



ICMSIT

Metrological Support
of Innovative Technologies

Science and Technology City Hall
KRASNOYARSK, RUSSIA

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**International Scientific
Conference**

**ICMSIT-2020:
Metrological Support of
Innovative Technologies**

March 4, 2020 | Saint Petersburg - Krasnoyarsk,
Russia

www.conf.domnit.ru

Programme Book



United Nations
Educational, Scientific and
Cultural Organization



SUAI

Institute of Aerospace
Instruments and Systems

UNESCO Chair on Distance Education in Engineering
Saint-Petersburg State University
of Aerospace Instrumentation,
Russia



**RUSSIAN AND
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IOP Conference Series

Conference Programme

International Conference on Metrological Support of Innovative Technologies (ICMSIT-2020)

Saint Petersburg - Krasnoyarsk, Russia
4 March 2020

About the Conference

St. Petersburg State University of Aerospace Instrumentation and Krasnoyarsk Science and Technology City Hall with the support of the International and Russian Union of Scientific and Engineering Public Associations, UNESCO Departments of St. Petersburg and the Metrological Academy of the Russian Federation are organizing an International Conference on Metrological Support of Innovative Technologies (ICMSIT-2020). The Conference will take place in March 4, 2020 in St. Petersburg.

Scientists and specialists from Russian and foreign universities, academic institutions, enterprises, design and research centers are invited to participate in the Conference.

The purpose of the Conference is to share the experience in the application of modern methods of engineering physics and information-measuring technologies in high-tech production, in the fields of aerospace, energy, chemical and oil and gas engineering, economics and organization of engineering production, as well as in modern areas of complex research of technical and information systems.

The work of the Conference is planned in the following directions:

- Engineering and Industrial Physics;
- Instrumentation Metrology and Standards;
- Control and Measurement Devices in Medicine;
- Measurements in Mechanical Engineering and Automation Systems;
- Innovative Technologies in Instrumentation and Electronics;
- Cybernetics, Economics and Organization of Metrological Support;
- Metrological Engineering and Support of Special Equipment;
- Advanced Tendencies of Training Specialists in Applied Physics, Engineering, and Metrology;
- Mechanical Engineering and Industry 4.0;
- Automation Engineering and Cyber-Physical Systems;
- Information-measuring systems for environmental monitoring.

The Conference will take place in March 4, 2020 in St. Petersburg State University of Aerospace Instrumentation. In case of inability to attend the Conference in person, in absentia presentation is allowed. One can register for the Conference on-line: <http://conf.domnit.ru/en/registration-icmsit/>. The registration is open from December 15, 2019 till February 15, 2020.

Proceedings of the Conference

The Proceedings of the Conference in the form of full papers in the English language will be published in Journal of Physics: Conference Series (JPCS), indexed by Scopus (Q3) & Web of Science. The papers should meet the requirements of the Journal (the requirements and the templates can be found on the web-site <http://conf.domnit.ru/en/conferences/icmsit-2020-en/>).

The official languages of the Conference are Russian and English. The Organizers will provide professional interpretation under requirement.

Workshop Venue

The Conference will take place in St. Petersburg State University of Aerospace Instrumentation (SUAI): St. Petersburg, 67, Bolshaya Morskaya street.

Accommodation for the Conference participants can be provided with reservation from SUAI in the hotel system of St. Petersburg by priory arrangement. Accommodation and travel expenses are paid by sending organizations.

Registration Fee

ICMSIT-2020 <http://conf.domnit.ru/en/conferences/icmsit-2020-en/>

Participation in the Conference is free. The registration fee for the publication in Journal of Physics: Conference Series (JPCS) is 200 EURO. The fee is paid after the notice about acceptance of the paper but not later than February 20, 2020.

Conference Programme – March 4, 2020

9:30 - registration of participants, «Da Vinci» Exhibition Hall
10:30 - Forum opening, «Da Vinci» Exhibition Hall, room 51-06
11:00 - Sections
 * Section 1 - «Da Vinci» Exhibition Hall, 51-06
 * Section 2 - Lecture Hall, 13-13
 * Section 3 - Conference Hall of SUAI Academic Council, room 53-03
13:00-14:00 - Lunch
14:30 – Sections work
17:30 - Closing of the Forum and rewarding of participants

Contact Details

Please forward all the questions concerning the participation and the programme to the executive secretary:

Anna Voroshilova

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E-mail: krasnio@bk.ru

Krasnoyarsk Science and Technology City Hall of the Russian Union of Scientific and Engineering Organisations, 61, Uritskogo street, Krasnoyarsk, 660049, Russia

The detailed information is also available at: <http://conf.domnit.ru/en/conferences/icmsit-2020-en/>

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Section 1. Applied Physics and Cyber-Physical Systems

ICMSIT-1001	Virtual and mixed reality in the study of the geometry of the crystal lattice	P V Zakharov, R S Vdovin, A V Markidonov, A S Kochkin and A S Vdovin	Shukshin Altai State University for Humanities and Pedagogy, Biysk; Novokuznetsk Branch-Institute of Kemerovo State University, Novokuznetsk; Altai State University, Barnaul, Russia
ICMSIT-1002	Improving the radiation-thermal stability of titanium hydride	R N Yastrebinsky, A A Karnauhov and A V Yastrebinskaya	Belgorod State Technological University named after V.G. Shukhov, Belgorod, Russia
ICMSIT-1003	The influence of fluorine coatings on the performance characteristics of flexible bellows	E I Amirkhanov, V Yu Bazhin, V V Logunov and I A Novikov	OOO "Center of diagnostics, examination, certification"; Saint-Petersburg, Russia Mining University; JSC "NPP "Compensator"; Baltic State University "VOENMEH" titled D.F. Ustinov Saint-Petersburg,
ICMSIT-1004	Nonequilibrium carbon black suspensions used in synthesis of polymer composite material	O P Stebeleva, L V Kashkina, E A Petrakovskaya, T V Rubleva, S L Nikitin, O A Vshivkova	Siberian Federal University, Federal Research Center "Krasnoyarsk Science Center of the Siberian Branch of the Russian Academy of Sciences", L.V. Kirensky Institute of Physics SB RAS, Federal Research Center "Krasnoyarsk Science Center of the Siberian Branch of the Russian Academy of Sciences", Krasnoyarsk, Russia
ICMSIT-1005	Automatic control system for operation modes and calibration of technological parameters of evaporation cooling apparatuses	N A Merentsov, V N Lebedev, A V Persidskiy and A B Golovanchikov	Volgograd State Technical University, Volgograd, Russia, Branch of LUKOIL-Engineering Volgograd NIPIorneft, JSC Federal Scientific and Production Centre «Titan - Barricady», Volgograd, Russia
ICMSIT-1006	CALS conception for the educational program at the university in the study of metrology and other technical disciplines	Sergej Bronov, Elena Stepanova, Anastasiya Katsunova, Maksim Volkov, Pavel Sizov and Nadezhda Panikarova	Institute of Space and Information Technologies, Siberian Federal University, Krasnoyarsk; Department of Information Technology and Systems, Krasnoyarsk State Agrarian University, Krasnoyarsk; Moscow State University of Technologies and Management named after Razumovsky, Moscow, Russia
ICMSIT-1007	Development of intellectual complex for adaptive control of microclimate parameters of flour storage processes	E A Muravyova	Ufa State Petroleum Technological University Branch in Sterlitamak, Sterlitamak, Russian Federation

ICMSIT-1008	Robotization in the production of dairy, meat and fish products	TA Khoroshailo and YA Kozub	Kuban State Agrarian University named after I.T. Trubilin, Krasnodar; Irkutsk State Agricultural University named after A.A. Ezhevsky, Irkutsk National Research Technical University, Irkutsk, Russia
ICMSIT-1009	Designing technologies for the interaction of cyber-physical systems in smart factories of the Industry 4.0	D A Zakoldaev, A V Shukalov, I O Zharinov, O O Zharinov	ITMO University, Saint Petersburg; Saint Petersburg State University of Aerospace Instrumentation, Saint Petersburg, Russia
ICMSIT-1010	Technological process intensification trends in livestock	V I Komlatsky, T A Podoinitsyna and Y A Kozub	Kuban State Agrarian University named after I.T. Trubilin, Krasnodar; Irkutsk State Agricultural University named after A.A. Ezhevsky; National Research Irkutsk State Technical University; Irkutsk, Russia
ICMSIT-1011	Process control system based on a fuzzy controller	E A Muravyova and Y V Stolpovskaya	Ufa State Petroleum Technological University Branch in Sterlitamak, Sterlitamak, Russian Federation
ICMSIT-1012	Sensor microassemblies with radio frequency identification for temperature measurement	K A Muraviev, P V Grigoriev, V V Leonidov, A I Krivoshein, T A Tsyvinskay, V O Semenyakina and E R Zakharov	Bauman Moscow State Technical University, Moscow, Russia
ICMSIT-1013	Innovative thinking development in engineers	K O Sokolov, I A Sergeicheva and M I Sokolova	South Ural Institute of Management and Economics, Chelyabinsk, Russia
ICMSIT-1014	Impact of undissolved gas on the performance characteristics of hydraulic fluids and characteristic of hydraulic system	A S Lunev, A A Nikitin, V A Ionova, A V Novik and V A Kramarenko	Siberian Federal University, Krasnoyarsk, Russia
ICMSIT-1015	The specifics of training for the industrial sector in the context of digitalization	S S Kudryavtseva, M V Shinkevich, T V Malysheva and I I Ishmuradova	Kazan National Research Technological University, Kazan; Kazan (Volga region) Federal University, Kazan Russia
ICMSIT-1016	Implementation of WorldSkills standards in the system of training specialists in mechanical engineering and engineering system	L L Chumakov and V E Epishkin	Togliatti State University, Togliatti, Russia, Samara region

ICMSIT-1017	Key directions of automation of petrochemical production	A I Shinkevich, N V Barsegyan, A N Dyrdonova and N Yu Fomin	Kazan National Research Technological University, Kazan; Nizhnekamsk Institute of Chemical Technology (branch) of the Kazan National Research Technological University, Nizhnekamsk, Russia
ICMSIT-1018	Impact of the error of circular control methods on assessing the quality of anti-erosion soil tillage on slope lands	S A Vasilyev, A M Vasilyev, A A Fedorova and R I Aleksandrov	Chuvash State University, Cheboksary, Russia
ICMSIT-1019	Analysis of the stressed-deformed state of a pipeline with curved line parts in frozen soil	P A Kulakov, A V Rubtsov Z R, Afanasenko V G, Mukhametzyanov and M I Bayazitov	Ufa State Petroleum Technological University, Ufa, Russia
ICMSIT-1020	Problems of assessing the effectiveness of CAE-complexes in the design of offshore structures	I V Starokon	Russian state university of oil and gas named by I.M. Gubkin
ICMSIT-1021	The development of a mathematical model of the propagation of radiation in metal nanoclusters in order to determine the possibility of controlling their properties by the SBS method	T Yu Mogilnaya, A M Vasiliev, L L Pagawa and D Yu Kukushkin	Moscow Aviation Institute (National Research University), Moscow, Russia; JSC "SERVET-M", Moscow, Russia
ICMSIT-1022	Radial profile of dissipation rate for turbulent flow of incompressible fluid in round direct pipe based on generalized local balance model	Alexander M Balonishnikov and Olga V. Opalikhina	Saint- Petersburg University for Aerospace Instrumentation, Saint-Petersburg, Russia
ICMSIT-1023	Signal properties correlation studying discrete control systems	O P Ievlev, D M Malinichev and Kh Kh Kuchmezov	Moscow Technical University of Communications and Informatics, Moscow, Russia; Russian State Social University, Moscow, Russia; Financial University under the Government of the Russian Federation, Moscow, Russia
ICMSIT-1024	Soft skills in training specialists in the sphere of standardization, metrology and quality management as a part of education for sustainable development	N M Galimullina, , O A Vagaeva, D E Lomakin, T E Melnik and A V Novakovskaya	Kazan National Research Technical University named after A.N. Tupolev – KAI, Kazan; Penza State Technological University, Penza; Orel State University named after I.S. Turgenev, Orel; Kazan National Research Technical University named after A.N. Tupolev – KAI, Kazan, Russia

ICMSIT-1025	Algorithm design for management decision-making support the educational institutions of higher education basing of the application of risk-oriented approach	A V Lupanova, E A Timofeeva, E V Kalach and N V Martinovich	Ural Institute of State Fire-Prevention Service of the Ministry of Emergency, Ekaterinburg, Russia; Research Institute of the Federal Penitentiary Service of Russia, Moscow, Russia; Voronezh Institute of Russian Federal Penitentiary Service, Voronezh, Russia; Siberian Fire and Rescue Academy of the State Firefighting Service of the Ministry of Civil Defence, Emergency Situations and Natural Disaster Response of the Russian Federation, Krasnoyarsk region, Zheleznogorsk, Russia.
ICMSIT-1026	The current and future role of automation in radiotherapy treatment planning	D M Bamatov and I M Bamatov	Grozny State Oil Technical University named after Academician M. D. Millionshchikov; Chechen State University, Grozny: Russia
ICMSIT-1027	Impact of IoT on the automation of processes in Smart Cities: security issues and world experience	Adam U Mentsiev, Mahdi V Engel and Diana-Madina M-E Gudaeva	Chechen State University, Grozny; Grozny International University LLC., Grozny; Chechen State Pedagogical University, Grozny, Russia;
ICMSIT-1028	Energy consumption of water supply system's utilities in building	V Khokhlov, M Razakov and R Razakova	Moscow Power Engineering Institute, Moscow State University of Civil Engineering
ICMSIT-1029	Nickel oxide reduction in CO/CO ₂ gas mixtures in reflective furnaces	V E Quiroz Cabascango and V Yu Bazhin	Saint Petersburg Mining University, Saint Petersburg, Russia.
ICMSIT-1030	Monitoring the state of water from water source and wastewater by the content of manganese (II) and iron (III) ions	MKh Kurbangaleeva	Ufa State Petroleum Technological University, Ufa, Republic of Bashkortostan, Russia
ICMSIT-1031	Flexible technologies of the reconfigurable automatic plants	A V Gurjanov, A V Shukalov, D A Zakoldaev, I O Zharinov	Stock Company «Experimental Design Bureau «Electroavtomatika» named after P A Yefimov, Saint Petersburg, , ITMO University, Saint Petersburg, Russia
ICMSIT-1032	Distribution of software between reconfigurable manufacturing systems	A V Shukalov, D A Zakoldaev, I O Zharinov, O O Zharinov	ITMO University, Saint Petersburg; Saint Petersburg State University of Aerospace Instrumentation, Saint Petersburg, Russia

ICMSIT-1033	Quantum technologies in the NGSO class orbits	I N Kartsan, V S Averyanov, N A Shumakova, A O Zhukov, O A Platonov and S V Efremova	Reshetnev Siberian State University of Science and Technology, Krasnoyarsk, Innovative scientific and technological center «Granit», Sevastopol, Republic of Crimea, V.I. Vernadsky Crimean Federal University, Simferopol, Republic of Crimea, Institute of Astronomy of the Russian Academy of Sciences, Moscow, Lomonosov Moscow State University, Moscow, Russian Technological University, Moscow, Russia
ICMSIT-1034	Detecting vulnerabilities of information resources of unmanned vehicles method based on dynamic evaluation of Markov sequences properties	A V Skatkov, A A Bryukhovetsky, D V Moiseev and V I Shevchenko	SEVASTOPOL STATE UNIVERSITY, Sevastopol, Russia
ICMSIT-1035	Modern trends of training of specialists in metrology	E V Priimak and I S Razina	Kazan national research technological University, Russia, Kazan
ICMSIT-1036	The economic performance of diesel engine when operating on methanol with a dual fuel supply system	A A Anfilatov and A N Chuvashv	Department of thermal engines, automobiles and tractors, Vyatka State Agricultural Academy, Kirov, Russia
ICMSIT-1037	Study on a computer liquid cooling system on ferrofluids	V.A. Pomytkin , S.G. Voronchikhin, M.A. Zemtsov, A.L. Fluxman	Kirov State Medical University, Kirov; Vyatka State University, Kirov.
ICMSIT-1038	Increasing reliability of production work personnel when using graphic models of technological processes	S Sh Abyzgildina and Z R Mazina	Ufa state petroleum technological university, Ufa, Russia
ICMSIT-1039	Development of methods for training operators of manual manipulators	V A Griazin, A V Egorov, A V Lysyannikov, Yu F Kaizer V L Tyukanov, R B Zhelukevich, A B Fedorov and J S Sharshembiev	Volga State University of Technology, Yoshkar-Ola; Siberian Federal University, Krasnoyarsk, Russia; Kyrgyz National Agrarian University named after K. I. Scriabin, Bishkek, Kyrgyzstan
ICMSIT-1040	Multi-agent model of information interaction among unmanned vehicles	V I Shevchenko, A V Skatkov, A A Bryukhovetskiy, O V Chengar and T A Kokodey	Sevastopol State University

ICMSIT-1041	Application of non-positional representation of information in the form of probabilistic mappings in control systems of unmanned vehicles	D V Moiseev, A V Skatkov and A A Bryukhovetsky	SEVASTOPOL STATE UNIVERSITY, Sevastopol, Russia
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ICMSIT-1045	Narrow-band correlation processing of signals in a phase direction-finding	A O Zhukov, I N Valyaev, V P Kovalenko, Z N Turlov, A S Novikov, I N Kartsan and Yu N Malanina	Institute of Astronomy of the Russian Academy of Sciences, Moscow, Lomonosov Moscow State University, Moscow, Russian Technological University, Moscow, JSC "Special Design Bureau of the Moscow Energy Institute", Moscow, Reshetnev Siberian State University of Science and Technology, Krasnoyarsk, Innovative scientific and technological center «Granit», Sevastopol, Republic of Crimea, V.I. Vernadsky Crimean Federal University, Simferopol, Republic of Crimea, Irkutsk State Transport University, Irkutsk, Russia
ICMSIT-1046	3D modeling in the study of the basics of computer graphics	Ch B Minnegalieva, R I Gabdrakhmanov, A I Khambelov, L E Khairullina, V V Bronskaya and O S Kharitonova	Kazan Federal University, Kazan National Research Technological University, Kazan, Russian Federation
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ICMSIT-1048	The use of plasmon resonance spectroscopy to analyze the parameters of thin layers	V V Yatsyshen	Volgograd State University, Volgograd, Russia

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ICMSIT-1052	Development of forecasted values of specific norms for the issues of produced products in industrial enterprises	I U Rakhmonov, A N Tovbaev, L A Nematov and T Sh Alibekova	Tashkent State Technical University named after Islam Karimov, Tashkent, Navoi State Mining Institute, Bukhara Engineering-Technological Institute, Karakalpak State University, Nukus, Uzbekistan
ICMSIT-1053	Method for phase direction finding of signals with asymmetric spectra	A O Zhukov, I N Valyaev, V P Kovalenko, Z N Turlov, I V Minin, A A Zaverzaev, I N Kartsan and Yu N Malanina	Institute of Astronomy of the Russian Academy of Sciences, Moscow, Lomonosov Moscow State University, Moscow, Russian Technological University, Moscow, JSC "Special Design Bureau of the Moscow Energy Institute", Moscow, Reshetnev Siberian State University of Science and Technology, Krasnoyarsk, Innovative scientific and technological center «Granit», Sevastopol, Republic of Crimea, V.I. Vernadsky Crimean Federal University, Simferopol, Republic of Crimea, Irkutsk State Transport University, Irkutsk, Russia
ICMSIT-1054	Ways of helium development in Eastern Siberia	A B Feodorov, A V Egorov, L I Sviridov and A V Bushkina	Siberian Federal University, Krasnoyarsk, ElseTech, Krasnoyarsk, Russia Volga State University of Technology, Yoshkar-Ola, Russia
ICMSIT-1055	Operation analysis of expander-generator unit at a gas distribution station	A A MUKOLYANTS, M D BURANOV, I V SOTNIKOVA, H F MAKHMUDOV	TASHKENT STATE TECHNICAL UNIVERSITY NAMED AFTER ISLAM KARIMOV, UZBEKISTAN
ICMSIT-1056	Power consumption management from the positions of the general system theory	I U Rakhmonov, L A Nematov, N N Niyozov, K M Reymov, T M Yuldoshev	Tashkent State Technical University named after Islam Karimov, Uzbekistan, Tashkent Bukhara Engineering-Technological Institute, Uzbekistan,

			Bukhara Karakalpak State University, Uzbekistan
ICMSIT-1057	Theoretical research and development optoelectronic communication devices	E. Kh. Abduraimov, D. Kh. Khalmanov, B. A. Nurmatov, S. A. Dusmukhamedova, N. E. Khamidova	Tashkent State Technical University named after Islam Karimov, Uzbekistan, Tashkent
ICMSIT-1058	Optimal tendency of selecting cable cross-sections for agricultural electrical networks	A D Taslimov, A S Berdishev, F M Rakhimov, A A Yuldashev	Tashkent State Technical University named after Islam Karimov, Uzbekistan, Tashkent, Tashkent institute of irrigation and agricultural mechanization, Tashkent, Uzbekistan, Karakalpak State University, Uzbekistan, Navoiy State Mining institute Uzbekistan, Navoiy
ICMSIT-1059	The remote technical equipment monitoring system for light aircraft	G I Korshunov, E T Nurushev, S L Polyakov and G V Getmanova	Saint-Petersburg State University of Aerospace Instrumentation, Saint-Petersburg, Peter the Great St. Petersburg Polytechnic University, Saint-Petersburg,
ICMSIT-1060	Decision-making algorithm for the optimal installation of receiving antennas of stationary hydroacoustic communication systems for dispatching geospatial processes	A A Ovodenko, Ja A Ivakin, I A Selesnev and E A Frolova	Saint-Petersburg State University of Aerospace Instrumentation, JSC "Concern "OKEANPRIBOR"", Saint-Petersburg, St. Petersburg Institute for Informatics and Automation of the Russian Academy of Sciences, St. Petersburg, Russia
ICMSIT-1061	Model for selecting test methods of detecting fraudulent electronic components	Ya A Shchenikov, S V Michurin and V O Sidorov	Saint-Petersburg State University of Aerospace Instrumentation, Saint-Petersburg
ICMSIT-1062	Metrological support of diagnostic complexes for assessment of technical conditions	N N Skoriantov, R N Tselms, M V Okrepilov, B Yu Litvinov and A S Stepashkina	Saint Petersburg State University of Aerospace Instrumentation, D.I. Mendeleev State Institute for Metrology
ICMSIT-1063	A study of problematic issues in information resources integration in Russia	A A Vorobyov, K V Yanovitch, R V Rudenko, R R Shabaev and G N Levchenko	Research Institute of the Military Academy of Material and Technical Support named after Army General A.V. Khrulev, Military Engineering Institute of the Military Academy of Material and Technical Support named after Army General A.V. Khrulev, Military Institute of Physical Culture, St. Petersburg State University of Aerospace Instrumentation

ICMSIT-1064	The influence of the knowledge lifecycle model on the trends in the training of technical specialists	Y Y Savchenko, O G Goleva, I A Korchagina and A V Ovsyannikova	Altai state University, Barnaul, Russia
ICMSIT-1065	Research of data transmission system based on UWB technology	V F Garifullin, D S Feoktistov, V N Bondarenko, T V Krasnov and T N Baturin	Siberian Federal University, Krasnoyarsk, Russia
ICMSIT-1066	Malfunction analysis and safety of technical systems mathematical models	A N Rogalev, A A Rogalev and N A Feodorova	Institute of Computational Modeling SB RAS Krasnoyarsk, Institute of Space and Information Technologies Siberian Federal University, Krasnoyarsk, Institute of Space and Information Technologies Siberian Federal University
ICMSIT-1067	Information and thermodynamic fundamentals of cyber physical systems modeling	G I Korshunov, S L Polyakov	Saint-Petersburg State University of Airspace Instrumentation, Saint-Petersburg, Peter the Great St. Petersburg Polytechnic University, Saint-Petersburg, Russia
ICMSIT-1068	Aerodynamic and hydroaerothermic tests of cooling tower sprinkler	E V Boev	Ufa State Petroleum Technological University
ICMSIT-1069	Non-Rigid Shaft Processing With Pre-Emphasis of Tool Trajectory on CNC Machines	A P Starostin and V F Pegashkin	Nizhny Tagil Institute of Technology (branch) Ural Federal University named after the first President of Russia B.N. Yeltsin, Nizhny Tagil; Ural Federal University named after the first President of Russia B.N. Yeltsin, Yekaterinburg; Russia
ICMSIT-1070	Competitiveness increase of technological business processes of casting production on the basis of AlpHaset process	V A Kukartsev, K A Bashmur, A V Kukartsev, V S Tynchenko, N M Lugovaya, A R Ogol and V V Kukartsev	Siberian Federal University; Reshetnev Siberian State University of Science and Technology, Krasnoyarsk, Russia
ICMSIT-1071	Sprinklers of cooling towers	E V Boev	Ufa State Petroleum Technological University
ICMSIT-1072	Analysis of reliability of Boguchany Dam circuit of power output while taking into account the perspective of Siberian United Energy Systems development	A S Svinko, E Yu Sizganova, R A Petukhov and I V Kovalenko	Siberian Federal University, Krasnoyarsk, Russia

ICMSIT-1073	Influence of the chemical composition of steel on the formation of a stone-like fracture and the microstructure of cast steels	M L Skryabin	Vyatka State Agricultural Academy, Kirov, Russia
ICMSIT-1074	Analysis and improvement of production planning within small-batch make-to-order production	D V Kapulin and P A Russkikh	Siberian Federal University
ICMSIT-1075	Study of the student progress monitoring system of a university department for a distance learning system based on a Web portal and for OLAP samples using to automate analysis	P N Charikov and S U Fokin	Ufa State Petroleum Technological University, Branch in Sterlitamak, Sterlitamak, Russian Federation
ICMSIT-1076	Effect of ion implantation on the properties of implantable aluminum alloys	O Yu Usanova, A V Ryazantseva, I L Savelev, V S Timohin	Federal state budgetary educational institution of higher education "Moscow Polytechnic University"
ICMSIT-1077	Electrical testing of small-series multi-chip microcircuit samples combining Wire Bond and Flip-Chip technologies	D A Kirienko, N Yu Ershova, V V Putrolaynen, P V Lunkov and K R Marcinkevich	Petrozavodsk State University, Petrozavodsk, Russia
ICMSIT-1078	The phenomenon of memory in vanadium ox nitride films	KhO Urinov, KhA Jumanov, AKAmonov, JO Urinov and ASH Abduganiev	Samarkand branch of Tashkent University of information technologies named after Mukhammad al-Khwarizmi, Samarkand, Uzbekistan
ICMSIT-1079	Monitoring the radio frequency spectrum based on an integrated antenna system	A Khotamov	Samarkand branch of Tashkent University of information technologies named after Mukhammad al-Khwarizmi, Samarkand, Uzbekistan
ICMSIT-1080	About one synthesis method for adaptive control systems with reference models	T V Boturov, Sh B Latipov and B M Buranov	Navoi State Mining Institute, Navoi, Uzbekistan
ICMSIT-1081	Magnetocaloric effect in polycrystalline cobalt.	KhO Urinov, KhA Jumanov, AM Khidirov, S Kh Urinov, JMAbdiyev, TA Jumaboyev and MREshmirzayev	Samarkand branch of Tashkent University of information technologies named after Mukhammad al-Khwarizmi, Samarkand, Uzbekistan
ICMSIT-1082	The method of PID controllers synthesis for sixth-order systems	A P Prokopev, Zh I Nabizhanov, V I Ivanchura and R T Emelyanov	Siberian Federal University

ICMSIT-1083	Analysis of technical and economic market conditions affecting metrological equipment used in microelectronics	A V Fomina and D V Kornachev	Central Research Institute of Economy, Management Systems and Information «Electronics», Moscow, MGIMO, Moscow, Russia
ICMSIT-1084	Software development for 3D visualization of G-Code when working with CNC machines	S G Yakovlev, J K Keldibekov and I M Gorbachenko	Reshetnev Siberian State University of Science and Technology
ICMSIT-1085	Methods to ensure durability and improvement of reliability of bridge cranes of General purpose during their operation	A L Akhtulov, M O Kirasirov, O M Kirasirov	Omsk Tank-automotive Engineering Institute, Omsk, Russia; Limited liability company «Titaniumavto», Omsk State Agrarian University, Omsk, Russia
ICMSIT-1086	Automation of the process of measuring the level of competence development in a competence-oriented learning	P A Mitroshin	Dmitrov Institute of Continuing Education branch of Dubna State University
ICMSIT-1087	Constructive algorithms as a method of achieving plasticity of anns	I V Kovalev and N V Yakasova	Federal state Autonomous educational institution of higher education "Siberian Federal University", Krasnoyarsk; Federal state budgetary educational institution of higher education "Khakassia state University named after N. F. Katanov", Abakan, Russia
ICMSIT-1088	Environmental trends in fracturing technologies	A B Feodorov, A V Egorov, L I Sviridov, P A Shakirov and E S Kurochkin	Siberian Federal University, Krasnoyarsk, Russia ElseTech, Krasnoyarsk, Russia Volga State University of Technology, Yoshkar-Ola, Russia
ICMSIT-1089	Mastering software engineering with the help of the level model of competencies acquisition	K A Rutskaya, O V Znamenskaya, V N Rutskiy, R Yu Tsarev, V N Everstova, I V Gogoleva and A K Owais	Siberian Federal University, Krasnoyarsk, Russia; Krasnoyarsk State Agrarian University, Krasnoyarsk, Russia; North-Eastern Federal University, Yakutsk, Russia; Yakut State Agricultural Academy, Yakutsk, Russia; Al Ain University, Abu Dhabi, UAE
ICMSIT-1090	Structural analysis of vibrational characteristics of rotor systems		Saint-Petersburg State University of Aerospace Instrumentation
ICMSIT-1091	An activity-based approach to upskilling teachers who teach engineering of software products	K A Rutskaya, A M Aronov, V N Rutskiy, R Yu Tsarev, N V Titovskaia, K Y Zhigalov, N V	Siberian Federal University, Krasnoyarsk, Russia; Moscow City University, Moscow, Russia; Krasnoyarsk State Agrarian University, Krasnoyarsk, Russia; V. A. Trapeznikov Institute of Control Sciences of Russian Academy of

		Bystrova and Younes El Amrani	Sciences, Moscow, Russia; Moscow Technological Institute, Moscow, Russia; Minin State Pedagogical University of Nizhny Novgorod, Nizhny Novgorod, Russia; Abdelmalek Essaâdi University, Tangier, Morocco
ICMSIT- 1092	Legislative trends in the field of metrological activity and ensuring the uniformity of measurements	V M Boer, S Yu Andreitco and I V Timofeeva	Saint-Petersburg State University of Aerospace Instrumentation

Section 2. Cybernetics, economics and information measuring systems

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ICMSIT- 2001	Import substitution in digitalization	V V Lastochkina, S V Novikov and A D Solodova	Moscow Aviation Institute (National Research University)
ICMSIT- 2002	Laws of environmental protection in Vietnam - Situation and solutions	X D Chu	People's Police Academy, Hanoi, Vietnam
ICMSIT- 2003	Formation of the conditions for the development of innovation in the economy of the Russian Federation	D E Morkovkin, D S Lopatkin, T N Shushunova, B K Sharipov and A A Gibadullin	Financial University under the Government of the Russian Federation, Moscow, Russian Federation; Mendeleev University of Chemical Technology of Russia, Moscow, Russian Federation; Branch of the National University of science and technology «MISiS» in Dushanbe, Dushanbe, The Republic of Tajikistan; State University of Management, Moscow, Russian Federation.
ICMSIT- 2004	Towards the development of innovative technologies for the MaaS system	Tatyana N Sakulyeva	State University of Management
ICMSIT- 2005	Assessment of the readiness of industrial production for digitalization in the Russian Federation	K A Artamonova, O Yu Gavel, D S Lopatkin, L E Kopylova, O M Aliev and A A Gibadullin	Financial University under the Government of the Russian Federation, Moscow, Russian Federation; Mendeleev University of Chemical Technology of Russia, Moscow, Russian Federation; The Tajik state university of finance and economics, Dushanbe, The Republic of Tajikistan; State University of Management, Moscow, Russian Federation.

ICMSIT-2006	Business valuation based on RAS and IFRS	M N KALOSHINA	Moscow Aviation Institute (National Research University)
ICMSIT-2007	Features of processing of measuring information for an assessment of human ecological wellbeing	O E Bezborodova, O N Bodin, A I Gerasimov, A V Svetlov and B V Chuvykin	Penza state University
ICMSIT-2008	Economic aspects of measuring technological processes	E G Vorozhbit, A A Bakhireva, A A Vyskrebentseva, K I Gulkin and M V Laskina	Altai State University, Economics Department, Barnaul, 658200, Russia
ICMSIT-2009	Development of technical and economic parameters of experimental digital farms	V S Bocharnikov, N V Ivanova, N N Balashova, M A Ovchinnikov and K E Tokarev	Volgograd State Agricultural University, Volgograd, Russia; Volgograd State Technical University, Volgograd, Russia
ICMSIT-2010	Algorithm of materials processing optimization in accordance to metrological requirements of quality management system	Yelena Yu Lukyanova	V.I. Vernadsky Crimean Federal University, Simferopol, Russia
ICMSIT-2011	Development of the management system for metrological assurance of measurements	Oleg A Leonov, Nina Zh Shkaruba	Russian State Agrarian University – Moscow Timiryazev Agricultural Academy
ICMSIT-2012	Mixing strategies in the matrix game	Victor N Assaul and Vladimir K Lashchenov	State University of Aerospace Instrumentation, Admiral S.O. Makarov State University of the Sea and River Fleet, St. Petersburg, Russia
ICMSIT-2013	Working capital as a multi-format process for enterprise management in modern production	S V Novikov and G V Tikhonov	Moscow Aviation Institute (National Research University)
ICMSIT-2014	Evaluation of the investment policy of industrial production of Russia	S V Bryukhovetskaya, M I Sadriddinov, P V Stroev, A A Gibadullin, M A Kirpicheva and Ju A Romanova	Financial University under the Government of the Russian Federation, Moscow, Russia; Tajik State Finance and Economics University, Dushanbe, Republic of Tajikistan; State University of Management; Moscow state University of technology and management K.G.Razumovsky (PKU), Moscow, Russian Federation

ICMSIT-2015	Modern transformation of the industrial framework of the Russian economy in the conditions of Industry 4.0: problems and prospects	D E Morkovkin, A A Gibadullin, E V Kolosova, N S Semkina and I S Fasehzoda	Financial University under the Government of the Russian Federation; State University of Management; Plekhanov Russian University of Economics, Moscow, Russian Federation; Tajik State Finance and Economics University, Dushanbe, Republic of Tajikistan
ICMSIT-2016	Potential precision of terrain measurement using space lidars	D A Balabanova, V A Solomatin and I P Torshina	Moscow State University of Geodesy and Cartography
ICMSIT-2017	Qualitative evaluation of product innovation on the basis of pattern recognition theory	G U Zvezdichev L E Dubanevich and S A Bondarev	Moscow international University, Moscow Aviation Institute(National Research University), Moscow economic institute, Plekhanov Russian University of Economics, Moscow, Russia
ICMSIT-2018	Improving the terms of the life cycle contract for the creation of complex technical objects in high-tech industries	O V Ermakova and N V Ruban	Moscow Aviation Institute (National Research University)
ICMSIT-2019	Selection of metrics in software quality evaluation	A V Kopyltsov	Saint Petersburg State University of Aerospace Instrumentation; Saint Petersburg State Electrotechnical University, St. Petersburg, Russia
ICMSIT-2020	The linear network coding optimization in hybrid ARQ/FEC system to counteract head-of-line blocking in queue	N V Britvin and E O Karpukhin	Moscow Aviation Institute (National Research University), Moscow, Russia; Center of Information Technologies in Engineering RAS, Odintsovo, Russia
ICMSIT-2021	Formation of modern requirements for the development of human capital in the context of increasing the efficiency of the industrial potential of the national economy	V N Pulyaeva, A A Gibadullin, T J Usmanova, I A Ivanova, E N Rudakova and O A Dmitrieva	Financial University under the Government of the Russian Federation; State University of Management, Moscow, Russian Federation; The Technological University of Tajikistan, Dushanbe, The Republic of Tajikistan; Russian University of Transport, Moscow, Russian Federation
ICMSIT-2022	Digital transformation of machine-building complex enterprises	S V Novikov and A A Sazonov	Moscow Aviation Institute (National Research University)
ICMSIT-2023	Method for calculating savings from using a more accurate measuring instruments	O A Leonov, G N Temasova, N ZH Shkaruba, Yu V Kataev and U Yu Antonova	Russian State Agrarian University – Moscow State Agrarian University named after K A Timiryazev, Moscow, Russia

ICMSIT-2024	Mathematical modeling of the fire within the premise equipped by the system of antismoke ventilation	A V Kalach, A P Parshina, A V Oblenko, E A Sushko and E V Kalach	Voronezh State Technical University, Voronezh; Voronezh Institute of Russian Federal Penitentiary Service, Voronezh, Russia
ICMSIT-2025	The transformation of human capital during the transition to a digital economic environment	I A Ivanova, A M Odinaev, V N Pulyaeva, A A Gibadullin and A V Vlasov	Financial University under the Government of the Russian Federation, Moscow, Russian Federation; Tajik State University of Commerce, Dushanbe, Republic of Tajikistan; State University of Management; Russian University of Transport, Moscow, Russian Federation
ICMSIT-2026	Formation of mechanisms for ensuring the sustainability of industry of the national economy	V L Abramov, F A Kodirov, A A Gibadullin, V N Nezamaikin, O I Borisov and N V Lapenkova	Financial University under the Government of the Russian Federation, Moscow, Russian Federation; The Tajik state university of finance and economics, Dushanbe, The Republic of Tajikistan; State University of Management; Russian State University for the Humanities, Moscow, Russian Federation
ICMSIT-2027	Mathematical simulation of the fires quantity in Russian Federation on the protection object type	I A Kaibitchev, A M Tararykin, A V Kalach, M Yu Porkhachev	Ural Institute of State Fire-Prevention Service of the Ministry of Emergency, Ekaterinburg; Voronezh Institute of Russian Federal Penitentiary Service, Russia, Voronezh
ICMSIT-2028	Procedures improvement of forming the execution labor intensity of R&D	M N KALOSHINA and E V DIANOVA	Moscow Aviation Institute (National Research University)
ICMSIT-2029	Advanced tendencies of Russian training in engineering	L B Sobolev	Moscow Aviation Institute (National Research University)
ICMSIT-2030	Approach to assessing the maturity level of an educational institution of secondary vocational education	Mikhail Dorrer and Tatyana Boyarskaya	Reshetnev Siberian State University of Science and Technology, Krasnoyarsk, Russian Federation
ICMSIT-2031	Assessment of the quality of temperature measurements at the input control of meat raw materials	O A Leonov, N Zh Shkaruba, E I Cherkasova and A A Odintsova.	1Russian State Agrarian University - Moscow Timiryazev Agricultural Academy, Moscow, Russia
ICMSIT-2032	Problems of metrological support of methods for determining the corrosion rate of offshore platforms with insufficient source data	I V Starokon	Russian state university of oil and gas named by I.M. Gubkin

ICMSIT-2033	Rating of corrosion factors determining its speed for stationary offshore platforms for oil, gas, coal and other minerals	I V Starokon	Russian state university of oil and gas named by I.M. Gubkin
ICMSIT-2034	Increasing the strength of welded thin-walled axisymmetric vessels made of corrosion-resistant steel	M A Vasechkin, O Yu Davydov, V G Egorov, S V Egorov and E V Matveeva	Voronezh state University of engineering technologies; Research Institute of automated means of production and control, Voronezh, Russia
ICMSIT-2035	The tensile strength diagnostics of transparent monolithic polycarbonate by piezoelectric effect	E A Bobina, L A Gimadeeva, M P Danilaev and M A Klabukov	Kazan National Research Technical University named after A.N. Tupolev – KAI (KNRTU-KAI), Kazan, Russia
ICMSIT-2036	The method of classification of motor oils in the parameters thermo-oxidative stability	B I Kovalsky, O N Petrov, V I Afanasov, V I Vereshchagin and A N Sokolnikov	Siberian Federal University
ICMSIT-2037	The concept for biometric system development based on modern error correcting coding	A A Gladkikh, AI K Volkov, An K Volkov, B A S Saeed, V V Yudaev	Ulyanovsk State Technical University; Ulyanovsk Civil Aviation Institute, Ulyanovsk, Russia
ICMSIT-2038	Monitoring and assessment of the state of floodplain ecosystems exposed to oil and gas complex wastes	A V Strizhenok and A V Fedorova	Saint-Petersburg Mining University, Saint-Petersburg, Russia
ICMSIT-2039	Assessment and quality management of dynamic circuit flows as a condition of enterprise safety	I Yu Alibekov, K V Pitelinskiy and A S Boyar-Sozonovitch	Moscow Polytechnic University; Moscow Aviation Institute
ICMSIT-2040	Primary tool base for the initial stage of environmental monitoring in a megalopolis	T S Korol, N V Lagutina, L P Neupokoev, A V Novikov and O V Sumarukova	Russian State Agrarian University – Moscow Timiryazev Agricultural Academy, Institute of Amelioration, water management and construction named after A.N. Kostyakov, Moscow, Russian Federation
ICMSIT-2041	Visualization of the monitoring data of the emissions into the atmosphere from stationary pollution sources on the territory of the Republic of Crimea in 2013-2018 provided by using geographic information systems (GIS)	V A Tabunshchik, I V Kalinchyk and V O Zhuk	A.O. Kovalevsky Institute of Biology of the Southern Seas of RAS (IBSS), Sevastopol; V.I. Vernadsky Crimean Federal University, Simferopol, Russia

ICMSIT-2042	Software and hardware complex for the development and research of methods for broadband access to multimedia resources and the Internet	D D Dmitriev, A B Gladyshev, V N Ratuschnyak, O B Grithan	Siberian Federal University, Krasnoyarsk; JSC Academician M.F. Reshetnev Information Satellite Systems, Zheleznogorsk, Krasnoyarsk region
ICMSIT-2043	On the requirements for operational planning systems for industrial production	S V Vysochin and A S Boyar-Sozonovitch	Moscow Aviation Institute (National Research University), Moscow; V.I. Vernadsky Crimean Federal University, Simferopol
ICMSIT-2044	Satellite monitoring systems in forestry	L N Zhichkina, V V Nosov, K A Zhichkin, N M Suray, V N Zhenzhebir and VV Kudryavtsev	Samara State Agrarian University, Kinel; K.G. Razumovsky Moscow State University of technologies and management, Moscow; Academy of the Investigative Committee of the Russian Federation, Moscow, Russia
ICMSIT-2045	Mapping distributions in the entropy–parametric space	Vitaly G Polosin	Penza State University
ICMSIT-2046	Multi-target method for small unmanned vehicles parameters remote determination by microwave radars	V D Kuptsov, S I Ivanov, A A Fedotov and V L Badenko	Peter the Great St. Petersburg Polytechnic University, St. Petersburg, Russia
ICMSIT-2047	Improving manageability by sustainable development of territories based on expanding the possibilities of its measurement	V Ya Belobragin, G N Ivanova, I V Chudinovskikh	magazine “Standards and quality”, Moscow; Saint Petersburg State University aerospace instrumentation, Center for Regional Problems of Quality Economics Institute for Problems of Regional Economics, RAS, St.-Peterburg, Russia
ICMSIT-2048	Mathematical and hardware modelling of MST radar signals	D D Dmitriev, V N Ratuschnyak, A B Gladyshev, M A Golubyatnikov and M E Buravleva	Siberian Federal University, Krasnoyarsk, Russia
ICMSIT-2049	Assessment method for fresh concrete spreadability	R T Emelyanov, E S Turysheva, A A Yakshina, V V Makeich, M L Berseneva	Siberian Federal University, Krasnoyarsk, Russia
ICMSIT-2050	Business process transformation: impact mobile technology and social networks on the business dynamics of the company	Vladimir V Okrepilov, Boris B Kovalenko, Galina V Getmanova and Maria S Turovskaj	Russian Academy of Sciences, St. Petersburg, Metrological Support of Innovation Technologies and Industrial Security Department, State University of Aerospace Instrumentation, St. Petersburg, University of the Inter-Parliamentary Assembly of the Eurasian Economic Union, St. Petersburg, State University of Aerospace

			Instrumentation, St. Petersburg Russia
ICMSIT-2051	Features of the QFD method in the development of software and hardware complexes for controlling groupings of unmanned aerial vehicles	E G Semenova, Yu A Antokhina, V M Balashov and M S Smirnova	Saint-Petersburg State University of Aerospace Instrumentation, Joint-stock company «Scientific and Production Enterprise “Radar MMS”», Saint-Petersburg
ICMSIT-2052	Object-evolutionary model of the system for monitoring the water environment hydrophysical fields	E O Savkova, O V Chengar and V I Shevchenko	Donetsk National Technical University, Donetsk; Sevastopol State University, Sevastopol, Russia
ICMSIT-2053	Development of an application of a pipeline network calculation	O S Kharitonova, T V Volodchenko, V V Bronskaya, T V Ignashina, D S Balzamor, L E Khairullina and Ch B Minnegaliev	Kazan National Research Technological University, Kazan State Power Engineering University, Kazan Federal University, Kazan, Russia
ICMSIT-2054	Development of an identifier analysis algorithms to account for the movement of material flow in space transport systems	V E Taratun ^{1,2} and V A Fetisov ¹	Saint-Petersburg State University of Aerospace Instrumentation, Saint-Petersburg, RUSSIA
ICMSIT-2055	Automated control systems for wastewater discharges in the pulp and paper industry	A V Epifanov, E V Tsoy, V O Smirnova, A S Smirnova	Saint-Petersburg State University of Aerospace Instrumentation, Saint-Petersburg
ICMSIT-2056	Quality evaluation information system of street cleaning in Krasnoyarsk	V.S. Terekhova, A.A. Popov, E.M. Gritsenko, M.M.Satsuk and A.A. Artyshko	Reshetnev Siberian State University of Science and Technology
ICMSIT-2057	Wavelet method of hiding text information in audio signals	N N Manuilova, L E Khairullina, G Z Khabibullina, Ch B Minnegaliev, S V Makletsov, V V Bronskaya and O S Kharitonova	Kazan Federal University, Kazan National Research Technological University, Kazan, Russian Federation
ICMSIT-2058	Project for implementing an information system as a result of interaction between participants in the cluster for forest waste processing	M A Ragozina, Yu A Anikina, Yu N Malanina and V A Levko	Reshetnev Siberian State University of Science and Technology, Siberian Federal University, Krasnoyarsk; Irkutsk State Transport University, Irkutsk, Russia

ICMSIT-2059	Big data technologies in environmental monitoring	Svetlana Yu Piskorskaya and Yulia N Malanina	Reshetnev Siberian State University of Science and Technology, Krasnoyarsk; Irkutsk State Transport University, Irkutsk, Russia
ICMSIT-2060	CFAR multi-target detection based on non-central Chi-square distribution for FMCW	S I Ivanov, V D Kuptsov, A A Fedotov and V L Badenko	Peter the Great St. Petersburg Polytechnic University, Saint Petersburg, Russian Federation
ICMSIT-2061	Prevention of attacks with distributed denial of service for information networks of cyberphysical systems	G I Korshunov ^{1,2} , V A Lipatnikov ³ , R G Omarov ³ , A G Varzhapetian ¹	Saint-Petersburg State University of Airspace Instrumentation, Peter the Great St. Petersburg Polytechnic University, Saint-Petersburg, S. M. Budjonny Military Academy of the Signal Corps, Saint-Petersburg, Russia
ICMSIT-2062	Automation design systems for mechanical engineering and device node design	G S Morokina, U Umbetov and Y K Mailybaev	St. Petersburg State University of Aerospace Instrumentation, Saint-Petersburg, Russia Khoja Akhmet Yassawi International Kazakh-Turkish University, Republic of Kazakhstan Kazakh University Ways of Communications, Republic of Kazakhstan
ICMSIT-2063	Application of the Taguchi method to optimize the strength level of dispersed-filled polymers with reduced combustibility	Nikolaj Y Efremov	Baltic state technical university «VOENMEH», Saint Petersburg
ICMSIT-2064	Influence of technical condition parameters on the period of safe operation of technological pipelines	P A Kulakov, A V Rubtsov, V G Afanasenko, Z R Mukhametzyanov and E.V. Khasbutdinova	Ufa State Petroleum Technological University, Ufa, Russia
ICMSIT-2065	Detection of defects on apples using hyperspectral reflection visualization combining both vegetation index analysis and neural network	P V Balabanov, A G Divin, A S Egorov, A A Zhirkova, V A Yudaev	Tambov State Technical University, Tambov, Russia
ICMSIT-2066	Innovative approach to training industry 4.0 experts	Marina Savelyeva, Natalia Shumakova	Reshetnev Siberian State University of Science and Technology
ICMSIT-2067	Diagnosis of the ecological state of aquatic and urban ecosystems and radiometric methods of analysis	E A Batrachenko I A Goneev O P Lukashova and V V Rudnev	Kursk state University; Tsentral'no-chernozemnoe UGMS Kursk, Russia

ICMSIT-2068	Methods of processing data from space monitoring of wild processes on the Earth's surface	G A Dorrer	Reshetnev Siberian state university of science and technologies, Krasnoyarsk
ICMSIT-2069	About the modeling of wild reindeer Rangifer tarandus sibiricus Murrey, 1886 migration processes using the example of Taimyr-Evenk population	V G Soukhovolsky, A P Savchenko, A N Muravyov	Institute of Ecology and Geography, Siberian Federal University, Krasnoyarsk
ICMSIT-2070	Methodology for choosing navigation receivers capable of increasing the efficiency of metrological support for space infrastructure	A V Fomina, A M Batkovskiy and V A Sudakov	Central Research Institute of Economy, Management Systems and Information «Electronics», Moscow, MGIMO, Plekhanov Russian University of Economics, Moscow, Russia
ICMSIT-2071	Adaptation of receiving channels to the spectrum of the received signal	A O Zhukov, I N Valyaev, V P Kovalenko, Z N Turlov, A S Chebotarev, I N Kartsan and N A Shumakova	Institute of Astronomy of the Russian Academy of Sciences, Shternberg State Astronomical Institute of Lomonosov Moscow State University, Russian Technological University, Moscow, JSC «Special Design Bureau of the Moscow Power Engineering Institute», Reshetnev Siberian State University of Science and Technology, Krasnoyarsk, Innovative scientific and technological center «Granit», Sevastopol, V.I. Vernadsky Crimean Federal University, Simferopol, Republic of Crimea, Russia
ICMSIT-2072	Problems and advantages of SCADA systems when performing measurements at hazardous production technologies	K Epifancev and T Mishura	St. Petersburg State University of Aerospace Instrumentation
ICMSIT-2073	Using the MathCAD program to automatically generate the models of doubly fed inductor motor	Sergej Bronov, Pavel Avlasko, Nikolaj Nikulin, Aleksej Bisov, Darya Krivova and Elena Stepanova	Institute of Space and Information Technologies, Siberian Federal University, Krasnoyarsk; Department of Information Technology and Systems, Krasnoyarsk State Agrarian University, Krasnoyarsk, Russia
ICMSIT-2074	Comparative study of finite element analysis software packages	Magomedov Islam Arbievich	Chechen State University
ICMSIT-2075	Security challenges of the Industry 4.0	A U Mentsiev	Chechen State University

ICMSIT-2076	Informational and analytical system for monitoring migration of migratory birds in Northern Kazakhstan	I A Zuban, I R Kassimov and K S Zhadan	M. Kozybayev North Kazakhstan State University, Petropavlovsk, Kazakhstan
ICMSIT-2077	Improved random adaptive grouping approach for solving unconstrained LSGO problems	A V Vakhnin, E A Sopov and I A Panfilov	Reshetnev Siberian State University of Science and Technology; Siberian Federal University, Krasnoyarsk, Russia
ICMSIT-2078	The use of geographic information systems for forest monitoring	I A Korchagina, O G Goleva, Y Y Savchenko and T S Bozhikov	Altai state University, Barnaul, Russia
ICMSIT-2079	Polycyclic aromatic hydrocarbons in bottom sediments of an inner-city lake in the zone of discharge of surface runoff	V Z Latypova, O V Nikitin, R N Sabanaev, V I Safarova and N Y Stepanova	Kazan Federal University, Kazan; Institute for Problems of Ecology and Mineral Wealth Use of Tatarstan Academy of Sciences, Kazan; Department of state analytical control of the Republic of Bashkortostan, Ufa, Russia
ICMSIT-2080	To the evaluation of the parameters of the regression equation between the radiometric and geological testing	G A Ivanyukovich, O A Malafeyev, I V Zaitseva, A M Kovshov, V.V. Zakharov, N.I. Zakharova	St. Petersburg State University, State Agrarian University, Stavropol branch of the Moscow Pedagogical State University, North Caucasus Federal University
ICMSIT-2081	The application of artificial intelligence in radiology	A O Smirnov and E E Aman	St. Petersburg State University of Aerospace Instrumentation, St.-Petersburg,

Section 3. Engineering and Innovative Technologies

ICMSIT-3001	Development of a design of the mixer for an intensification of chemical and technological processes in the industry	E V Boev, V G Afanasenko and N I Boeva	Ufa State Petroleum Technological University
ICMSIT-3002	Automatic balancing devices of rotors of the knife refiners	S N Vikharev	Faculty of technical mechanics and the equipment of pulp-and-paper manufactures, Ural State Forest Engineering University, Ekaterinburg, Russia
ICMSIT-3003	Topological optimization by designing structural elements of logging machine manipulators	S N Dolmatov and P G Kolesnikov	Siberian state University of science and technology named after academician M. F. Reshetnev

ICMSIT-3004	Determination of the traction performance of the working body of the subsoiler in the soil environment depending on the working body configuration and the selected soil model	R R Khudayrulliev, N B Djuraeva, A P Urinov and M M Mirzaeva	Institute of Mechanics and Seismic Stability of Structures of the Academy of Sciences of the Republic of Uzbekistan, Tashkent, Uzbekistan
ICMSIT-3005	Reliability of plate of knife refiners	SN Vikharev	Department of technical mechanics and the equipment of pulp and paper industry, Ural State Forest Engineering University, Ekaterinburg, Russia
ICMSIT-3006	Increase in the repair period of laminate heat exchangers using the thermoelectric Pelletier module	Z R Mukhametzyanov, P A Kulakov and A V Rubtsov	Ufa State Petroleum Technological University
ICMSIT-3007	Evaluation of the stressed-deformed condition of the cylindrical shell of the separator under corrosion wear	A V Rubtsov, Z R Mukhametzyanov, P A Kulakov and K S Arkhipova	Ufa State Petroleum Technological University, Ufa, Russia
ICMSIT-3008	Investigation of nitrogen oxides in the cylinder of a gas-diesel engine	V A Likhanov and O P Lopatin	Vyatka State Agricultural Academy, Kirov, Russia
ICMSIT-3009	Phenomenology of nitrogen oxides formation in a gas-diesel engine	O P Lopatin	Vyatka State Agricultural Academy, Kirov, Russia
ICMSIT-3010	Evaluation of the accuracy of the ship location determined by GPS global positioning system on a given sea area	T D Nguyen	Faculty of Navigation - Vietnam Maritime University
ICMSIT-3011	Practical application of regression analysis to study load parameters of mine excavator equipment	V S Velikanov, N V Dyorina, E I Rabina and T Yu Zalavina	Nosov Magnitogorsk State Technical University
ICMSIT-3012	Determining safety limitations and the frequency of determining vessel location when establishing marine bases on the Vietnam's sea areas	T D Nguyen	Faculty of Navigation - Vietnam Maritime University
ICMSIT-3013	Metrological and methodical support of evaluation of quality of spraying of fruit plantations	A K Apazhev, Y A Shekikhachev1, L M Hazhmetov, A G Fiapshev and L Z Shekikhacheva	Kabardino-Balkarian state agricultural university named after V.M. Kokov, Nalchik, Russia

ICMSIT-3014	Numerical simulation of pulse calibration of a welded tubular part	N V Kurlaev and F M Tagoev	Novosibirsk State Technical University, Novosibirsk, Russia
ICMSIT-3015	Structural-parametric synthesis of mechanisms in CAD-systems	Yuliya I Brovkina, Ekaterina A Petrakova	Moscow Polytechnic University
ICMSIT-3016	Engineering process automation to determine the required material hardness of a cylindrical gear in Autodesk Inventor	Ekaterina A Petrakova, Yuliya I Brovkina	Moscow Polytechnic University, Moscow, Russia
ICMSIT-3017	Research of the screw working element working jointly with the planner's bucket	S N Norov, A S Abrorov, M F Hamroeva, S F Muxamedjanova, G' B Zaripov	Bukhara engineering-technological institute, Bukhara, Uzbekistan
ICMSIT-3018	Wavelet decomposition algorithm for machine learning model in wind turbines	M Pukhova, E Lopatin, N Sokolinskaya and S Tarakanov	Financial University under the Government of the Russian Federation, Russia
ICMSIT-3019	Environmentally friendly guar gum sulfation with a sulfamic acid-urea mixture	A S Kazachenko, N Yu Vasilyeva, Y N Malyar	1Institute of Chemistry and Chemical Technology SB RAS, Federal Research Center "Krasnoyarsk Science Center SB RAS", Krasnoyarsk, Siberian Federal University, Krasnoyarsk, Russia
ICMSIT-3020	Development of environmentally friendly alcohol-fuel emulsions for diesel engines	V A Likhanov and O P Lopatin	Vyatka State Agricultural Academy, Kirov, Russia
ICMSIT-3021	Innovative technologies and digitalization in radio electronics	Ilita A Sopoeva, Svetlana S Kamberdieva, Viktor KH Dedegkaev and Alina S Gutieva	North-Caucasian Institute of Mining and Metallurgy (State Technological University)
ICMSIT-3022	Study of the influence of the degree of exhaust gas recirculation on the working process of a diesel	O P Lopatin	Vyatka State Agricultural Academy, Kirov, Russia
ICMSIT-3023	Safety system for space vehicles using integrated devices located outside of the satellite platform	I.N. Kartsan, N.A. Shumakova, A.O. Zhukov, O.A. Platonov and S.V. Efremova	Reshetnev Siberian State University of Science and Technology, Krasnoyarsk, Innovative scientific and technological center «Granit», Sevastopol, Republic of Crimea, V.I. Vernadsky Crimean Federal University,

			Simferopol, Republic of Crimea, Institute of Astronomy of the Russian Academy of Sciences, Moscow, Shternberg State Astronomical Institute of Lomonosov Moscow State University, Moscow, Russian Technological University, Moscow, Russia
ICMSIT-3024	Control system of the silo aeration process at the cement production	E A Muravyova	Ufa State Petroleum Technological University Branch in Sterlitamak, Sterlitamak, Russian Federation
ICMSIT-3025	Visual methods of high-level system design for digital hardware components	S E Khalzev, A I Vlasov and V A Shakhnov	Bauman Moscow State Technical University, Moscow, Russia
ICMSIT-3026	New urethane multiblock-copolymers obtained using naphthalene diisocyanate	V Yu Senichev, M A Makarova, A I Slobodinyuk, E V Pogoreltsev and M V Kulakova	Institute of Technical Chemistry of Ural branch of Russian Academy of Sciences, Perm, Russia
ICMSIT-3027	Improving the environmental performance of the diesel engine fueled by methanol and methyl ether of rapeseed oil	V A Likhanov, V N Kopchikov and A V Fominykh	Vyatka State Agricultural Academy, Kirov, Russia
ICMSIT-3028	Units for accelerated carbonation of concrete samples and repair compositions	V M Latypov, P A Fedorov, E V Lutsyk and T V Latypova	Ufa State Petroleum Technological University, Ufa, Russia
ICMSIT-3029	Reduced emission of nitrogen oxides by the diesel engine running on methanol and methyl ether of rapeseed oil	V N Kopchikov and A V Fominykh	Vyatka State Agricultural Academy, Kirov, Russia
ICMSIT-3030	Metrological and methodical support of bench research of diesel engines	Y A Shekikhachev, R A Balkarov, M M Chechenov, H B Kardanov and L Z Shekikhacheva	Kabardino-Balkarian state agricultural university named after V.M. Kokov, Nalchik, Russia
ICMSIT-3031	Comparative analysis of the fatigue characteristics of repaired compounds of the "T" and "K" types of fixed offshore platforms	Ivan Starokon	Gubkin Russian State University of Oil and Gas (National Research University)

ICMSIT-3032	Full factor plan application to polymer composites hardness investigation	O A Oreshina	Baltic state technical university «VOENMEH», Saint Petersburg, Russian Federation
ICMSIT-3033	Impact assessment of cutting angle of blade on storage density value of ice cutting process	V A Ganzha, A S Lunev, Yu F Kaiser, V I Vereshchagin, A V Ganzha and A S Satyshev	Siberian Federal University; Krasnoyarsk Public Medical University named after professor V.F. War-Yasenetsky, Krasnoyarsk, Russia
ICMSIT-3034	A study of the static lateral stability of a forestry tillage machine-tractor unit on a virtual stand	M N Lysych	Voronezh State University of Forestry and Technologies named after G.F. Morozov, Voronezh, Russian Federation
ICMSIT-3035	Determination of the endurance limit of structural elements of fixed offshore platforms with accumulated damage based on experimental studies	Ivan Starokon	Gubkin Russian State University of Oil and Gas (National Research University)
ICMSIT-3036	Method for reducing the gas factor in hydraulic fluids	A S Lunev, A A Nikitin, A S Kaverzina, A V Novik, V A Kramarenko	Siberian Federal University, Krasnoyarsk, Russia
ICMSIT-3037	Fixing a comfort cabin level in modern mining excavators	N V Dyorina, V S Velikanov, E A Gasanenko and Yu V Yuzhakova	Nosov Magnitogorsk State Technical University
ICMSIT-3038	Study of a swirling gas jet emanated from a vortex jet gripper onto a plain barrier	O V Konishcheva, E V Briukhovetskaia, M V Brungardt1 and A N Shhepin	Siberian Federal University
ICMSIT-3039	Study of external impacts on composite materials	D I Baidakov and L Yu Komarova	Moscow Polytechnic University, Moscow, Russia
ICMSIT-3040	The impact of viscosity and propagation velocity of the flow on the initiation of the cavitation in a gear pump	A S Lunev, A S Kaverzina, A A Nikitin, A V Novik and V A Kramarenko	Siberian Federal University, Krasnoyarsk, Russia
ICMSIT-3041	Seed distribution by the coulter for the subsoil broadcast seeding	E P Alekseev, I I Maksimov and E A Maksimov	Chuvash State Agricultural Academy, Cheboksary, Tsivilsky agricultural engineering College of the Ministry of education of Chuvash Republic, Tsivilsk, Russia

ICMSIT-3042	Ensuring safe operation of the piping connection of apparatus column type	Z R Mazina, S Zh Seysenov, S Sh Abyzgildina and R R Tlyasheva	Ufa state petroleum technological university, Ufa, Russia
ICMSIT-3043	The influence of polyethylene processing on the plastic containers blowing	Antypas Imad Rezakalla	Don State Technical University
ICMSIT-3044	Investigation of the dynamics of the manipulator drive with a stepper motor	R T Emelyanov, A S Klimov, I B Olenev, E S Turysheva and A I Avlasevich	Siberian Federal University, Krasnoyarsk, Russia
ICMSIT-3045	Economic assessment when creating a comfortable operational environment for a mining excavator operator	V S Velikanov, N V Dyorina, E I Rabina and T Yu Zalavina	Nosov Magnitogorsk State Technical University
ICMSIT-3046	Influence of processing in a microwave electromagnetic field on the parameters of vibromicrowave processes generated by impact of a solid in cured polymer composite materials under the influence of climatic factors	I V Zlobina, N V Bekrenev	Yuri Gagarin State Technical University of Saratov
ICMSIT-3047	Method of formation of control signal of adaptive gripper drive	Yu I Zhdanova, V V Moshkin and I G Zhidenko	MIREA - Russian Technological University, Moscow, Russia
ICMSIT-3048	The influence of the environment on the temperature state of structural elements of offshore stationary platform	I V Starokon	Russian state university of oil and gas named by I.M. Gubkin
ICMSIT-3049	Power and fuel efficiency of a diesel engine with separate feed	A A Anfilatov and A N Chuvashv	Vyatka State Agricultural Academy, Kirov, Russia
ICMSIT-3050	The effect of methanol combustion with separate feed in a diesel engine on emissions of toxic components	A A Anfilatov	Vyatka State Agricultural Academy, Kirov, Russia

ICMSIT-3051	High-temperature installation for testing composite ceramic materials for friction and wear	Roshchin M. N.	Mechanical Engineering Research Institute, Russian Academy of Sciences. Moscow, Russia
ICMSIT-3052	The effect of changing the spray angle of the irrigation device on the spray diameter	I.R. Antypas ., A.G. Dyachenko , T.P. Savostina	Don State Technical University (Rostov-on-Don, Russia)
ICMSIT-3053	Study of the working process of a diesel engine using diesel fuel and methanol	A A Anfilatov and A N Chuvashv	Vyatka State Agricultural Academy, Kirov, Russia
ICMSIT-3054	Oscillating method for monitoring the technical condition of the hydraulic cylinders of manipulator machines	A I Pavlov, A A Tarbeev, A V Egorov, I A Polyanin, S Ya Alibekov, A V Lysyannikov, Yu F Kaizer and T Y Matkerimov	Volga State University of Technology, Yoshkar–Ola; Siberian Federal University, Krasnoyarsk, Russia; Kyrgyz State Technical University, Bishkek, Kyrgyzstan
ICMSIT-3055	Holographic 3-D control devices of the new generation	E A Belkin, V N Poyarkov and O I Markov	Bolhov Plant of semiconductor devices, Bolhov, Russia; Orel State University named after I.S. Turgenev, Orel, Russia
ICMSIT-3056	Method to improve the accuracy of navigation definitions	I N Sushkin, D E Korshunov, R A Ruf, A G Grigorev	Siberian Federal University, Krasnoyarsk, Russia
ICMSIT-3057	Research of corrosion processes in body material of electrical dehydrator	E V Khasbutdinova, E A Naumkin, A A Elizariev, P A Kulakov and A V Rubtsov	Ufa State Petroleum Technological University, Ufa, Russia
ICMSIT-3058	Hudrodynamic vibration of knife refiner	S N Vikharev	Faculty of technical mechanics and the equipment of pulp-and-paper manufactures, Ural State Forest Engineering University, Ekaterinburg, Russia
ICMSIT-3059	Determination of Newtonian fluid viscosity and design constants of a rotary viscometer	I P Kondrashov, P L Pavlova and P M Kondrashov	AO «OKB ZENIT», Krasnoyarsk, Russia, Siberian Federal University, Krasnoyarsk, Russia

ICMSIT-3060	Improvement of the plane-parallel movement of the attachment of the feller-bunchers machine LP-19	E N Bogdanov, A V Egorov, I A Polyandin, A V Lysyannikov, Yu F Kaizer, R B Zelykevich, A V Kuznetsov and T Y Matkerimov	Volga State University of Technology, Yoshkar–Ola; Siberian Federal University, Krasnoyarsk; Krasnoyarsk State Agrarian University, Krasnoyarsk, Russia; Kyrgyz State Technical University, Bishkek, Kyrgyzstan
ICMSIT-3061	Automation of control of electric generators from renewable energy sources in hybrid power supply systems	Georgij I Kol'nichegko and Yakov V Tarlakov	Bauman Moscow State Technical University
ICMSIT-3062	Develop of reconfigurable manufacturing plant	A V Gurjanov, A V Shukalov, D A Zakoldaev, I O Zharinov	Stock Company «Experimental Design Bureau «Electroavtomatika» named after P A Yefimov, Saint Petersburg; ITMO University, Saint Petersburg, Russia
ICMSIT-3063	Clustering the forest waste processing enterprises	Yu A Anikina, T V Zelenskaya and Yu N Malanina	Reshetnev Siberian State University of Science and Technology, Krasnoyarsk; Irkutsk State Transport University, Irkutsk, Russia
ICMSIT-3064	Quality assurance in the process of machining of parts made of heat-resistant alloys with the help of abrasive electrochemical grinding	A D Mingazhev, L A Taimasova, D V Gunderov, and V A Gafarova	Ufa State Petroleum Technological University, Ufa, Russia; Iskra Innovation, Research and Technology Center OJSC, Ufa, Russia; The Institute of Molecule and Crystal Physics at the Ufa Research Center of the Russian Academy of Sciences, Ufa, Russia
ICMSIT-3065	Compensation method of long high pressure hose coating formation	A D Mingazhev, N K Krioni, and V A Gafarova	Ufa State Aviation Technical University, Ufa, Russia; Ufa State Petroleum Technological University, Ufa, Russia
ICMSIT-3066	Indicators of the processes of combustion and soot content in the cylinder of a car diesel engine of 4CH 11,0 / 12,5 when working on an alcohol-fuel emulsion	V A Likhanov, A V Rossokhin and R R Devetyarov	FSBEI HE Vyatka State Agricultural Academy, Kirov, Russia
ICMSIT-3067	Method for determining the optimal operating time before replacement of high-pressure hoses of hydraulic drives of transport and technological machines	A I Pavlov, A A Tarbeev, A V Egorov, I A Polyandin, S Ya Alibekov, A V Lysyannikov, Yu F Kaizer and T Y Matkerimov	Volga State University of Technology, Yoshkar–Ola; Siberian Federal University, Krasnoyarsk, Russia; Kyrgyz State Technical University, Bishkek, Kyrgyzstan

ICMSIT-3068	Wheeled tractors adaptation to zonal tillage technologies	N I Selivanov, A V Kuznetsov, V V Averjanov, Yu F Kaizer and A V Egorov	Krasnoyarsk state agrarian university, Krasnoyarsk; Siberian federal university, Krasnoyarsk; Volga State University of Technology, Yoshkar–Ola, Russia
ICMSIT-3069	Measurement of oxide coating thickness in the micro-arc oxidation process	P E Golubkov, E A Pecherskaya1, T O Zinchenko, V A Baranov, G V Kozlov and Y V Shepeleva	Penza State University, Penza, Russia
ICMSIT-3070	Plastic bending of the waveguide tubes with rectangular cross-section	I V Kudryavtsev, M V Brungardt, E S Novikov, P A Rastovtsev and A E Mityaev	Siberian Federal University, Krasnoyarsk, Russia
ICMSIT-3071	Elastic bend of twisted waveguide	I V Kudryavtsev, M V Brungardt, O B Gotseluk, O I Rabetskaya and A A Sharonov	Siberian Federal University, Krasnoyarsk, Russia
ICMSIT-3072	Using the new configuration of the current transformer as a safe current meter	Xenia A Klimenko	Omsk State Technical University, Omsk, Russia
ICMSIT-3073	Synthesis of self-reconfigurable manufacturing systems in engineering	A V Gurjanov, A V Shukalov, D A Zakoldaev, I O Zharinov	Stock Company «Experimental Design Bureau «Electroavtomatika» named after P A Yefimov, Saint Petersburg, , ITMO University, Saint Petersburg, Russia
ICMSIT-3074	Automation of control of electric generators from renewable energy sources in hybrid power supply systems	Georgij I Kolnichenko and Yakov V Tarlakov	Bauman Moscow State Technical University, Moscow, Russia
ICMSIT-3075	Subminiature eddy-current transducer for studying defects in weld joints of high-strength steel	A V Ishkov, S F Dmitriev, A O Katasonov, V N Malikov	Department of technology of construction materials and repair of machines, Altay State Agricultural University, Physical-technical faculties, Altai State University, Barnaul, Russia
ICMSIT-3076	Quantity and quality assesment of multilayer coating adhesion strength	A D Mingazhev, I R Kuzeev, and V A Gafarova	Ufa State Aviation Technical University, Ufa State Petroleum Technological University, Ufa, Russia
ICMSIT-3077	Electrolyte plasma treatment in crossed electric and magentic fields	A D Mingazhev, N K Krioni, and V A Gafarova	Ufa State Aviation Technical University, Ufa State Petroleum Technological University, Ufa, Russia

ICMSIT-3078	Distributed control network for complex radio engineering systems on continuum computers	N L Dembickij, V A Pankratov, A V Timoshenko, A O Zhukov, I N Kartsan, N S Chefonov and V S Chefonov	Moscow Aviation Institute (National Research University), RTI company, Institute of Astronomy of the Russian Academy of Sciences, Shternberg State Astronomical Institute of Lomonosov Moscow State University, Moscow, Russian Technological University, Moscow, Reshetnev Siberian State University of Science and Technology, Innovative scientific and technological center «Granit», Sevastopol, Republic of Crimea, V.I. Vernadsky Crimean Federal University, Simferopol, Republic of Crimea, Siberian Federal University, Krasnoyarsk, Russia
ICMSIT-3079	Indicators of the diesel engine combustion process when working on methanol with DST depending on the load changes in different operating modes	A A Anfilatov and A N Chuvashv	Department of thermal engines, automobiles and tractors, Vyatka State Agricultural Academy, Kirov, Russia
ICMSIT-3080	Improving the efficiency of a hydraulic drive with a closed circulation system	R T Emelyanov, A S Klimov, K S Kravtsov, I B Olenev and E S Turysheva	Siberian Federal University, Krasnoyarsk, Russia
ICMSIT-3081	Study driving dynamics of the machine-tractor unit on a virtual stand with obstacles	M N Lysych	Voronezh State University of Forestry and Technologies named after G.F. Morozov, Voronezh, Russian Federation
ICMSIT-3082	Analysis of diesel engine indicator diagrams when working on methanol with DST	R R Devetyarov and A N Chuvashv	Department of thermal engines, automobiles and tractors, Vyatka State Agricultural Academy, Kirov, Russia
ICMSIT-3083	Investigation of The Impact behavior for Composite Materials reinforced by Glass Fibers	Amer Karnoub, Hajian Huang, Antypas Imad Rezakalla	Institute of Polymers, Department of Materials, Switzerland, Don State Technical University (Rostov-on-Don, Russia)
ICMSIT-3084	New method for monitoring the residual life of high pressure hoses	A I Pavlov, A A Tarbeev, A V Egorov, I A Polyanin, S Ya Alibekov, A V Lysyannikov, Yu F Kaizer and J S Sharshembiev	Volga State University of Technology, Yoshkar-Ola; Siberian Federal University, Krasnoyarsk, Russia; Kyrgyz National Agrarian University named after K I Scriabin, Bishkek, Kyrgyzstan

ICMSIT-3085	Investigation of the effect of the method of extracting a part from a mold on the presence of stone-like defects in cast steels	M L Skryabin	Vyatka State Agricultural Academy, Kirov, Russia
ICMSIT-3086	Self-oscillation in agricultural mobile machine units	S A Partko and A N Sirotenko	Don State Technical University, Rostov-on-Don, Russia
ICMSIT-3087	Automation of management and control system for wellhead equipment of a production well	V A Kramarenko, A S Lunev, Yu F Kaizer, V L Tyukanov, A V Lysyannikov, A V Kuznetsov, Ch D Chavyraa and J S Sharshembiev	Siberian Federal University, Krasnoyarsk, Russia; Krasnoyarsk State Agrarian University, Krasnoyarsk, Russia; Tuva State University, Kyzyl, Russia; Kyrgyz National Agrarian University named after K. I. Scriabin, Bishkek, Kyrgyzstan
ICMSIT-3088	Spectral method for monitoring the technical condition of hydraulic drives of forest harvester machines	A I Pavlov, A A Tarbeev, A V Egorov, I A Polyaniin, S Ya Alibekov, A V Lysyannikov, Yu F Kaizer and J S Sharshembiev	Volga State University of Technology, Yoshkar-Ola; Siberian Federal University, Krasnoyarsk, Russia; Kyrgyz National Agrarian University named after K I Scriabin, Bishkek, Kyrgyzstan
ICMSIT-3089	Features of metrological support of the life cycle of special machines for agriculture	G I Bondareva, A V Evgrafov, A Yu Ermolaeva	All-Russian research Institute of hydraulic engineering and land reclamation. A. N. Kostyakova, Moscow, Russia
ICMSIT-3090	A logical model of the distributed corporate network of an insurance company	Gamid Kh. Irzaev, Mariam G. Adeeva and Naida M. Gadzhieva	Daghestan State Technical University, 367015, Makhachkala, Russia
ICMSIT-3091	Wide-angle antenna systems with mechano-electrical beam steering	Ye A Litinskaya, A V Stankovsky, S V Polenga and Yu P Salomatov	Siberian Federal University, Krasnoyarsk, Russia
ICMSIT-3092	Typology of innovation strategies for petrochemical enterprises	N V Barsegyan, I G Salimyanova and E R Kushaeva	Kazan National Research Technological University, Kazan; St. Petersburg State University of Economics, St. Petersburg; Nizhnekamsk Institute of Chemical Technology (branch) of the Kazan National Research Technological University, Nizhnekamsk

ICMSIT-3093	Control of indexes of thermal-oxidative stability of mineral engine oil in severe service conditions	V I Afanasov, A S Lunev, A N Sokolnikov, V I Vereshchagin and V V Abramov	Siberian Federal University, Krasnoyarsk, Russia.
ICMSIT-3094	Vibration damper-calibrator for shock wave damping from sharp bit installation on the bottomhole	K A Bashmur, A V Zagulyaev, E A Petrovsky, V V Bukhtoyarov and V V Kukartsev	Siberian Federal University; Reshetnev Siberian State University of Science and Technology, Krasnoyarsk, Russia
ICMSIT-3095	Implementation of optimality criteria in the design of communication networks	B F Melnikov, V Y Meshchanin and Y Y Terentyeva	Shenzhen MSU – BIT University, Shenzhen, China; Center of Information Technologies and Systems for Executive Power Authorities (Federal state Autonomous Research Institution), Moscow
ICMSIT-3096	Analysis of indicators of the working process of diesel engine when operating on methanol	A N Chuvashov and A I Chuprakov	Department of thermal engines, automobiles and tractors, Vyatka State Agricultural Academy, Kirov, Russia
ICMSIT-3097	Investigation of the torque electric drive of the enclosing structure at low temperatures	A S Klimov, V V Servatinsky, E Y Yanaev, R V Volkov and A S Stepanyan	Siberian Federal University, Krasnoyarsk, Russia
ICMSIT-3098	Possible expanding of the metrology object on the example of industrial enterprises management assessment	V A Ogloblin, Yu N Malanina and M V Vikhoreva	Irkutsk State Transport University, Irkutsk, Russia
ICMSIT-3099	Correction of form errors during centerless grinding of balls	O P Reshetnikova, B M Iznaïrov, A N Vasin, N V Belousova and A V Panfilova	Yuri Gagarin State Technical University of Saratov, Saratov, Russia
ICMSIT-3100	Modernization of a tractor motor for diesel combustible and methanol	A A Anfilatov	Vyatka State Agricultural Academy, Kirov, Russia
ICMSIT-3101	Modelling of dimension chains of pressure control devices	P G Mikhailov, B V Chuvykin, A P Mikhailov, E D Fadeev and A V Sokolov	Penza state technological University, Penza state University Penza, PLC SYSTEM Ltd Moscow Russia
ICMSIT-3102	Analysis of the possibility of modernization of the state district power station by building the combined cycle plant	D S Balzamorov, E Yu Balzamorova, V V Bronskaya, T V Ignashina and O S Kharitonova	Kazan State Power Engineering University, Kazan National Research Technological University, Kazan, Russian Federation

ICMSIT-3103	System for measurement and control of drill string vibration	K A Bashmur, E A Petrovsky, V V Bogachev, V V Kukartsev and V S Tynchenko	Siberian Federal University; Reshetnev Siberian State University of Science and Technology, Krasnoyarsk, Russia
ICMSIT-3104	Pulse safety device with adaptive controller for technical systems with high reliability requirements	K S Terasmes, E A Petrovsky, K A Bashmur, V S Tynchenko and V V Kukartsev	Siberian Federal University; Reshetnev Siberian State University of Science and Technology, Krasnoyarsk, Russia
ICMSIT-3105	Stability study of magnetoelastic damper of high-speed machines	E A Kozhukhov, E A Petrovsky, O A Kolenchukov, K A Bashmur and V S Tynchenko	Siberian Federal University; Reshetnev Siberian State University of Science and Technology, Krasnoyarsk, Russia
ICMSIT-3106	Control of geometric characteristics of surface micro-relief in metal turning using nanodiamond powders	E A Petrovsky, K A Bashmur, V S Tynchenko, V V Bukhtoyarov, N V Bizyukov and V V Kukartsev	Siberian Federal University; Reshetnev Siberian State University of Science and Technology, Krasnoyarsk, Russia
ICMSIT-3107	Investigation of local maxima of the modified modular correlation function	D M Malinichev, E A Melnikova and Y V Prus	Russian State Social University, Moscow, Russia; Gubkin Russian State University of Oil and Gas, Moscow, Russia
ICMSIT-3108	Quality estimation of the technology process controlling system of making the glass rods	L B Alekseeva	Saint-Petersburg Mining University
ICMSIT-3109	The study of influence of chemical composition of steel 35HGSL on the characteristics of shrinkage, casting defects and microstructure	M L Skryabin	Vyatka State Agricultural Academy, Kirov, Russia
ICMSIT-3110	Application of additive technologies for manufacturing turbine stator parts in aircraft engines	A V Balyakin, R A Vdovin and S S Ispravnikova	Samara University., Samara, Russia
ICMSIT-3111	Marginal reserve: determination, calculation and estimates	G S Sadykhov, S S Kudryavtseva	Bauman Moscow State Technical University
ICMSIT-3112	Identification of object on an emitted signal based on matrixes of a bispectrum and indicator characteristics of Fourier spectrum	R A Krupchatnikov, M V Artemenko and N M Kalugina	Kursk State Agricultural I.I. Ivanov Academy, Kursk, Russia; Southwest State University, Kursk, Russia

ICMSIT-3113	Enhanced heat flow control sensor application for early fire detection	S V Klochkov, A N Minkin, S N Masaev, A A Krexov	Siberian Federal University, Krasnoyarsk, Russia; Siberian Fire and Rescue Academy, Zheleznogorsk, Russia
ICMSIT-3114	Commissioning and Start-up / Shut-down of the ethanol production plant	Ibragim M Bamatov and Dzhabrail M Bamatov	Chechen State University, Grozny State Oil Technical University named after Academician M. D. Millionshchikov, Grozny: Russia
ICMSIT-3115	Selection the optimal value of the smoothed variable during the PVD coating thickness calculation	A V Oleinik	Ufa State Aviation Technical University (USATU), Ufa, Russia

Section 4. Instrumentation Technologies and Environmental Engineering

ICMSIT-4001	Application of a microspectral analysis for evaluation of the morphofunctional status of immunocompetent cells in cattle with retroviral diseases	D A Artemev, A V Krasnikov, E S Krasnikova, S A Kalganov and E A Markova	Saratov State Vavilov Agrarian University, Saratov; Michurinsk State Agrarian University, Michurinsk, Russia
ICMSIT-4002	Development of a program for converting diesel engines to natural gas	V A Likhanov and O P Lopatin	Vyatka State Agricultural Academy, Kirov, Russia
ICMSIT-4003	An automatic test complex for unmanned aerial vehicle engines	O V Drozd and P V Avlasko	Siberian Federal University, Krasnoyarsk, Russia
ICMSIT-4004	Chemistry of the process of formation of nitrogen oxides in the combustion chamber of gas-diesel	O P Lopatin	Vyatka State Agricultural Academy, Kirov, Russia
ICMSIT-4005	Building a model for recognition of morphostructure pathologies in animal tissues	S N Kostarev, T G Sereda and N A Tatarnikova	Perm Military Institute of National Guard Troops of the Russian Federation; Perm State Agrarian-Technological University named after academician DN Prianishnikov; Perm National Research Polytechnic University, Perm, Russia
ICMSIT-4006	Development of Levenberg-Marquardt theoretical approach for electric networks	A Mikhaylov and S Tarakanov	Plekhanov Russian University of Economics, Russia; Financial University under the Government of the Russian Federation, Russia

ICMSIT-4007	Features of translucent materials and products defects detection with support of optical system	V V Bulatov and A A Kul'chitskii	Saint Petersburg State University of Aerospace Instrumentation; Saint-Petersburg Mining University, St. Petersburg, Russia
ICMSIT-4008	Neural network model of machine parts classification by optical scanning results	V A Pechenin, M A Bolotov and E Yu Pechenina	Samara University, Samara
ICMSIT-4009	Drivers alert system in the conditions of information shortage	R S Glukhikh, E V Grazhdantsev, V A Zeer, P A Rastovtsev and A I Elagin	Polytechnic School, Siberian Federal University, 79 Svobodny pr., 660041 Krasnoyarsk, Russia
ICMSIT-4010	Determination of measurement errors for the tribological properties of the carbon-carbon composite in aircraft brakes	V Alisin	Blagonravov Institute of Mechanical Engineering, Russian Academy of Sciences (IMASH RAN)
ICMSIT-4011	Use of infrared thermography to control osteoreparative and integrative processes during implantation in animals	A V Krasnikov and E S Krasnikova	Michurinsk State Agrarian University, Michurinsk, Russia
ICMSIT-4012	Apparatus for controlling the amount of undissolved gas in the hydraulic fluid	A S Lunev, A A Nikitin, V A Ionova, A V Novik and V A Kramarenko	Siberian Federal University, Krasnoyarsk, Russia
ICMSIT-4013	Metrological assurance of the research on corrosion characteristics of magnetic nanodispersed lubricants	A N Bolotov, V V Novikov, O O Novikova	Tver State Technical University
ICMSIT-4014	Ultrasonic method and other methods of control of undissolved gas in the working fluid	A S Lunev, A A Nikitin, V I Afanasov, A V Novik and V A Kramarenko	Siberian Federal University, Krasnoyarsk, Russia
ICMSIT-4015	Application of stochastic control method on manifold at immunology problem	S I Kolesnikova and V A Avramyonok	St.Petersburg State University of Aerospace Instrumentation
ICMSIT-4016	Investigation of Micromechanical Properties of Fused Alumina and Silicone Carbide Grains	O Pushkarev and Yu Bagaiskov	Volzhsky Polytechnic Institute (branch) of the Volgograd State Technical University, Volzhsky, Volgograd Region, Russia

ICMSIT-4017	Development of national standards for the needs of the water industry on the examples of the aluminum polyoxychloride reagent	Georgy A. Samburskiy, Olga V. Ustinova, Anton M. Pogorely	Russian water and Wastewater Association, Moscow, MIREA – Russian Technological University, Moscow, Technical Committee for standardization TC 343 «water Quality» Rosstandart, Moscow, Russia)
ICMSIT-4018	Determination of composition of galvanic composites by microhardness method	Yu E Kisel, V V Kamynin, G V Guryanov, D A Bezik, V A Bezik, L M Markaryants	Department of Mechanics, Bryansk State Engineering Technological University, Bryansk, Russian Federation, Department of Energy Systems, Bryansk State Agrarian University, Bryansk, Russian Federation, Department of Foreign Languages, Moscow State Linguistic Universit, Moscow, Russian Federation
ICMSIT-4019	Thermal-oxidative stability control of motor oils by thermal energy, with cyclic temperature change	B I Kovalsky, V G Shram, O N Petrov, V I Vereshchagin and A N Sokolnikov	Siberian Federal University
ICMSIT-4020	The use of logical-linguistic apparatus to describe the functioning of medical systems	L A Korobova and I A Matytsina	Voronezh state University of engineering technologies, Voronezh, Russia
ICMSIT-4021	Assessment of the influence of measurement error on the quality of selective assembly	Pavel V Golnitskiy, Uliana Yu Antonova	Russian State Agrarian University – Moscow Timiryazev Agricultural Academy
ICMSIT-4022	Development of the point scoring system of medical parameters for HIV severity monitoring and modeling in numerical terms	D S Ponomarev, S B Ponomarev, E L Averyanova, V E Polishchuk and A A Burt	Research Institute of the Federal Penitentiary Service of Russia, Moscow, Russia; Pskov State University, Pskov
ICMSIT-4023	«Digital Twin» Technology in Medical Information Systems	O E Bezborodova, O N Bodin, A I Gerasimov, M N Kramm, R F Rahmatullof and A G Ubiennykh	Penza state University, Moscow Power Engineering Institute (MPEI)
ICMSIT-4024	Soft measurements in technological processes control	L P Vershinina and M I Vershinin	Federal state Autonomous educational institution of higher education "Saint-Petersburg State University of Aerospace Instrumentation", Saint-Petersburg, Russia; Federal state budgetary educational institution of higher education "Saint-Petersburg Mining University", Saint-Petersburg, Russia

ICMSIT-4025	Impedance measurement: transformation of the probability density function of the results uncertainty	V A Baranov, M G Myasnikova, E A Pecherskaya, A V Pushkareva, B V Cypin	Penza State University, Penza State Technological University, Penza, Russia
ICMSIT-4026	Analysis of regulatory documentation for thickness of coatings of materials and products	V S Sekatsky, O A Gavrilova, N V Merzlikina, Yu A Pikalov and I A Kaposhko	Siberian Federal University, Krasnoyarsk, Russia
ICMSIT-4027	The study of the wear of the control knives of the straw chopper	A V Ishkov, V N Malikov	Department of technology of construction materials and repair of machines, Altay State Agricultural University, Physical-technical faculties, Altai State University, Barnaul, Russia
ICMSIT-4028	Information-analytical system of cardiographic information functional diagnostics	V V Grigorenko, V M Eskov, N B Nazina and A A Egorov	Surgut State University, Surgut, Russia; Federal scientific center Research Institute for system research of the Russian Academy of Sciences, Moscow, Russia
ICMSIT-4029	Surgical tool positioning device for hardware and software system of informational support of a surgeon during the low-invasive surgery	V A Gryazin, I N Bagautdinov, A A Baev, A V Egorov, A V Lysyannikov, Yu F Kaizer, E D Agafonov and J S Sharshembiev	Volga State University of Technology, Yoshkar-Ola; Siberian Federal University, Krasnoyarsk, Russia; Kyrgyz National Agrarian University named after K I Scriabin, Bishkek, Kyrgyzstan
ICMSIT-4030	Selection of effective criteria for determining the volume of measurements	N N Barbashov, L R Abdullina	Bauman Moscow State Technical University, Moscow
ICMSIT-4031	Method of diagnostics of the rotor eccentricity of an induction motor	A Yu Prudnikov, V V Bonnet and A Yu Loginov	Irkutsk State Agricultural University named after A.A. Ezhevsky
ICMSIT-4032	Adaptive method of controlling dynamic processes in non-deterministic systems	N I Gdansky and A V Karpov	K.G. Razumovsky Moscow State University of technologies and management (the First Cossack University), Moscow, Russia; Russian State Social University, Moscow, Russia
ICMSIT-4033	Analysis of the formation and evaluation of performance indicators and efficiency of the organization's management system processes	A L Akhtulov, L A Ivanova and E B Charushina	Omsk Tank-automotive Engineering Institute, Omsk, Russia; Omsk State Technical University, Omsk, Russia
ICMSIT-4034	The formation of control actions in the automatic climate control system in the production of electronics based on the inclusion	N A Aleshkin, A P Aleshkin and A A Petrushevskaya	Saint-Petersburg State University of Aerospace Instrumentation (SUAI), St. Petersburg, Military Space Academy named after A F Mozhaysky of the Ministry of

	of a fuzzy controller in the recurrence algorithm		Defense of the Russian Federation, St. Petersburg, Russia
ICMSIT-4035	Geoinformation modelling of quotas distribution of technogenic load for water users	N A Zhilnikova	Saint-Petersburg State University of Aerospace Instrumentation
ICMSIT-4036	Problems and ways to reduce measurement uncertainties in evaluating the geometric assembly parameters of gas turbine engine assemblies	I A Grachev, M A Bolotov, E V Kudashov, V A Pechenin	Samara University, Institute of Engines and Power Plants, Samara, Russia
ICMSIT-4037	Development of the point scoring system of medical parameters for HIV severity monitoring and modeling in numerical terms	D S Ponomarev, S B Ponomarev, E L Averyanova, V E Polishchuk and A A Burt	Research Institute of the Federal Penitentiary Service of Russia, Moscow, Russia; Pskov State University, Pskov
ICMSIT-4038	Assessment of the state of a lubricator by the size of the acoustic signal in a loaded pair of friction of a mining machine transmission	Knyazkina Valeriya Ivanovna, Safronchuk Kristina Albertovna, Ivanov Sergey Leonidovich, Pumpur Evgeny Viktorovich	Saint-Petersburg Mining University, Saint-Petersburg, Russia
ICMSIT-4039	Analytical research of heat and mass transfer in bulks of food raw materials in the presence of self-heating hearths	G V Alekseev, B A Voronenko, O A Egorova, A G Leu and M V Goncharov	University ITMO Saint-Petersburg; Branch of the "national research University "MPEI" in Smolensk, Smolensk, Russia
ICMSIT-4040	Applying the Data Envelopment Analysis method for evaluating the efficiency of the complex system operations in fuel and energy companies	M Pokushko, A Stupina, I Medina - Bulo, E Dresvianskii, E Mashinets and Zh Shmeleva	Siberian Federal University, Krasnoyarsk, Russia; Reshetnev Siberian State University of Science and Technology, Krasnoyarsk, Russia; Krasnoyarsk State Agrarian University, Krasnoyarsk, Russia; University of Cadiz, Puerto Real, Spain
ICMSIT-4041	Algorithmic methods of increasing the accuracy of analog blocks of measuring channels of control systems and control	O A Jumaev, M T Ismoilov, G B Mahmudov and M F Shermurodova	Department of Automation and Control, Faculty of Automation, Navoi State Mining Institute, Navoi, Uzbekistan
ICMSIT-4042	Nonlinear SVD – filtration in hemodynamic parameters evaluation hydro-cuff systems.	M S Gerashchenko, M V Markuleva, S I Gerashchenko, A D Semenov and A N Mitroshin	Penza State University, Penza, Russia

ICMSIT-4043	Increasing supporting rod porcelain isolate at electric power substations	A S Lukovenko, V V Kukartsev, V S Tynchenko, K A Bashmur, V A Kukartsev and A I Cherepanov	Reshetnev Siberian State University of Science and Technology; Siberian Federal University; The branch of JSC «FGC UES» Krasnoyarsk enterprise MES Siberia, Krasnoyarsk, Russia
ICMSIT-4044	The effect of fast crystallization ligature modification on the microstructure of aluminum alloys	A I Cherepanov, V A Kukartsev, V S Tynchenko, V V Kukartsev, E I Semenova, S V Aponasenko and K A Bashmur	Siberian Federal University; Reshetnev Siberian State University of Science and Technology, Krasnoyarsk, Russia
ICMSIT-4045	SCADA system for laboratory research automation in determining the water proportion in oil	M P Serzhantova, V S Tynchenko, V V Bukhtoyarov, K A Bashmur, V V Kukartsev, V V Tynchenko and V E Petrenko	Siberian Federal University; Reshetnev Siberian State University of Science and Technology, Krasnoyarsk, Russia
ICMSIT-4046	Control of the process of wear of the tribosystems based on the optical density of the lubricating oil using neural network models	Shram VG, Agafonov ED, Orlovskaya NF, Vashchenko GV and Sharshembiev JS	Siberian Federal University, Krasnoyarsk, Russia, KNAU named after KI Skryabin, Bishkek, Republic of Kyrgyzstan
ICMSIT-4047	The oil spills stopping device for oil pipelines	O N Petrov, D V Agrovichenko, A N Sokolnikov and V I Vereshchagin	Siberian Federal University , Krasnoyarsk, Russia
ICMSIT-4048	Research of efficiency of regular separation pack made of corrugated metal sheets	V G Afanasenko, P A Kulakov, A V Rubtsov, O S Ivanov and G I Rahmaeva	Ufa State Petroleum Technological University
ICMSIT-4049	Mathematical models of beam input and output in the process of electron beam welding of thin-walled structures	S O Kurashkin, V S Tynchenko, Yu N Seregin, V E Petrenko, A V Milov and A V Murygin	Reshetnev Siberian State University of Science and Technology, Krasnoyarsk, Russia
ICMSIT-4050	Mathematical functional for thermal distribution calculating during the electron-beam welding process	S O Kurashkin, Yu N Seregin, V S Tynchenko, V E Petrenko and A V Murygin	Reshetnev Siberian State University of Science and Technology; Siberian Federal University, Russia
ICMSIT-4051	The development of digital device for current, voltage, power measuring and simulation results in proteus environment	Xenia A Klimenko	Omsk State Technical University, Omsk

ICMSIT-4052	Design development and evaluation of the efficiency of the regular separation pack	V G Afanassenko, P A Kulakov	Ufa State Petroleum Technological University
ICMSIT-4053	Promising methods for strengthening piston aluminum alloys of heat engines	M L Skryabin and A V Grebnev	Vyatka State Agricultural Academy, Kirov, Russia
ICMSIT-4054	Modeling the stressed-deformed state of a technological tank with a mechanical defect of type "dent"	A V Rubtsov, P A Kulakov, Z R Mukhametzyanov, M I Bayazitov and A R Farshatov	Ufa State Petroleum Technological University, Ufa, Russia
ICMSIT-4055	Concept of a new method for continuous non-destructive control of asphalt road pavements compaction	A P Prokopev, Zh I Nabizhanov, V I Ivanchura and R T Emelyanov	Siberian Federal University
ICMSIT-4056	The role of regional industry standardization in the regional product branding system	E A Demakova, T G Butova, E B Bukharova, N V Klimovich and L A Danchenok	Siberian Federal University, Krasnoyarsk; Plekhanov Russian University, Moscow, Russian Federation
ICMSIT-4057	The assessment of damage and resource of vessel and apparatus elements, taking into account the adaptation of the material to long-term quasistatic loading	Yu S Kovshova, I R Kuzeev and E A Naumkin	Ufa State Petroleum Technical University, Ufa, Russia
ICMSIT-4058	Automated measurements in process monitoring system in bearing production	A A Ignatiev, B A Dobryakov, C A Ignatiev, A Kazinsky, T G Nasad and I P Nasad	Yuri Gagarin State Technical University of Saratov
ICMSIT-4059	Joint influence of the wheel group on vehicle motion parameters	A S Baranov and A S Pavlyuk	Altai State Technical University, Barnaul, Russia
ICMSIT-4060	Using natural and technical systems of the Leningrad region for waste disposal	K Epifancev	St. Petersburg State University of Aerospace Instrumentation
ICMSIT-4061	Technological characteristics of assembly procedure for fiber-optic sensors of fluid media parameters	T I Murashkina, E A Badeeva, N A Khasanshina, E A Shachneva and E A Polyakova	Penza State University, Penza, Russia

ICMSIT-4062	Study of heat transfer in the disk of a regenerative crystallizer	Yu S Kovshova, D Yu Krasnichkov, M I Bayazitov	Ufa State Petroleum Technical University, Ufa, Russia
ICMSIT-4063	The application of artificial intelligence in radiology	V S Magomadov	Chechen State University
ICMSIT-4064	OVERVIEW OF TURBOGENERATOR MONITORING AND DIAGNOSTIC SYSTEMS	R N Polyakov, N V Krupenin, I E Kudryavcev, A V Belyaev, I V Belyaev, V V Romanov and I N Stebakov	Orel State University named after I.S. Turgenev, Orel, Russia; JSC "NPO VEI Electroizolyatsia", Moscow, Russia
ICMSIT-4065	Tunable band-pass filter for continuous spectral analysis of cardiointervalogram	A B Belov, A A Anisimov, T V Sergeev and N B Suvorov	Department of Ecological Physiology, Federal State Budgetary Scientific Institution «Institute of Experimental Medicine»; Department 24 of Medical Electronics, Saint-Petersburg State University of Aerospace Instrumentation, Saint-Petersburg, Russia
ICMSIT-4066	Model to improve the quality of additive production by forming competencies in training for high-tech industries	A V Chabanenko, V V Kurlov and A C Tour	Saint-Petersburg State University of Aerospace Instrumentation
ICMSIT-4067	Theoretical study of forest fire extinguishing machine use	M A Gnusov, M V Drapalyuk and D Yu Druchinin	State University of Forestry and Technologies named after G.F. Morozov, Voronezh, Russian Federation
ICMSIT-4068	Quality assessment of the fuel preparation production process at thermal power plants	Ya A Tynchenko and I V Kovalev	Reshetnev Siberian State University of Science and Technology, Krasnoyarsk, Siberian Federal University, Krasnoyarsk, Krasnoyarsk State Agrarian University, Krasnoyarsk, Russian Federation
ICMSIT-4069	Modern technological trends in the development of the ecosystem of cargo UAVs	I V Kovalev and A A Voroshilova	Siberian Federal University, China Aviation Industry General Aircraft Zhejiang Institute Co., Ltd China, Krasnoyarsk Science and Technology City Hall
ICMSIT-4070	Metrology and standardization in pressureless flows	S N Fedorov, A D Smolnikov and P S Palyanitsin	St. Petersburg Mining University, St. Petersburg, Russia

ICMSIT-4071	Analysis of permafrost conditioning in the oil field	A B Feodorov, A V Egorov, P L Pavlova, L I Sviridov and V N Zagorulko	Siberian Federal University, Krasnoyarsk, Russia ElseTech, Krasnoyarsk, Russia Volga State University of Technology, Yoshkar-Ola, Russia
ICMSIT-4072	Statistical study of the impact of climate warming on productivity	A P Zinchenko, O B Tarasova and N I Pyzhikova	Russian State Agrarian University - Moscow Timiryazev Agricultural Academy, Moscow, Krasnoyarsk State Agrarian University, Krasnoyarsk, Russia
ICMSIT-4073	Block diagrams of a doubly fed inductor motor as a control object	Sergej Bronov, Pavel Avlasko, Nikolaj Nikulin, Aleksej Bisov, Darya Krivova and Elena Stepanova	Institute of Space and Information Technologies, Siberian Federal University, Krasnoyarsk; Department of Information Technology and Systems, Krasnoyarsk State Agrarian University, Krasnoyarsk, Russia
ICMSIT-4074	Performance-increasing technique in micromechanical accelerometer development		Saint-Petersburg State University of Aerospace Instrumentation
ICMSIT-4075	The algorithm for determining the effect on the dynamic characteristics of the fuel composition on the properties of the working process of the gas-diesel engine	A L Akhtulov, S E Dadayan and V V Maly	Omsk Tank-automotive Engineering Institute, Omsk, Russia
ICMSIT-4076	Personnel support for innovative economic development in the new normal	G Yu Peshkova, S V Kiselev and I V Zimina	Saint-Petersburg state university of aerospace instrumentation, Saint-Petersburg; Kazan National Research Technological University, Kazan, Russia
ICMSIT-4077	Development of an automated bioimpedance analyzer for monitoring the clinical condition and diagnosis of human body diseases	V V Antipenko, E A Pecherskaya, T O Zinchenko, D V Artamonov, K Yu Spitsina and A V Pecherskiy	Penza State University, Penza, Russia
ICMSIT-4078	Applicability of the reverse engineering model for unification tasks in systems engineering processes of engineering enterprises	S A Nazarevich, A V Vinnichenko and V V Kurlov	Saint-Petersburg State University of Aerospace Instrumentation
ICMSIT-4079	Design of Encoding and Decoding Schemes in Infocommunication Systems using Orthogonal Coding	A V Rabin	Saint-Petersburg State University of Aerospace Instrumentation, St. Petersburg, Russia