №132-T2-08 от 21.04.2008г. №18-T2-09 от 31.01.2009г. №134-T2-09 от 29.05.2009г. №175-T2-09 от 03.07.2009г. №166-T2-10 от 06.07.2010г. №250-T2-10 от 28.09.2010г.		
Category of Research (Choose 1 or more)	ME(Material&Equipment), MP(Manufacturing&Production)		
Available field for cooperation	<p>1. Career Path (Experience)</p> <ul style="list-style-type: none"> - (2007 - Current) Director of Limited liability company "Repair and installation service" MECHANIC» - (2000 - 2007) chief mechanic of JSC "Sinarsky pipe plant" of the t-2 shop - (1996 – 2000) chief mechanic of JSC "Kamensk-Uralsky foundry» <p>2. Field consultations</p> <ul style="list-style-type: none"> - (2018-2019) Transfer of grinding unit No. 4 of shop No. 5 to the production of aluminum powders at the Kamensk-Ural non-ferrous metal processing Plant open joint stock company»; - (2018-2019) Design, installation, electrical installation and commissioning works at the site of JSC "SinTZ" of the t-2 shop "implementation of the OTC table at the site for the production of threaded pipes" 2012.; - (2018-2019) IPP Object 2018 JSC "SinTZ" inox shop " Development and implementation of the line of internal polishing of long pipes made of anti-corrosion steels»; - (2017-2018) IPP-2017 object of JSC "SinTZ" t-2 shop " implementation of the OTC table at the site for the production of threaded pipes» - (2017) JSC "SinTZ" shop T-2 " Repair of 4 basic parts of MSC-25 machines of EMAG company of pipe rolling shop No. 2»; - (2017-2018) JSC "SinTZ" shop T-2 object IPP-2016 " introduction of a muftonaverting machine with mechanization»; - (2016-2017) IPP-2015 Object " introduction of a muft-adjusting machine with mechanization "Mechanical foundry»; - (2016-2017) JSC "SinTZ" "" Work on Assembly of equipment units for applying conservation coatings»; - (2015-2016) JSC "SinTZ" inox shop " Production of the smoke pump of the light annealing furnace in the medium of especially pure hydrogen SITKA» - (2017) SUAL-Silicon-Ural LLC " installation of the chimney. Gas cleaning plant. Modernization»; - (2016) SUAL-Silicon-Ural LLC " Restoration of technical and operational characteristics of equipment-ore-thermal furnace No. 3»; - (2016) TMK-INOX LLC " works on modernization of the Guzzetti g764 electric welded stainless steel pipe production line, on modernization of the YC-40 pipe rolling mill on the production site»; - (2015) JSC "kuzocm "" Assembly and installation of the HDS100-10A correctly-stretching machine of shop no. 3»; - (2015) JSC "kuzocm "" Installation of equipment for the continuous extrusion line LH350-RY of shop no. 3»; - (2014) JSC "SinTZ" shop B-2 "Repair of the furnace with a roller hearth for light annealing 		

and normalization of pipes, type ROs 225/35/2000 St, firm" Ebner "(vacuum pumps VNG-6, bn-500, VN-4500»;

3. Expected effect

- Students will get acquainted with the practice of developing new technologies and their experimental testing;
- With organizational work on rationing resource requirements of different types;
- Development of methods of organization of production and labor, improvement of product quality;
- Capital construction (investment activity).
- Continuous processing processes: vibration processing, powder metallurgy, precise plastic deformation, precision investment casting, centrifugal, under pressure, stamping, etc.

6. Appx.

- (2015 - Current) technical consultant in the field of industrial equipment of PJSC Sinarsky pipe plant INOX»

Education	MS	Major	Ural Polytechnic Institute
		Research field	Mechanical engineer Faculty of mechanical engineering
		Dissertation	Technical re-equipment of the radial boring machine

Code # : UC08

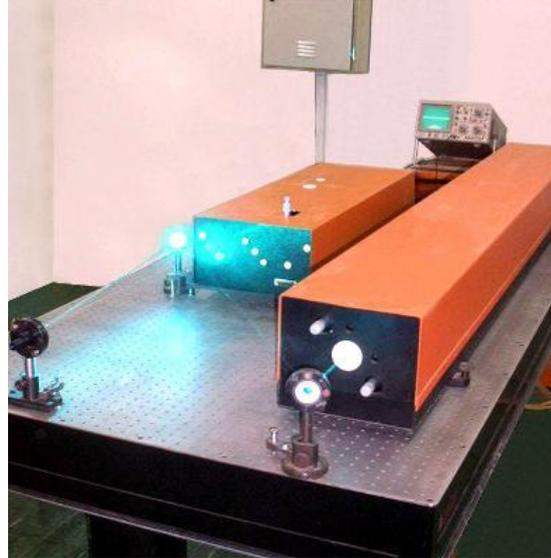
Available term for consultation	free	Available for trip to Korea	Yes
Intellectual property Information	Internal Know-How		
Category of Research (Choose 1 or more)	ME (Material&Equipment), MP(Manufacturing&Production)		
Available field for cooperation	<p>1. Career Path (Experience) - (2015 ~ Current) TC Printing technologies LLC / Head of laboratory : Research and commercialization in printed electronics area (materials, technology, devices)</p> <p>2. Consultation fields - Silver pastes with nano- and microparticles; - Printed devices; - Wearable electronics; - Force and bend</p> <p>3. Providing consultation with meaningful information regarding sophisticated approaches to formulations of pastes for printed electronics.</p> <p>1) stencil printable pressure-assisted paste that can be used as a thermo- a electroconductive interface between semiconductor chip and heatsink Physical properties: Low specific resistance 3×10^{-7} Ohm*m Recommended sintering parameters: <10 Mpa; <250 °C</p> <p>2) stencil printable non-pressure paste that can be used as a thermo- a electroconductive interface between semiconductor chip and heatsink Physical properties: Low specific resistance 5×10^{-8} Ohm*m Recommended sintering parameters: <240 °C Applications •Joining of large area Si chips with heatsinks Pressure-assisted paste provides excellent electrical conductivity together with high thermal conductivity.</p>		
Education	Bachelor	Electronics engineering	

Code # : UC09

Available term for consultation	One Week	Available for trip to Korea	Yes
Intellectual property Information	-		
Category of Research (Choose 1 or more)	ME(Material&Equipment), MP(Manufacturing&Production)		
Available field for consulting	<p># Main Research</p> <p>Development and research of diode-pumped solid-state lasers with mode locking and cavity Q-switching in various regions of the generation spectrum. Obtaining ultrashort pulses and high peak radiation powers of such lasers.</p> <p>Creation of high-power solid-state lasers with nonlinear frequency conversion (tuning range 0.25–10 μm) pumped by diode-pumped high-power solid-state lasers and their harmonics.</p> <p>In addition, work was carried out with the titanium-sapphire laser, which has the widest tuning range, and from which the highest continuous radiation power of ~ 40 W was obtained to date [Donin V.I. et al. Optics Commun., 1995, Vol. 122, P.40].</p> <p>Physical processes in a high-current gas-discharge plasma with the aim of creating powerful (~ 100–1000 W) continuous radiation sources in the visible and UV spectral regions.</p> <p># Related Projects</p> <ul style="list-style-type: none"> - Studies of ion-sound instability of a high-current discharge of low pressure have been completed, the development of which can limit the lasing power and shorten the life of ion lasers. In particular, using the methods of optical plasma diagnostics, the local dispersion characteristics of the lower instability modes were studied. - A powerful effective source of continuous long-range VUV radiation for processing samples with a large total area has been created . A powerful single-mode Nd: YAG laser was developed with pumping by diode lasers and an 80% conversion coefficient of radiation into the second harmonic. - Studies have been conducted on the creation of radiation sources that are widely tuned in frequency based on a titanium-sapphire laser with the possibility of intracavity doubling and tripling of its generation frequency to 280 nm, dye lasers, and also a parametric light generator with the adjustment region of 3-10 microns. A software package has been developed for calculating the characteristics of nonlinear media in the generation of optical harmonics up to the fifth. - An original method has been proposed for implementing the Q-switching modes and simultaneously mode locking in a solid-state laser using a single traveling wave AOM, as well as with the formation of a Kerr lens in a doubling nonlinear crystal [26]. In the case of a diode-pumped Nd: YAG laser, this method allows you to widely control the pulse duration (3 ÷ 100 ps, 50 ÷ 500 ns), their repetition frequency (1 ÷ 50 kHz) and increase significantly (107 ÷ 108 times) pulsed laser power. - Issues of effective selection of the TEM00 mode and thermo-optical distortions in a solid-state laser with longitudinal diode pumping were studied. A powerful air-cooled single-mode diode-pumped Nd: YVO4 laser has been developed, which in addition to high power has a high optical efficiency (≈60%). - A new physical effect was discovered — self-organization of Q-switch solid-state laser generation and mode locking, in which Q-switch pulse trains “spontaneously” 		

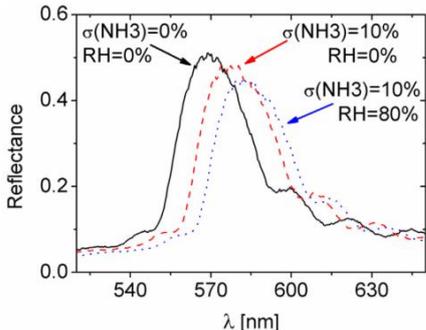
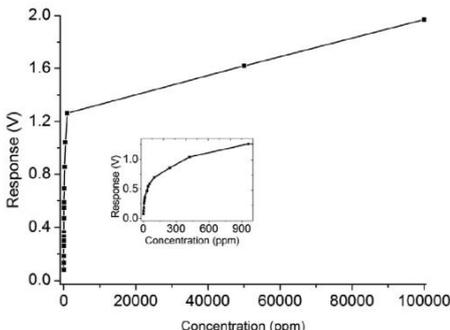
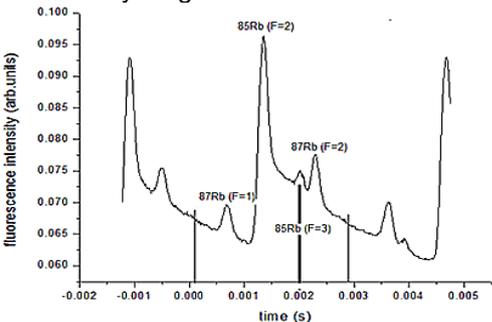
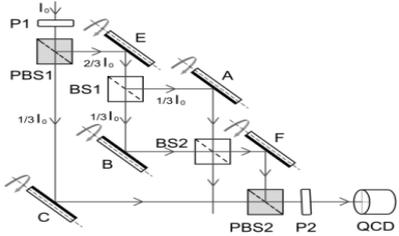
form at a relaxation oscillation frequency, and each train contains equally spaced picosecond monopulses .

- We studied the parametric generation of the middle IR, visible, and UV spectral ranges from a non-linear PPLN crystal with synchronous pumping by a Q-switched Nd: YAG laser with Q-switching and mode locking at a pump intensity of $\leq 10 \text{ GW} / \text{cm}^2$. Tunable radiation with wavelengths near 392, 463 and 822 nm was first observed.



Education	Ph.D	Major	Physics
		Research field	high-power ion lasers

Code # : UC10

Available term for consultation	One Week	Available for trip to Korea	Yes
Intellectual property Information	-		
Category of Research	ME(Material&Equipment), MP(Manufacturing&Production)		
Available field for consulting	<p># The main areas of research</p> <ul style="list-style-type: none"> - Optical and nonlinear optical phenomena in the interaction of light with structured materials. - Actual problems of nanoplasmonics. - Radiation-induced desorption phenomena, surface photophysics. - Optical magnetic resonances of the highest order, processes of collision and radiation transfer of particles, magnetic coherence, radiation transfer of optical coherence. <p># Research Projects</p> <ol style="list-style-type: none"> 1) The study of the mechanisms of ammonia adsorption on the surface of silica allowed us to significantly expand the sensitivity range of the photonic crystal sensor 2) Studying the mechanisms of ammonia adsorption on the surface of silica allowed us to significantly expand the sensitivity range of the photonic crystal sensor 3) Coating the cell walls can greatly affect the duration of the glow of excited rubidium atoms Abnormally long fluorescence of rubidium vapor 4) Spazers as a biological probe 5) The paradox of discontinuous trajectories of photons monitored by the method of "weak measurements" in a composite Mach – Zehnder interferometer <div style="display: flex; justify-content: space-around;">   </div> <div style="display: flex; justify-content: center; margin-top: 10px;">  </div> <div style="margin-top: 10px;">  </div>		
Education	Ph.D	Major	Physics
		Research field	Laser measurement & Laser optic system

Code # : UC11

Available term for consultation	One Week	Available for trip to Korea	Yes
Intellectual property Information	-		
Category of Research (Choose 1 or more)	ME(Material&Equipment), MP(Manufacturing&Production)		
Available field for consulting	<p># The main areas of research</p> <ul style="list-style-type: none"> - Development of physicochemical principles for the formation of active and passivating film nanostructures on A3B5 semiconductors. - Fundamental research of electronic processes in ultrathin (1-20 nm) dielectric layers. - Uncooled microbolometric IR receivers. - Multilayer quantum well (IRQ) based IR detectors. - IR receivers based on CdHgTe (CMT) heterostructures 1990-2007 - Matrix receivers of terahertz radiation. - Matrix and line multiplexers for IR receivers for various purposes. - Powerful microwave transistors on layered semiconductor structures. - Development of technology, manufacture and study of the physicochemical properties of biological and chemical sensors of various kinds. - Development of manufacturing technology for large format microbolometric matrices with a pixel size of 25, 17 microns. - Production of various types of test MIS structures and special-purpose devices for the institute's laboratories. 		
Education	Ph.D	Major	Physics
		Research field	Semiconductor, Microphotonics

Code # : UC12

Available term for consultation	One Week	Available for trip to Korea	Yes
Intellectual property Information	-		
Category of Research	ME(Material&Equipment), MP(Manufacturing&Production)		
Available field for consulting	<p># The main research areas</p> <ul style="list-style-type: none"> - Increasing the uniformity of the array of quantum dots in size while maintaining a uniform shape and elemental composition of QDs; spatial location control, density; decrease in the density of defects - extended (dislocation) and point defects. - Effects of interparticle interaction in an ensemble of quantum dots: Coulomb interaction of electrons / holes inside an isolated quantum dot, Coulomb interaction of charges between quantum dots, interaction (superposition) of elastic fields generated by individual quantum dots. - Porous silicon: microchannel plates, nanomembranes for biology and medicine. 		
	<div style="display: flex; justify-content: space-around;"> <div data-bbox="432 824 667 1077"> <p>Geometry of Ge island in Si 1.5 nm 15 nm Ge wetting layer 0.7 nm plane (001) in middle of wetting layer</p> </div> <div data-bbox="671 831 922 1084"> </div> <div data-bbox="927 808 1406 1077"> </div> </div> <div data-bbox="427 1160 1193 1435"> <p>Double layer structure</p> <p>Size quantization energy: ~ 70 meV Coulomb interaction energy: 36 meV for ground state 18 meV for excited state.</p> </div> <div data-bbox="427 1480 1129 1899"> <p>ФПУ в вакуумном криостате (ИФП СО РАН)</p> <p>288x4 линейчатый фотоприемник</p> <p>Тепловизионное изображение</p> <p>Фотоприёмная матрица 320 x 256 элементов</p> </div>		
Education	Ph.D	Major	Physics
		Research field	Semiconductor, microrbolometer, photoelectronics

Code # : UC13

Available term for consultation	Free	Available for trip to Korea	Yes
Intellectual property Information	DEVICE FOR MANIPULATING MICRO- AND NANO-OBJECTS, METHOD OF ITS MANUFACTURING AND CONTROL SYSTEM, № RU 2698570 C1, 2019.08.28		
Category of Research (Choose 1 or more)	NT(Nano Technology), ME(Material&Equipment), MP(Manufacturing&Production)		
Available field for cooperation	<p>Project Manager of “Nanoactuator” LLC, Researcher of Kotelnikov Institute of Radioengineering and Electronics (IRE) of Russian Academy of Sciences (RAS). Organization and management of the team of engineers and researchers. Writing scientific articles and patents for inventions. Work at the equipment: scanning electron microscope, electron lithography and focused ion beam microscope. Project promotion at the Russian and international conferences. Conducting industry analysis of the market and analysis of competitors. Attracting investment in the project. Preparation of presentations / analytical materials for investors and government representatives.</p> <ul style="list-style-type: none"> - Management of the team of the developers in the development of design documentation and the creation of prototypes. - Attracting financing in the amount of 1 million dollars from the funds of the Russian Science Foundation and the Russian Fund of Fundamental Investigations - Participation in international research projects and work abroad. \$ 0.5 million raised. <p>- For more than 3 years I have been successfully leading a team consisting of 5 developers in the project from the field of nano-robotics; - I regularly participate at the international conferences as a speaker (more than 4 times a year) in Russia and abroad, and also carry out part of the project work abroad; - I have about 40 scientific publications in peer-reviewed scientific journals, including Q1, and the Hirsch index = 7 in the Scopus system and Web of Science and 2 Patents; - I have successful experience in attracting investments from international funds (BRICS, e-Asia, India, China, etc.) and domestic funds; - received a technical education at the University, one of the top 5 in Russia and 300 in the world according to the QS World University Rankings 2020 rating. - I am the laureate of the Award of the Government of Moscow 2017 in the nomination Developments, “New Materials and Nanotechnologies”.</p>		
Education	Ph.D	Major	Nanotechnology
		Research field	Phase transitions, shape memory effect, three dimensional nanomanipulation, nanoinstruments development
		Dissertation	Phase transitions and shape memory effect at the nanoscale
	MS	Major	Nanotechnology
		Research field	Phase transitions, shape memory effect, three dimensional nanomanipulation, nanoinstruments development
		Dissertation	Giant deformations in the intermetallics with shape memory effect at the micro- and nanoscales.
	BS	Major	Nanotechnology

Code # : UC14

Available term for consultation	free	Available for trip to Korea	Yes
Intellectual property Information	1) Application No. 2019134463/14 (067953) (22) Application submission date 10.24.2019 (71) Applicant: Pestov Vladimir Vasilievich, RU (54) Title of the invention: DEVICE FOR TREATMENT OF RAS AND STOP OF BLEEDING USING LOW-TEMPERATURE PLASMA OF ATMOSPHERIC PRESSURE 2) Application No. 2019133607/20 (066318) (22) Application submission date 10/21/2019 (71) Applicant: Pestov Vladimir Vasilievich, RU (54) Title of the invention: Device for producing nitric oxide (NO)		
Category of Research (Choose 1 or more)	IT (Information Technology), BT (Biology Technology), ET (Environment Technology).		
Available field for cooperation	<p>2010 - 2019 I served as the head of the department of investment policy and coordination of scientific research of FOTEK Ltd. FOTEK Ltd. is the leader of the Russian market in its segment, occupying on average about one third of the Russian market in its segments (electrosurgical systems, including devices with low-temperature atmospheric pressure plasma, ultrasonic cavitation devices). Since 2010, I have introduced an open model of applied scientific research at FOTEK Ltd., according to which a very wide circle of teams and individual authors are involved in joint research (list of publications on the fotek.ru website). The research results are published for open discussion, and the equipment created on the basis of the results obtained is tested immediately in many places, both in research laboratories and in real clinical conditions. 2019 - to the present, I am the CEO of Medservice Ltd. The company is engaged in custom medical equipment development services. 2019 - to the present, I am the supervisor of the student design bureau of ABEN Ltd. at the Ural Federal University. Consultation fields: - Strategic planning and project management methodologies; - The use of evidence-based medicine in the development of medical equipment and technologies.</p> <p>Department of Astronomy and Geodesy of the Ural State University Mathematical methods for processing a large number of inaccurate observations</p>		
Education	Ph.D	Major	Computer Algebra and Celestial Mechanics
		Research field	The use of computer analytical systems for constructing theories of motion of artificial Earth satellites. Research Institute of Applied Mathematics and Mechanics at Tomsk State University.
		Dissertation	The use of computer analytical systems for constructing theories of motion of artificial Earth satellites
	MS	Major	Astronomy and Surveying
		Research field	Mathematical methods for processing a large number of inaccurate observations. Department of Astronomy and Geodesy of the Ural State University.
		Dissertation	Improving the accuracy of observed values by averaging
	BS	Major	Computer science and programming

Code # : UC15

Available term for consultation	No deadlines anytime	Available for trip to Korea	No
Intellectual property Information	Received several patents: for a calcium preparation (OSTEOL-FORTE), a patent for coatings destroying bacteria and viruses without chemicals, a patent for a design for converting solar energy into current and heat with high efficiency		
Category of Research (Choose 1 or more)	BT(Biology Technology), NT(Nano Technology), ET(Environment Technology), ME(Material&Equipment), MP(Manufacturing&Production)		
Available field for cooperation	<p>1. Career Path (Experience) and Consultation</p> <p>1974-1976. Magnitogorsk Iron and Steel Works. Position - engineer of coke production.</p> <p>1976-1978. NII PRIVATE FIRM NIIPROINS (НИИ ЧФ НИИПРОИНС) Security Institute - engineer. I developed a new method for analyzing unstable solutions of titanyl sulfates using frequency-impedance measurements, and confirmed the thermodynamic memory of electrolyte solutions. The theory of supercapacities and methods for their manufacture (> 100F / cc) is proposed. He spoke at a conference of physicists at the opening of the Chelyabinsk University.</p> <p>1979. Magnitogorsk High School. Chemistry teacher.</p> <p>1980. Magnitogorsk Mining and Metallurgical Institute. Engineer of the research sector. Within two months, he decided to increase the resistance to high-strength cord corrosion resistance during stress-freezing for prestressed structures (resistance was 20 minutes, it became more than 600 hours, which was above all requirements), he proposed a model of this phenomenon. The method proposed by me was based only on a change in some technological parameters and the resistance became above all the criteria. The tests took place at the Beloretsk Metallurgical Plant (BMZ). Then, I took up the decision to increase the resistance of multi-roll calibers. He wrote the theory of lubricants for particularly severe lubrication conditions with metal deformation. Developed a new classification of such lubricants. The lubricant that I proposed was tested at the Beloretsk Metallurgical Plant, unexpectedly, the resistance of rolls increased by a factor of thousands (and they even began to make them from hard alloys) - the lubricant allowed us to switch back to ordinary roll steels - ШХ15, X12M.</p> <p>1982. All-Union Research Institute of the Hardware Industry. Engineer. Continued work on lubricants for the hardware industry. Developed a new lubrication principle for a new process.</p> <p>1983. Institute of Metallurgy in the Academy of Sciences of the USSR. Junior Researcher.</p> <p>1984. Institute of Mechanical Engineering. He continued to develop the theory of lubrication and friction, developed the foundations of the model of lifeless friction. He participated in the creation of NTTM.</p> <p>1987. Cooperative EPK Dawn. Vice-chairman. Developed and produced new additives for lifeless friction.</p> <p>1990. Cooperative Engineering and Commercial Center (ICC). Director In this cooperative, only their own projects were developed: sensors for extra-large loads, distributed control systems for managing particularly critical facilities (nuclear power plants, power engineering, etc.) are systems without a master processor. These were ring networks with an extended exchange protocol, which allowed the destruction of individual nodes in this network, other processing points took the burden of processing and management. Have a reliability of over 99%. They started production of their controllers based on the Intel 1852.1851 single-chip processor (which were produced in the USSR) on the personal computer bus.</p> <p>1994. Left Russia and began working in Bulgaria at the Bulgarian Academy of Sciences. He made reports at the Bulgarian Academy of Sciences on the evolution of the genome - on his work, at the invitation of Academician Tsankov. Academician Parmon read my work. He published his works in the Novosibirsk Edition of the Science of Siberia.</p> <p>From 2000 to 2008 he was engaged in chemistry and pharmaceuticals. In 2005, he began the development of drugs with a general effect on the processing of the genome</p>		

in pathologies and other pharmaceutical projects (currently there are more than 15 drugs in the portfolio).
 2011. Establishment of the ASCO PHARM company - the company focused on finalizing the OSTEOL-FORTE calcium preparation project and some other projects. Sales took place in the EU. I am the Deputy Director for Technical Issues.
 2018. The company "ASCO PHARM" wins the acceleration program of business projects of the Ural Federal University.
 2019. The company "ASCO PHARM" combined resources and efforts together with the largest Russian university - the Ural Federal University. Created a joint venture.
 2019. The company "ASCO PHARM" begins the commercialization of the medicine "OSTEOL-FORTE" and expands its development portfolio.

2. Relate Networking: Member of the Academic Council of the Institute. (All-Union Research Institute of the Hardware Industry) - a member of the scientific council.
 At the moment: Scientific expert of the Innovation Development Fund of the Ural Federal University.

Education	Ph.D	Major	Sverdlovsk Institute of Electrochemistry of the Academy of Sciences
		Research field	Thermodynamics and electrochemistry
		Dissertation	Not finished graduate school
	MS	Major	Свердловский Институт Электрохимии Академии Наук УИЦ (Sverdlovsk Institute of Electrochemistry of the Academy of Sciences)
		Research field	Thermodynamics and electrochemistry
		Dissertation	Not finished graduate school
	BS	Major	Magnitogorsk State Technical University G.I. Nosova. (then Mining and Metallurgical Institute named after Nosov (MGMI). Specialty Solid Fuel Chemical Technology

Code # : UC16

Available term for consultation	1week		Available for trip to Korea	Yes
Intellectual property Information	-			
Category of Research (Choose 1 or more)	ME(Material&Equipment), IT(Information Technology), MP(Manufacturing&Production),			
Available field for consulting	<p>1. Career Path (Experience) and Consultation Computer engineering modeling of processes in energy machines. Design optimization and increase of efficiency;</p> <p>2. Relate Networking Carrying out strength calculations by methods of computer modeling of buildings of energy machines and mechanisms, rotors, etc. ; Determination of critical frequencies, fatigue and resource calculations;</p> <p>3. Calculation of building structures; 4. Computer modeling of physical processes: heat transfer, combustion, mass transfer, flow around gaseous and liquid media, etc. 5. Modeling of fracture processes.</p> <p>Basic research, experimentation and development</p> <p>The laboratory "Engineering computer modeling and strength calculations" has its own methods of high-precision computer modeling of physical systems, mechanisms and energy machines; their optimization in order to increase the resource, characteristics and performance indicators. In its work, the laboratory uses the capacities of the Polytechnic supercomputer center, the third largest supercomputer center in Russia, as well as the laboratory's own supercomputer. In its research and development, the laboratory uses both commercial software packages like ANSYS, Numeca, Comsol, IOSO, etc., as well as software products of its own design.</p>			
Education	Ph.D	Major	Computer Science Technical Sciences Peter the Great St. Petersburg Polytechnic University	
		Research field	Computer engineering modeling	
		Dissertation		

Code # : UC17

Available term for consultation	5day	Available for trip to Korea	Yes															
Intellectual property Information	-																	
Category of Research	ME/MP																	
Available field for cooperation	<p>The company "MONOROTOR" produces high-precision screw dispensers - devices that allow high-precision dosing of viscous substances. A feature of these devices is their versatility, in terms of the dosed substance. It can be liquids with any viscosity, from ordinary water to polymer sealants; various loose, powdery materials can be dosed, but in the form of a paste. The device is also convenient from the point of view of automation of dosing processes, application of various viscous materials on complex three-dimensional surfaces or use in robotic systems.</p> <p>Technical specification of the 3D-printing machine for polymer reinforced material. The target technical specification of 3D printer Requirements can be divided into: - production speed; building 50ml per minute. - material requirements; - form requirements; - technological requirements; - reliability requirements;</p> <p>The materials used in the manufacture of the socket must meet the following requirements: Resistant to water, weathering, UV rays; Have high wear resistance; High specific strength, rigidity and toughness; The material should be applicable for 3D printing (high thixotropy, life time less than 30 seconds, high adhesion). Table 1 - Planned characteristics of the material</p> <table border="1" style="width: 100%; border-collapse: collapse; margin-bottom: 10px;"> <thead> <tr> <th style="width: 50%;">Parameter</th> <th style="width: 25%;">Value</th> <th style="width: 25%;">Units</th> </tr> </thead> <tbody> <tr> <td>Tensile strength, not less</td> <td style="text-align: center;">120</td> <td style="text-align: center;">MPa</td> </tr> <tr> <td>Bending strength, not less</td> <td style="text-align: center;">100</td> <td style="text-align: center;">MPa</td> </tr> <tr> <td>Hardness</td> <td style="text-align: center;">40~60</td> <td style="text-align: center;">Shor D</td> </tr> <tr> <td>Density</td> <td style="text-align: center;">500~1100</td> <td style="text-align: center;">kg/m³</td> </tr> </tbody> </table> <p>Workpiece Form Requirements: The shape of the workpiece should correspond to the geometry of the 3D model obtained after processing the stump shape from 3D scanning; Maximum workpiece dimensions: 200x200x300 mm. Reliability Requirements: The properties of the product should not deteriorate over the entire service life (up to 5 years) The product must be operated in daily use.</p>			Parameter	Value	Units	Tensile strength, not less	120	MPa	Bending strength, not less	100	MPa	Hardness	40~60	Shor D	Density	500~1100	kg/m ³
Parameter	Value	Units																
Tensile strength, not less	120	MPa																
Bending strength, not less	100	MPa																
Hardness	40~60	Shor D																
Density	500~1100	kg/m ³																
Education	Ph.D	Major	<p>Red Diplomas of Engineering Technologies, Bauman</p> <p>ART IN METAL: The greatest technological difficulties in the production of a dispenser are caused by the processing of a screw gerotor pair. The technologies of the MONOROTOR company allow to create rotors with mass cross-section diameter of about 4 mm in conditions of mass production. 2018 MULTI DISPENSER - 2: From sketch to industrial design. MONOROTOR company has developed a dual dispenser, which will allow to dose multicomponent substances: "base + hardener" or "base + dye." 2018</p>															
		Research field																

		<p>NEW MATERIAL: Dispensers "Monorotor" have a positive reputation in the testing of dosing chocolate. Dosing startegia allows applying material in the form of tracks, a given thickness, points, complex spatial curves of variable thickness and various three-dimensional objects. 2018</p> <p>TESTS OF DOSERS: In partnership with the Vindek laboratory, tests were carried out of the Monorotor screw dosers. Dispensers showed good repeatability, the identity of the results of dosing of the epoxy compound and withstood the specified volume ratio. 2018</p>
	Dissertation	<p>TECHNOLOGICAL ASSURANCE OF QUALITY FORMING OF CYCLOIDAL SCREW SURFACES DURING PROCESSING BY UNPROFIED TOOL ON MULTIPURPOSE MACHINES</p>
BS	Major	Engineering Technologies

Code # : UC18

Available term for consultation	1week	Available for trip to Korea	Yes
Intellectual property Information	-		
Category of Research (Choose 1 or more)	BT(Biology Technology), IT(Information Technology),		
Available field for consulting	<p>“Development of the technology of ultrasonic venous obliteration with focused ultrasound of high intensity” - stands were created, medical procedures were developed, preclinical tests were performed on animals (mice, rats, rabbits), exposure modes for biological tissues were selected, exposure efficacy and safety for surrounding tissues were checked, medical -technical requirements for the development of medical equipment.</p> <p>“Creation of a high-tech production of a multifunctional medical complex for ultrasound diagnostics and therapy of neoplasms of the mammary and thyroid glands” - the goal of the work is the production of serial products for the prevention and treatment of cancer with the latest methods of non-invasive effects on neoplasms of the mammary and thyroid glands.</p> <p>Targeted delivery and activation of nanocapsules - work on ultrasound remote opening of microcapsules: opening the capsule shell and releasing the drug at the desired point in the body. The addition of technology for targeted delivery of nanocapsules to the ablation site and activation by their capabilities of the complex improves the main result of the force effect on neoplasms.</p> <p>Development of ultrasonic diagnostic devices - a high-class ultrasonic diagnostic scanner is being developed on the basis of the budget class ETKS-DM-04 Ultrascan device.</p> <p>A device for stopping bleeding during gunshot wounds of the extremities is a solution to the problem of stopping bleeding in the field using a combination of diagnostic and thermal (power) methods.</p> <p>The activities of the laboratory "Medical Ultrasound Equipment" are aimed at the development of diagnostic and therapeutic technologies, as well as their combination - the creation of hardware and software systems for the automation of surgical operations.</p> <p>The complex under development consists of diagnostic and therapeutic modules (combined ultrasound scanner with ultrasonic emitter for ultrasonic focused ablation), it will be able to control guidance, provide focusing of high-intensity ultrasound, perform ablation and visualize the results of ultrasound exposure on the affected tissue sites.</p> <p>Currently, ultrasound methods are used in almost all areas of medical practice and are among the most important modern methods of diagnosis and treatment. Ultrasound of low power is sufficient for diagnosis, and high-intensity focused ultrasound (the internationally accepted abbreviation HIFU, high-intensity focused ultrasound) is required for exposure to tissues and blood vessels.</p> <p>HIFU therapy is a rapidly developing technology that quickly covers new areas of application in medicine, due to its high efficiency, the absence of side effects and low cost of the procedure compared to radiation therapy and chemotherapy. In some cases, HIFU therapy is the only treatment that can save the patient's life.</p>		

High Intensity Ultrasound (HIFU) has emerged as a new clinical method for non-invasive local targeted treatment of tumors. Ablation is the process of removing or destroying (cauterizing) a certain part of the totality of biological tissues, in a sense an analogue of surgical removal. Developments have appeared in the world that combine both exposure and control using only ultrasound.

Education	Ph.D	Major	Physics Peter the Great St. Petersburg Polytechnic University
		Research field	Biomedical Engineering
		Dissertation	-

Code # : UC19

Available term for consultation	1week	Available for trip to Korea	Yes
Intellectual property Information	-		
Category of Research (Choose 1 or more)	ME(Material&Equipment), NT(Nano Technology), MP(Manufacturing&Production),		
Available field for consulting	<p>Study of metallic materials and welded joints in relation to their operating conditions Modeling of metallurgical processes, structure and properties of metallic materials</p> <ul style="list-style-type: none"> • research on crack resistance, static tension and fatigue of the base metal and the metal of welded joints of a large standard size series of pipes • qualification testing of welded pipe joints for the Sakhalin-1 project • acceptance, qualification, acceptance, and periodic tests of a large size range of bellows expansion joints and seals • conducting mechanical and metallographic tests of welded joints in order to certify technical personnel and approve welding processes • metallographic studies of control welded samples with defects of various types, types, orientations, sizes characteristic of mechanized welding technologies during the construction of subsea field pipelines of the Kirinskoye gas condensate field facility <p>Basic research, experimentation and development scientific and technical substantiation of the projects: - construction of subsea production pipelines of the “Kirinskoye field development” project by the Victoria-Nebula and Fortuna pipe-laying vessels in the amount necessary for an engineering assessment in accordance with the requirements of STO Gazprom 2-3.7-050-2006 (DNV-OS-F101); - construction of the offshore section of the Dzhubga-Lazarevskoye-Sochi gas pipeline by the C-Master and Bigfoot pipe-laying vessels; - the construction of an underwater passage through the Nevelsky Strait of the Sakhalin-Khabarovsk-Vladivostok MG by the Victoria and Fortuna pipe-laying vessels;</p>		
Education	Ph.D	Major	Material Sciece SpbSTU
		Research field	metallic materials & structure
		Dissertation	-

Code # : UC20

Available term for consultation	5day		Available for trip to Korea	Yes
Intellectual property Information	Patent No. 2046843 for the invention "Method for producing polycrystalline zinc selenide"			
Category of Research	ME/NT/ETC(chemical)			
Available field for cooperation	<p>The company has developed the scientific foundations and methods for producing a number of high-purity optical materials with extremely low optical losses, polycrystalline zinc selenide for power optics of the mid-IR range.</p> <p>The dissertation on “Obtaining High-Purity Zinc Selenide for IR Optics” was defended at the Institute of Chemistry of High-Purity Substances of the Russian Academy of Sciences in 2000.</p> <p>The manufactured experimental batches of optical samples of zinc selenide were tested on technological laser systems with a power of up to 7 kW. Testing of samples was carried out in leading domestic and foreign laser centers:</p> <ul style="list-style-type: none"> - Institute of General Physics RAS, Moscow; - Center for Technological Lasers RAS, Shatura; - Laser Center Mr. Hanover, Germany; - State University of Stuttgart, Germany; <p>as well as in the laboratory of the company "II - VI Inc." - A leading global manufacturer of CVD-ZnSe, has confirmed the high quality of the material and the possibility of its application in high-power pulsed and continuous lasers. By their characteristics, the samples obtained are not inferior to foreign counterparts.</p> <p>In 2006, INTELLEKTUAL'NYE SISTEMY NN LLC was founded by specialists of the Institute of Chemistry of High-Purity Substances of the Russian Academy of Sciences</p> <p>In 2014, the company completed the construction of a new installation and became the only company outside the United States that has the technological ability to produce laser-grade zinc selenide.</p> <p>Since 2006, OOO INTELLEKTUAL'NYE SISTEMY NN has been supplying zinc selenide products to 13 countries. Among our regular customers are: American photonics, Dorotek, LightPath Technologies, Interspectrum OU.</p>			
Education	Ph.D	Major	Doctor of Chemistry, Member of the Scientific Council on High-Purity Chemistry	
		Research field	<ol style="list-style-type: none"> 1. Optical properties of high purity zinc selenide. High purity substances. 1989. 2. The mechanism of deposition of zinc selenide in the Zn + H₂Se + Ar system. High purity substances. 1990. 3. Preparation of high-purity ZnSe crystals for power 1R - optics. International Symposium MASHTEC-90. Dresden. 1990. 4. Passive optics from ZnSe for high-power CO₂-laser. VI National Conference Technic. Exhibition with International. Part. "Laser and their applications". Plovdiv. 1990. 5. The study of volumetric inhomogeneities in polycrystalline zinc selenide obtained by chemical vapor deposition. High purity substances. 1993. 6. Nuclear-physical methods for the analysis of materials based on ZnSe. Sat "Detection of ionizing radiation." Yekaterinburg .: USTU. 1996 	
		Dissertation	"Obtaining high-purity zinc selenide for IR optics" was defended at the Institute of High-Purity Chemistry of the Russian Academy of Sciences in 2000.	

Code # : UC21

Available term for consultation	1week	Available for trip to Korea	Yes
Intellectual property Information	-		
Category of Research (Choose 1 or more)	ME(Material&Equipment), NT(Nano Technology), MP(Manufacturing&Production),		
Available field for consulting	<p>1. Development of the design and general principles for controlling an integrated electrolysis unit for the simultaneous production of anolyte for disinfection of water and ferrate for disinfection of effluents</p> <p>2. Creation and testing of energy-efficient mobile drives of sucker rod pumps (SHG) with an adaptive group control system for oil wells</p> <p>Basic research, experimentation and development</p> <p>1. Development of a new method and technical solution for a prototype integrated electrolysis unit (KEA) for the simultaneous production of anolyte for disinfection of water and ferrates for disinfection of effluents, which allows to increase the environmental safety, productivity and quality of disinfection of water and effluents while reducing the cost of the process compared to existing technologies .</p> <p>Tasks to be solved:</p> <ul style="list-style-type: none"> - development of the concept of producing anolyte and ferrates by electrolysis in a single KEA; - development of the structure and technological scheme of KEA, the control system and the functioning algorithm of KEA; - development and research of prototype modules for the production of anolyte and ferrate and KEA control system; - Development and testing of a CEA performance management program; - development and research of the laboratory apparatus KEA, programs and methods of its experimental research; - development and testing of a prototype installation of KEA, a program and methods for its testing in an industrial partner; - development of a draft technical task for the ROC "Creation of an integrated electrolysis unit with a given capacity for the production of disinfecting agents for water and effluents". <p>Scientific and technical result:</p> <p>The KEA laboratory unit allows producing up to 65 g / h of chlorine (up to 1.56 kg / day) at an energy consumption of up to 3.5 kWh / kg of chlorine and up to 25 g / h of ferrate (up to 600 g / day) at an energy consumption of up to 6 kWh / kg of ferrate, which allows disinfecting up to 20,000 l / h of drinking water (based on up to 3.5 mg / l) and up to 10,000 l / hour of wastewater (based on up to 2.5 mg / l).</p> <p>The prototype installation of industrial KEA allows producing up to 1040 g / h of chlorine (up to 25 kg / day) with energy consumption of up to 3.5 kWh / kg of chlorine and up to 420 g / h of ferrate (up to 10 kg / day) with energy consumption of up to 6 kWh / kg of ferrate, which allows disinfecting up to 320 cubic meters per hour of drinking water (up to 3.5 mg / l) and up to 160 cubic meters per hour of wastewater (up to 2.5 mg / l).</p> <p>2. Development of principles for managing a group of drives and experimental samples of groups of 2 and 6 energy-efficient domestic mobile drives of sucker-rod pumps with a single adaptive control system, which will simultaneously manage several drives of sucker-rod pumps (SHG) at the same time and minimize capital, operational system costs and energy compared to single drives with individual control systems.</p> <p>The main tasks are the creation of an improved design of the SHGN drive and group adaptive control systems for the group of drives of "wells" of nearby wells in order to increase energy efficiency and reduce the cost of group water in comparison with single drives with individual self-propelled guns. In terms of their technical</p>		

characteristics and functional capabilities, the group drives under development will not be inferior to the best domestic and foreign analogues, but should surpass them in energy efficiency and economy in terms of capital and operating costs.

Scientific and technical result:
 Software for a single adaptive self-propelled guns, managing a group of 2 and 6 drives operating in asynchronous mode.

An experimental sample of a group of 2 SHGN drives with a single adaptive self-propelled guns (1 pc.) For research tests at idle, with load simulation and full-scale tests by an industrial partner at the well, consisting of:

- experimental samples of single mobile drives SHGN in the amount of 2 pieces;
- an experimental model of a single adaptive self-propelled guns, managing a group of 2 drives operating in asynchronous mode;
- software for a single adaptive self-propelled guns.

An experimental sample of a group of 6 SHGN drives with a single adaptive self-propelled guns (2 pcs.) For research tests at idle, with simulated load (1 pc.) And full-scale tests by an industrial partner at the well (1 pc.), Consisting of:

- experimental samples of single mobile drives SHGN in the amount of 6 pieces;
- An experimental model of a single adaptive self-propelled guns, managing a group of 6 drives operating in asynchronous mode;
- software for a single adaptive self-propelled guns.

Education	Ph.D	Major	Mechatronic Engineering SpbSTU
		Research field	Mechanics, Equipment, Material
		Dissertation	-

Code # : UC22

Available term for consultation	1week	Available for trip to Korea	Yes
Intellectual property Information	-		
Category of Research (Choose 1 or more)	ME(Material&Equipment), NT(Nano Technology)		
Available field for consulting	<p>development and research of polymer composite materials for various industries; development of polymeric materials (adhesives, sealants, compounds, a binder for polymer composite materials, materials for 3D printing) with a given level of properties in accordance with customer requirements; study of polymeric materials in order to determine mechanical characteristics (hardness, compressive strength, tensile strength, elongation in tension, residual deformation, elastic modulus in compression and tension, tensile strength, peeling, peeling, delamination, etc.), dielectric characteristics (specific volume resistance, specific surface resistance, dielectric constant, dielectric loss tangent), thermal characteristics (thermal conductivity, heat mcost), rheological properties (apparent Brookfield viscosity, relative viscosity OT-246); conducting accelerated climatic tests of materials in order to guarantee the persistence of properties for a given time during operation under certain conditions; selection of polymeric materials for certain tasks in the design of products; development of technology for the use of adhesives of own production and production of third-party organizations: surface treatment of the substrate, preparation of adhesive, application, development of optimal curing modes, quality control of the compound; design of adhesive joints when creating new products.</p> <p>Projects performed by the laboratory team in recent years: Heat-resistant adhesive with a maximum operating temperature of 1000 C (oxidizing medium); Heat-resistant adhesive with a maximum operating temperature of 2000 C (in an inert gas environment); The technology of surface treatment of carbon fibers to create carbon plastics with high strength characteristics; A series of epoxy compounds with a reduced level of water absorption; Highly conductive paste for creating groove seal materials in high power generators for power plants; Binder for fiberglass with increased impact resistance.</p>		
Education	Ph.D	Major	Chemistry Engineering SpbSTU
		Research field	polymer composite materials
		Dissertation	-

Code # : UC23

Available term for consultation	1week	Available for trip to Korea	Yes
Intellectual property Information	-		
Category of Research (Choose 1 or more)	ME(Material&Equipment),		
Available field for consulting	<p>Development of technology for growing thin and thick films of III – V materials; Development of technologies for separating GaN films from a growth substrate using laser radiation. Modeling LED structures; Light Extraction; Current spreading; Heat removal (Thermal management); Characterization of LED structures; Uncomplicated technology for the production of LEDs on the GaN-on-GaN platform (RF Patent No. 2469433, RF Patent No. 2459691); Fabrication of mother GaN crystals for a seamless technology for the production of LEDs on the GaN-on-GaN platform.</p> <p>The scientific team of the laboratory developed and optimized for mass production the original LED chips based on CART (Charge Asymmetric Resonance Tunneling, Patent GB 2352326a) LED structures. CART LED chips and structures served as the basis for the mass production of super-bright blue and white LEDs.</p> <p>"Method for separating the surface layer of a semiconductor crystal", RF Patent No. 2459691. "A method for laser separation of an epitaxial film or layer of an epitaxial film from a growth substrate of an epitaxial semiconductor structure", RF Patent No. 2469433 "Chemical vapor deposition reactor", United States Patent US7011711. "Light-emitting device with heterophase boundaries", RF Patent No. 2434315. "Light-emitting device with heterophase boundaries", United States Patent Application 20130009152. "A method of manufacturing a semiconductor device structures based on the cloning of the original substrates (options)", RF Patent No. 2546858. "A method of growing an epitaxial film of the nitride of the third group on a growth substrate", RF Patent No. 2543212. "A method of growing epitaxial layers of semiconductor crystals of nitrides of the third group on a layered crystalline structure", RF Patent No. 2543215.</p>		
Education	Ph.D	Major	Physical and mathematical sciences SpbSTU
		Research field	GaN LEDs on GaN Substrates
		Dissertation	-

Code # : UC24

Available term for consultation	1week	Available for trip to Korea	Yes
Intellectual property Information	-		
Category of Research (Choose 1 or more)	BT(Biology Technology), ET(Environment Technology),		
Available field for consulting	<p>Study of the influence of environmental conditions on the growth of microalgae and duckweed; Development of an effective method for collecting biomass; Evaluation of various cell disruption methods to improve the recovery of valuable components; Development of a method for the extraction of valuable products for the food industry and the production of fortified animal feed; Conversion of biomass residues into valuable by-products, such as sorbents; Generation of heat and electricity from residual biomass by anaerobic digestion; Closed CO2 cycle and nutrient processing in bio-treatment; Environmental impact assessment of the whole process.</p> <p>Key project: The scientific and research activities of the laboratory are based on the development of the concept of a bioprocessing plant from aquatic biomass for the production of valuable components of by-products, as well as the production of CO2-neutral energy (Together with the University of Technology of Hamburg).</p> <p>As a result of the project, technologies should be developed for the production of valuable products with high added value (sum of lipids, carotenoids, pigments and pectin substances), sorption materials and energy from the biomass of microalgae <i>Chlorella sorokiniana</i> and <i>Lemna minor</i> duckweed for the agro-industrial complex and various industries (machine and instrument making, chemical, food, etc.). Sorption materials from the residual biomass of <i>Chlorella sorokiniana</i> and duckweed <i>Lemna minor</i> will be obtained for the first time.</p> <p>As a result of the project will be:</p> <p>optimal conditions and conditions for high-speed biomass synthesis of microalgae <i>Chlorella sorokiniana</i> and duckweed <i>Lemna minor</i> have been worked out. Cost-effective methods have been developed for the extraction of valuable products with high added value, including lipids, carotenoids, pigments and pectin substances from the resulting biomass. sorbents were obtained and used from residual biomass for wastewater treatment from heavy metal ions. optimal conditions for the use of anaerobic digestion of residual biomass were selected in order to obtain the maximum amount of biogas.</p>		
Education	Ph.D	Major	Bio-sciences SpbSTU
		Research field	Bio-Gas
		Dissertation	-

Code # : UC25

Available term for consultation	1week	Available for trip to Korea	Yes
Intellectual property Information	-		
Category of Research (Choose 1 or more)	ME(Material&Equipment), MP(Manufacturing&Production),		
Available field for consulting	<p># Basic research, experimentation and development</p> <p>Developed and defended "Methodology for designing hydraulic lifting mechanisms" Patents received: Patent for the invention "Stand for testing hydraulic machines volumetric hydraulic drive." Utility model patent "Power unit of the top drive system".</p> <p>Participation in the design work and the manufacture of hydraulic equipment for hydraulic drives of promising developments of new equipment for projects over the past 5 years: Hydraulic system of emergency operation gate for two cameras of the Tchaikovsky lock. The hydraulic actuator of the progressive movement of the filling / emptying valves for the two cameras of the Tchaikovsky lock. Hydraulic double leaf gate. Theatrical scissor lift. Pumping units for crane drives. Modernization of hydraulic drives of drilling rigs.</p> <p>A federal target program is being implemented in the priority area of "Rational Environmental Management" within the framework of the event 1.3 of the federal target program "Research and Development in Priority Areas of Development of the Scientific and Technological Complex of Russia for 2014-2020". Agreement No. 14.577.21.0054 dated 06/05/2014. Subject: "Creating an economical top electric drive for mobile drilling rigs." Supervisor Doctor of Technical Sciences, Professor TTS IMM & T A. Ashcheulov</p> <p>Development, design and pilot production of innovative hydraulic and other drives, including:</p> <ul style="list-style-type: none"> - systematization of design and design algorithms for CAD; - predictability; - simulation in real time; - monitoring - as a feedback system with the design phase; - economic feasibility of technical solutions, risk calculations; - detailed design; - pilot production; - commissioning as part of the facility 		
Education	Ph.D	Major	Mechanics SpbSTU
		Research field	Mechanics
		Dissertation	-

Code # : UC26

Available term for consultation	1week	Available for trip to Korea	Yes
Intellectual property Information	-		
Category of Research (Choose 1 or more)	NT(Nano Technology), ME(Material&Equipment),		
Available field for consulting	<p>Modification of the surface properties of materials by beams of accelerated atomic and cluster ions in the energy range 15 - 350 keV; Studies of processes during the irradiation of semiconductors and thin films with molecular and heavy ions; Rutherford backscattering analysis of fast helium ions (RBS & RBS / C analysis): depth distribution of heavy impurity atoms in a substance, depth distribution of structural defects in single crystals, composition and thickness of thin films on the surface; Modification of materials by electron beams with energies of 10 - 50 keV; Study of the role of electron irradiation in the creation of nanoclusters and nanoparticles in glasses and optical crystals containing ions of various metals; Studies of the influence of the conditions of creation and subsequent thermal and ionic effects on the properties of thin carbon films; Analysis of surface topography using atomic force scanning microscopy.</p> <p>Key laboratory projects: Investigation of nonlinear processes in the surface layers of semiconductors upon irradiation with molecular ions Joint Russian-Finnish project "The effect of irradiation with nanoclusters on the optical properties of gallium nitride and zinc oxide, ENIGAZ" (2010-2016) Defect engineering in the technology of silicon light-emitting structures based on the implantation of heavy atom ions and small clusters, (2014-2016) A series of studies on the influence of the parameters of the plasma-chemical deposition process on the properties of diamond-like carbon films Synthesis of highly conductive nanowires in metal-doped diamond-like carbon films by irradiation with fast heavy ions. (2013–2014) Creation and research of nanostructured carbon films with electrically active impurity centers. (2012-2014)</p> <p>Along with studies of emission phenomena during irradiation with ions of solids, the laboratory widely studies the laws of ion implantation and radiation damage to semiconductors during ion implantation. In addition, studies of the interaction of electron beams with semiconductors and dielectrics, in particular, the formation of plasmonic metal nanoparticles in various matrices, are being carried out on a wide front.</p>		
Education	Ph.D	Major	Material sciences SpbSTU
		Research field	Material sciences
		Dissertation	-

Code # : UC27

Available term for consultation	1week	Available for trip to Korea	Yes
Intellectual property Information	-		
Category of Research (Choose 1 or more)	NT(Nano Technology), ME(Material&Equipment),		
Available field for consulting	<ul style="list-style-type: none"> - Electrochemical studies, including the construction of polarization curves, determining the nature of potential changes over time, conducting studies on a rotating disk electrode; - Assessment of the corrosion properties of materials under conditions simulating operational conditions, including at elevated temperature and pressure, in aggressive gas-saturated environments; - Development of techniques and bench equipment for testing simulating non-standard conditions of material operation, close to real; - Comparative studies of the erosion and corrosion-erosion properties of materials and coatings used in oilfield equipment; - Studies of hydrogen sulfide and carbon dioxide corrosion; - Tribological testing; - Analysis of the causes of destruction of the equipment material; - Metallographic, fractographic studies; - Development of recommendations for the selection of material for oil and gas equipment; - Development of recommendations for protecting the material from exposure to aggressive environments; - Conducting standard corrosion tests for general corrosion, intergranular corrosion, corrosion cracking, fatigue corrosion testing, hydrogen cracking; - Conducting research and development work in the field of materials science with the aim of extending the life of the equipment. <p># Basic research, experimentation and development</p> <ul style="list-style-type: none"> - Justification for the use of large diameter pipes made of 09G2S steel as supporting structures of the bridge, in the aggressive environment of the Sea of Azov. - Justification of the thickness of the zinc coating for corrosion protection of road fences under the project "Construction of a transport crossing over the Kerch Strait. - Analysis of the causes of the destruction of field pipes of various fields of PJSC Gazpromneft - Analysis of the causes of failures and development of recommendations to improve the reliability and operability of field pipes of the Vankor field, Rosneft Oil Company - Development of the methodology and non-standard autoclave tests, under conditions close to real, to study the performance of the new TMK-S alloy for the production of casing pipes used at the Usinskoye field of PJSC Lukoil - Testing for certification of pipe products under the Nord Stream, Turkish Stream project - Development of methods and bench equipment for physical modeling of the friction process of the drill and casing pipe to study the properties of the material in the pipe contact zone. - Development of a program of non-standard accelerated corrosion tests to assess the properties of a corrosion-resistant steel grade developed by the Severkor project - Conducting standard corrosion tests for metallurgical, engineering companies to certify the material. - Analysis of the causes of destruction of material in downhole equipment for Weatherford - Analysis of the causes of destruction of pump shafts for Schlumberger - Drill pipe quality study for offshore projects Gazpromneft-Shelf 		

- The study of the mechanisms of corrosion cracking in hydrogen sulfide environments, as well as the study of steels of different strength levels, chemical composition, corrosion resistance to this type of fracture.
- Making Nitrogen Steel
- Development of methods and tests of downhole filters

Education	Ph.D	Major	Mechanical sciences SpbSTU
		Research field	Electrochemical & Mechanical structure
		Dissertation	

Code # : UC28

Available term for consultation	1week	Available for trip to Korea	Yes
Intellectual property Information	-		
Category of Research (Choose 1 or more)	IT(Information Technology), NT(Nano Technology),		
Available field for consulting	<p>Description The development of modern engineering and technology is inextricably linked with the search for new sources of electrical energy, including those with the so-called "green" energy. An important area in this area is the development of energy harvesting devices (Energy Harvesters). In conditions of energy saving, the development of such devices for the autonomous power supply of electrical and electronic systems is an urgent task. One of the promising types of energy-collecting devices based on the conversion into "useful" energy of energy arising from a temperature difference between a heat source and a medium is a thermoelectric generator (TEG). Thermoelectric generators are used as primary (autonomous) power sources in many practical applications with the required power from units of mW to units of W. TEGs are widely used in power supply circuits for monitoring engines, biomedical equipment, etc. A special factor contributing to the development of TEG technology is the introduction of microelectromechanical systems (MEMS).</p> <p>Scientific and practical relevance Considering the manufacturing features, TEG based on MEMS technology is defined as the structure of ordered regions of a material with a given composition and geometry, created on the surface of a solid body in the form of submicron-sized systems whose static properties ensure the implementation of generation, conversion and energy transfer processes. TEG based on MEMS technology provides at a temperature difference of tens of degrees an output power of several mW at an output voltage of several volts. The aim of this project is to develop and manufacture a thermoelectric generator, including designing and modeling the structure of a thermoelectric generator by numerical methods for solving the optimization problem by the criterion of maximizing output power, developing a technological route for the microelectronic production of thermoelectric generators, and manufacturing a pilot batch of thermoelectric generators based on MEMS technology.</p> <p>Summary of Results The result of the project is the technology of microelectronic production of thermoelectric generators based on MEMS technologies, namely: development of the semiconductor structure of thermoelectric generators based on MEMS, research of achievable parameters (output power, optimal current and voltage modes, temperature range); technological route of microelectronic production of thermoelectric generators based on MEMS; experimental batch of thermoelectric generators. The expected results will be achieved in the Russian Federation for the first time and will correspond to the world level.</p>		
Education	Ph.D	Major	Electronics
		Research field	microelectronic
		Dissertation	Sensor networks for wireless systems for monitoring and collecting data on the technical condition of engines

Code # : UC29

Available term for consultation	1week	Available for trip to Korea	Yes
Intellectual property Information	-		
Category of Research (Choose 1 or more)	NT(Nano Technology), ME(Material&Equipment),		
Available field for consulting	<p>The scientific and educational center carries out the following activities: Certification and diagnostics of materials at low temperatures (up to 4 K) and strong magnetic fields (up to 9.5 T), including structural studies, including at the mesoscale, Investigation of the dynamics (both phonon and relaxation) of materials and their changes at low temperatures; The study of microcracks at low temperatures and in strong magnetic fields; Study of ferroelectric and magnetic domain structures and their temperature evolution; Creation and research of self-organized nanostructured materials for electronic equipment</p> <p>The main objects are perovskite-like compounds with non-isovalent substitution, in which systems of chemically ordered and polar nano-regions are formed. In such systems, due to the formation of polar nano-regions, it is possible to achieve, in particular, the efficiency of electromechanical energy conversion, which is an order of magnitude higher than for spatially homogeneous materials. The laboratory conducts a comprehensive study of such structures using a combination of methods of probe microscopy and neutron scattering and x-ray (synchrotron) radiation. Creation and research of artificial nanocomposite structures based on dielectric porous matrices</p> <p>In this case, technologies are used to create large volumes of nanostructured materials with controlled spatial characteristics. Particular emphasis is placed on ferroelectric and magnetic nanocomposites. The studies of such materials allowed us to come closer to solving a number of important applied problems. Thus, approaches were developed to overcome the superparamagnetic limit, which can serve as the basis for the creation of new-generation magnetic information carriers. An analysis of the behavior of order-disorder ferroelectrics under conditions of limited geometry made it possible to create a highly efficient nanocomposite material for small-sized capacitors, which is confirmed by RF patent RU 75784 of 08.20.2008. Based on its own experimental base, the REC has the ability to conduct research on materials:</p> <p>By methods of impedance spectroscopy (conductivity, dielectric response) in the frequency range 106 Hz - 109 Hz in the temperature range 3.5 K - 1500 K, including in the temperature range 3.5 K - 300 K in magnetic fields up to 9 T. Methods of probe microscopy in the temperature range 3.5 K - 300 K in magnetic fields up to 9.5 T. By the method of neutron diffraction, X-ray (synchrotron) radiation diffraction (including on the basis of Russian and International Collective Use Centers) of the crystal and magnetic structure of materials.</p> <p>Projects: Since its inception, the laboratory exists on a self-financing basis. 90% of employees are on extrabudgetary rates introduced with funds from scientific grants. All laboratory staff take part in collective and individual applications for grant competitions.</p> <p>"Structure and properties of self-organized and composite mesostructured ferro- and piezoelectrics and multifunctional materials" (RNF, 2014 - 2016) Evaluation of modern landscape transformations based on data on the transformation of rocks and soils: mineralogy, geochemistry, geography "(RFBR - South Africa, 2014 - 2015)</p>		

"Theoretical and experimental studies of the physical effects of the deformation nature in ferroid films and heterostructures" (RFBR, 2016 - 2017)
 Development and characterization of new materials for capacitor-type energy storage devices (RFBR - India, 2017-2018)
 The interaction of the order parameters in nanoscale materials as the basis for new electro-acoustic and magnetoelectric materials (State task, 2017-2019)
 Mechanisms of the influence of external electromechanical influences on the structure and functional properties of active ferroid materials (State task, 2017-2019)
 Development of a new approach to the design and implementation of a unique avalanche switch to increase the accuracy of optical radars (SPbPU, Leibniz University of Hanover (Germany), University of Oulu (Finland))
 "The mechanism of charge generation at the TiO₂ — n-Si heterojunction under the influence of gold nanoparticles" (SPbPU Leibniz, University of Hanover, Ioffe Institute of Physics and Technology)

Education	Ph.D	Major	Material sciences SpbSTU
		Research field	Material sciences
		Dissertation	-

Code # : UC30

Available term for consultation	1week	Available for trip to Korea	Yes
Intellectual property Information	-		
Category of Research (Choose 1 or more)	NT(Nano Technology), ME(Material&Equipment),		
Available field for consulting	<p>«Monitoring and Forecasting the State of Radioactive Waste Storage Area in Nizhniy Novgorod Region and Development of the Safety Precautions to Prevent Radionuclides Penetration into the Environment»</p> <p>«Photo-electric and Luminescence Diagnosis of Ferro-Magnetic Semiconducting GaAs-nanostructures»</p> <p>«New Theoretical Approaches Development in Diagnosis, Analysis and Protection of Industrial and Civil Microbiologically Damaged Buildings and Constructions»</p> <p>«Development of Nanomodified Polyurethane-based Composition with Improved Light-Reflecting Properties and Durability for Road Marking Paint»</p> <p>«Development of Polyfunctional Nanomodified Composites for the Movement Joint Repair in the Bridges Constructions»</p> <p>«Scientific and Technological Basis of Large-scale Metallurgy Dust Waste Reprocessing to the Building Industry Pigment»</p> <p>«Development of the Center "New materials and Resource Saving Technologies" to Improve the Ecology, Resource and Energy Efficiency of Current Industry Production»</p> <p>«Chemical Raw Materials Modification with Vortex Reactors»</p> <p>«High tech Production Development Based on Innovative Deep Processing of the Wood Industry Liquid Wastes »</p> <p>«High tech Production Development Based on Bio Glycerin Innovative Complex Processing»</p> <p>«High tech Production Development of Non-Carcinogenic Oils-Plasticizers for Tires, Rubbers and Plastics Based on Innovative Petroleum Industry Wastes Processing»</p>		
Education	Ph.D	Major	Chemical sciences SpbSTU
		Research field	Material & Chemistry
		Dissertation	-

Code # : UC31

Available term for consultation	Free by appointment	Available for trip to Korea	Yes
Intellectual property Information	1. Desublimation device No. 2011128135/05(041734) filing date 07/07/2011 2. Method of susceptibility adding to dyes for metallized polymeric products No. 2011124996/02(036910) filing date 17.06.2011 3. Desublimation device No. 2011128135/20(034415) filing date 6/8/2011 Category of Research		
Category of Research (Choose 1 or more)	NT(Nano Technology)		
Available field for consulting	<p>Career (Experience)</p> <p>1. 10/2019 – until now Chief Executive Officer of the Center of Nanotechnology and Nanomaterials of the Republic of Mordovia LLC (CNNRM) Description: CNNRM is a member of a network of nanotechnology centers (nanocenters) established with a direct participation of the Rosnano Fund for Infrastructure and Educational Programs in the Russian Federation. The network includes 13 nanocenters that provide establishment and development of material base startups. Regarding CNNRM I could provide to applicants consultation service in wide range of technological fields. It is possible to use the network of nanotechnology centers in terms of how some technology can be implemented to different types of production cycles.</p> <p>2. 02/2015 – until now “Technological Company “Liquid-phase Nanocomposites and Fluoropolymers” LLC General Director (Project of Nanotechnology and Nanomaterials of the Republic of Mordovia LLC) Description: As a CEO of the company I have an opportunity to provide appropriate expertise in the fields of industrial coatings, functional additives technology (nanotubes, nano-sized fluorine polymers) for paints, thermosets, and different types of plastics.</p> <p>3. 06/2016 – 10/2019 Deputy Director, Director of the Project Office of the Center of Nanotechnology and Nanomaterials of the Republic of Mordovia LLC 03/2015– 06/2016 “Center of Nanotechnology and Nanomaterials of the Republic of Mordovia” LLC — Project Manager 06/2014 – 02/2015 Investment Manager (Tomsk Center of nanotechnology Rosnano Group of Companies “SYGMA.Tomsk” LLC) 03/2013 – 06/2014 Project office senior analyst (Tomsk center of nanotechnology Rosnano of the Group of Companies “SYGMA.Tomsk” LLC) Description: 8-years of experience in the field of technological startups building and launching process helping applicants to get expertise and consultations. Consultation fields Project management issues: - Consulting service of Strategic business planning, technology market place. - Financial analysis of projects - Technology condition and readiness to transfer - Adjustment of project documentation to make it suitable for investor’s comprehension. - Ability to arrange meetings with potential technology consumers, experts, investors ect. Technology issues: - Industrial coatings, paints mainly with anti-ice, hydrophobic, high corrosion resistant, antistatic properties. - Functional additives (carbon nanotubes, fluorine containing materials) for different fields of materials - Printed electronic field. Conductive pastes, adhesives, protective coatings.</p>		

4. Relate Networking
 - Member of nanotechnology centers (nanocenters) established with direct participation of the Rosnano Fund for Infrastructure and Educational Programs in the Russian Federation.

5. Expected effect
 - Applicants can get the methodologies how they can logically prepare proposal for the government grant program.
 - Improve product quality and manufacturing by functional additives
 - Reduce loss and cost saving thru process optimization
 - Common work

Education	MS	Major	Nanomaterials
		Research field	Direct fluorination, fluorine containing products, industrial hydrophobic coatings
		Dissertation	Modification of Ultra-High Molecular Weight Polyethylene

Code # : UC32

Available term for consultation	1 week	Available for trip to Korea	Yes
Intellectual property Information	-		
Category of Research (Choose 1 or more)	ME(Material&Equipment),		
Available field for consulting	<p>- Development of advanced technologies for producing complex-shaped parts by selective laser melting;</p> <p>- Development of methods for producing powder materials for additive technologies; Creation of promising cathode materials for lithium-ion batteries</p> <p>Basic research, experimentation and development</p> <p>In 2014, at the request of Klimov OJSC, in the laboratory for the first time in the Russian Federation using additive technologies from titanium powders, prototypes of the bearings of a promising helicopter engine were made.</p> <p>For the first time in the Russian Federation, using the additive technologies of titanium and nickel powders, prototypes of a turbine blade and an air flow swirl were made as part of a project with FSUE VIAM.</p> <p>In 2015, together with the Research Institute of Traumatology and Orthopedics. Harmful for the first time in the Russian Federation using additive technologies to produce a hip joint prosthesis of an individual design made of titanium alloy. Based on the computed tomography of the patient's pelvis, a 3D model of bones was formed that exactly coincided in size and shape with the bones of the patient's pelvis. According to the prepared data, a three-flange individual acetabular system was manufactured at the SLM280 selective laser melting unit from domestic titanium powder.</p> <p>In the framework of interaction with RSC Energia, the laboratory carried out research on the development of technology for manufacturing the inner shell of the combustion chamber of a promising liquid rocket engine from heat-resistant copper alloy. The design is a complex product with many internal channels of complex geometry. Within a few days using the selective laser melting technology, the final product was obtained in accordance with a computer model, while the production of a similar product by traditional methods took months. The control of geometric dimensions showed that the errors in the manufacture of internal channels were not more than 50 microns, and the total overall dimensions were not more than 200 microns.</p> <p>A mechanochemical technology has been developed for doping $\text{Li}_2\text{FeSi}_{1-y}(\text{Vy})\text{O}_4$ with manganese, which allows achieving 100% yield of $\text{Li}_2\text{Fe}_{1-x}(\text{Mnx})\text{Si}_{1-y}(\text{Vy})\text{O}_4$.</p> <p>Technological modes and parameters of obtaining nanocomposite material $\text{Li}_2\text{Fe}_{1-x}(\text{Mnx})\text{Si}_{1-y}(\text{Vy})\text{O}_4 + \text{C}$ are determined, which ensure the specific capacity of a lithium-ion battery of more than 190 mAh / g at a potential difference of 2-4.7V.</p> <p>A technology has been developed for producing magnetically hard material of the Sm-Fe-Nb-Ti-Mo-N system with a coercive force of more than 800 kA / m and a Curie temperature of 480 ° C.</p> <p>The regularities of the phase formation process are established under various modes of mechanical alloying of iron with austenite-forming elements of the Fe-Cr-Ni-Mn system in a nitrogen-containing atmosphere.</p>		

A method has been developed for producing high-nitrogen austenitic steel powder of the Fe-18Cr-8Ni-12Mn-N system, with a nitrogen content of up to 1 wt.%, By mechanical alloying of iron with austenite-forming elements in a nitrogen-containing atmosphere.

Education	Ph.D	Major	Material Science
		Research field	Material Science
		Dissertation	-

Code # : UC33

Available term for consultation	1week	Available for trip to Korea	Yes
Intellectual property Information	-		
Category of Research	BT(Biology Technology), ME(Material&Equipment), NT(Nano Technology)		
Available field for consulting	<p>Description The essence of the proposal: Obtaining coatings for medicine with new improved characteristics:</p> <p>The application of titanium by the method of three-dimensional capillary-porous coatings Osteointegration oxide coatings (Ti-HA-Cu) The coating allows for accelerated osseointegration and safe engraftment of titanium implants without the occurrence of purulent-inflammatory processes in the tissues.</p> <p>“Smart prostheses” The quality of bone implants can be significantly improved if a polypyrrole film is applied to their surface. Using antibiotics or anti-inflammatory drugs, drugs introduced into the polymer coating can be released from the polypyrrole “on demand” - when voltage is applied - and control the behavior cells, that is, suppress inflammation and kill bacteria.</p> <p>Medical coverings Spraying titanium + hydroxyapatite (which is a natural component of bone tissue) allows implants to provide an ideal surface structure for the formation of fast and strong integration (ingrowth). Bone cells can be fixed directly to biocompatible materials, provided that they have the appropriate structure. Vacuum plasma spraying of pure titanium has a rough surface, giving bone cells an ideal “place” for ingrowth. The natural oxide film on the surface of titanium prevents the release of metal ions after implant placement. Osteointegration (fouling) of the implant can be accelerated with the help of an additional hydroxyapatite (HA) coating. Hydroxyapatite is a natural component of bone tissue. Currently, the processes of growing into metal implants coated with biomaterials are overgrown by analogy with healing in bone fractures.</p> <p>Implant coating For the formation of strong and long-term fixation, the implant coating is important. Vacuum plasma spraying using pure titanium provides a rough surface, which creates ideal conditions for ingrowth processes. The proposed method allows coating various carrier materials.</p> <p>Porous coatings Biological fixation of implants requires a rough surface with open porosity, which ensures both the growth and growth of bone cells. The porous coating is determined by the size of the natural pores of the bone tissue and is characterized by the percentage of voids. On the other hand, it is necessary to avoid the presence of a void inside the material, as this affects the overall stability of the implant (there may be mechanical damage to the structure). The medicoat coating has the above properties and provides the basis for permanent fixation at the bone-implant border.</p> <p>Competitive advantages: Mobility and compactness of the system. Environmental friendliness. Operational safety, no flammable gases.</p>		
Education	Ph.D	Major	Material Science
		Research field	Bio - Material & Coating
		Dissertation	-