

International Scientific Conference on Advances in Applied Physics and Mathematics (AAPM-2023)

Tashkent, Uzbekistan, 10-12 April 2023

Conference Programme

[Link for participants](#)

Section 1. Applied physics

AAPM-1001	Development of appropriate simulated model of a workshop in an engine plant	Khaimovich Irina Nikolaevna, Kokareva Victoria Valarievna, Smelov Vitalyi Gennadievich	Samara University, Samara, Russia
AAPM-1002	Study of the Structural Properties and Electrical Conductivity of the Epoxy/Polyaniline Composites	Nadia Mahdi Salloomi, Hanaa Kadem Essa, Khalid Ghalib Mohammed, Tariq J. Alwan	Mustansiriyah University, College of Education, Physics Department. Baghdad, Iraq
AAPM-1003	Development of specialized disk emitters for the formation of high-intensity ultrasonic fields in gaseous media	Dorovskikh Roman, Puzhaykina Anna, tertishnikov Pavel, Shalunov Andrey, Nesterov Victor	Biysk Technological Institute (branch) FSBEI HE "Altai State Technical University. I.I. Polzunov, Biysk, Russia
AAPM-1004	Analytical dynamic modeling of damping of a multi-hierarchical mechanical system and mobile power engine shaft with the help of multi-mass rheological models	Farkhod Matkurbonovich Matmurodov, PhD, Professor Xamza Xamidulloyevich Boboyev, PhD, associate professor Ikram Nugmanovich Nugmanov, PhD, associate professor Sherzod Sherali ogli Mamirov	Chirchik Higher Tank Command Engineering School, Almalik, Uzbekistan. Almalik branch of Tashkent State Technical University, Almalik, Uzbekistan
AAPM-1005	Dynamic simulation of force loading of drives of mobile power facilities with variable external resistance	Farkhod Matkurbonovich Matmurodov, PhD, Professor Oybek Olimovich Daminov, PhD, Associate Professor, Bozorboy Shomurotovich Sobirov PhD, associate professor; Kholikov Abdiravub Mamarakhimovich	Chirchik Higher Tank Command Engineering School, Chirchik, Uzbekistan; Tashkent State Technical University named after Islam Karimov, Tashkent, Uzbekistan; Urgench branch of the Tashkent University of Information Technologies named after Muhammad al-

			Khwarizmi, Tashkent, Uzbekistan; Scientific Research Institute of Fishery, Tashkent, Uzbekistan.
AAPM-1006	Algorithm of local vertical constructing in systems with panoramic annular lens (PAL)		Moscow State University of Geodesy and Cartography, Moscow, Russian Federation
AAPM-1007	On the equation for the vertical velocity of atmospheric air		Shirshov Institute of oceanology of RAS, Moscow, Russia
AAPM-1008	The structure of the construction of a radar receiver for over-the-horizon detection	S V Litvinov, N A Khamkin and F A Nanay	Russian Technological University (MIREA), Moscow, Russia
AAPM-1009	Regulation of the fuel injection advance angle in a transport diesel engine	V A Markov, V V Furman, S V Plahov, M I Shlenov, L M Yao and A M Siluyanichev	Bauman Moscow State Technical University, Moscow, Russia PPP Dieselavtomatika LLC, Saratov, Russia Kazan Federal University, Kazan, Russia
AAPM-1010	Changes in the thermal characteristics of fullerenes in a nitrogen atmosphere	N M Barbin, L V Yakupova and D I Terent'ev	Ural Institute of the State Fire Service EMERCOM of Russia, Ekaterinburg, Russia; Ural State Agrarian University, Ekaterinburg, Russia
AAPM-1011	Object recognition on radar maps of FMCW radars using three-input convolutional neural networks	X Wu, V D Kuptsov and S I Ivanov	Peter the Great St.Petersburg Polytechnic University, St. Petersburg, Russia
AAPM-1012	Spectral features of structuring fractal objects	Yu Ryzhikova and S Ryzhikov	Lomonosov Moscow State University, Moscow, Russian Federation
AAPM-1013	Effects of pulsed laser hardening of cylindrical surfaces on fatigue behavior	Valery Alisin	Mechanical Engineering Research Institute of the Russian Academy of Sciences Moscow, Russian Federation
AAPM-1014	Destruction rate control in studies of cavitation strength of materials and protective coatings	V Khmelev, R Barsukov, A Barsukov and R Golykh	

AAPM-1015	Determination of regression coefficient for numerical models of adsorption isotherms	Kalistratova Alina Alexandrovna, Spiridonova Irina Alekseevna, Kholzineva Valeriia Olegovna, Nikitin Denis Vadimovich, Vavilov Georgy Davidovich	Bauman Moscow State Technical University (Moscow, Russian Federation), Moscow Polytechnic University (Moscow, Russian Federation), National medical research centre for circulation pathology N.A. Academician E.N Meshalkin (Novosibirsk, Russian Federation)
AAPM-1016	Influence of direct metal deposition modes on the shaping of single tracks and walls made of heat-resistant powder material	M A Oleynik, A V Balyakin, E P Zlobin, E S Goncharov	Department of Engine Manufacturig Technologies, Samara National Research University, Russia
AAPM-1017	Mode restrictions in the power supply system of industrial induction equipment	Kinev E.S., Tyapin A.A., Efimov S.N., Goncharov K.V., Kachan V.V.	Siberian Federal University, Krasnoyarsk Siberian State University of Science and Technology named by Reshetnev, Krasnoyarsk Thermal Electrical Systems LLC, Krasnoyarsk
AAPM-1018	Method and algorithm for simplifying digital measurement procedures of integral parameters of signals	A Mehdiyeva and S Bakhshaliyeva	Azerbaijan State Oil and Industry University, Baku, Azerbaijan
AAPM-1019	Empirical analysis of quantum mechanics and music harmonics	GE MENG/ Wang Yaode	Jiangxi University of Finance and Economics, 330013, No. 169, Shuanggang East Street, Nanchang City, Jiangxi Province, China
AAPM-1020	Science and music: research and exploration on cymatics in sound visualization	Gao Yun/Xia Jiali	Jiangxi University of Finance and Economics, 330013, No. 169, Shuanggang East Street, Nanchang City, Jiangxi Province, China
AAPM-1021	Limit state analysis of the thin-walled shell using a forming limit diagram and finite element modeling	Andrianov I.K., Feoktistov S.I., Chepurnova E.K.	Komsomolsk-na-Amure State University, Komsomolsk-na-Amure, Russia
AAPM-1022	Investigation of stress-strain state of coil of tubular furnace radiant chamber at different arrangement of intermediate support	Yu S Kovshova , A V Rubtsov and A I Chen	Institute of Oil and Gas Engineering and Digital Technology, Ufa State Petroleum Technological University, 1 Kosmonavtov st., 450064, Ufa, Republic of Bashkortostan, Russia
AAPM-1023	Creation of porous synthetic matrices of polylactic acid (PLA) with ibuprofen impregnation using supercritical fluid	E.K. Rastegaev, I.I. Gilmutdinov, N.S. Sandugei, I.V. Kuznetsova, A.N. Sabirzyanov	"Kazan National Research Technological University" Russian Federation, 420015, Kazan

AAPM-1024	Analytical calculation of self-inductance for triangular wires	V Amoskov	D. V. Efremov Scientific Research Institute of Electrophysical Apparatus, St. Petersburg, Russia
AAPM-1025	Consideration of supports stiffness at torsional and longitudinal vibrations of the rod	Ilya Kudryavtsev , Lyubov Malykhina, Viktor Ivanov, Olga Rabetskaya, and Dmitry Shvets	Siberian Federal University, Reshetnev Siberian State University of Science and Technology, Krasnoyarsk, Russia
AAPM-1026	Mechanical and physical aspects of the theory of interaction between a crusher hammer and an air-grain layer	Bespoldenov R.V., Fedorenko I.YA., Zemlyanukhina T.N., Shevtsova L.I., Polkovnikova M.V., Ishkov A.V.	ООО «Агротехновации», Алтайский государственный аграрный университет, г. Барнаул, пр-т Красноармейский, 98, Барнаул; Новосибирский государственный технический университет, Новосибирск, Россия
AAPM-1027	Analysis of the results of experimental studies of a modernized belt conveyor	A. Djuraev, A.S. Jumaev, M.M.Abduraxmanova	Tashkent Institute of Textile and Light Industry, Tashkent Uzbekistan Almalyk branch of Tashkent State Technical University named after Islam Karimov, Tashkent, Uzbekistan
AAPM-1028	Analysis and computational research of line parameters of the spinning line of ring spinning machines	Nurilla Dadakhanov	Namangan Engineering-Technological Institute, Namangan, Uzbekistan.
AAPM-1029	Improvement of the method of calculation of the reduced heat transfer resistance of light openings of buildings	Ochil Komilov and Munira Akhrorova	Bukhara Engineering-Technological Institute, Bukhara, Uzbekistan
AAPM-1030	Microstructure, magnetoresistivity and carrier mobility of HTSC-YBCO tape with pinning centers generated by electron irradiation	E M Ibragimova, M A Mussaeva, A A Shodiev, N E Iskandarov and K T Nazarov	Institute of nuclear physics, p.Ulugbek, Tashkent, Uzbekistan Center for advanced technologies, Ministry of Education, science & innovations, Tashkent, Uzbekistan;
AAPM-1031	Structure and optical properties of crystal $TlIn_{1-x}Cr_xS_2$ ($x=0.01$) irradiated by electrons	M Yu Tashmetov and F K Khallokov	Institute of nuclear physics
AAPM-1032	Investigations of the formation of nanosized objects in manganese implanted silicon single crystals by the methods of Raman scattering of light and atomic force microscopy	E U Arzikulov, F A Salakhitdinov, F Kholmurodov and M D Tashboev	Samarkand State University named after Sharof Rashidov, Samarkand, Uzbekistan. Physical-Technical Institute named after S.U. Umarov of the National Academy of Sciences of Tajikistan, Dushanbe, Tajikistan

AAPM-1033	A study of surface morphology of Fe/p-Si hybrid structure using atom force microscope	E U Arzikulov, A D Nurimov, S Q Axrorov and N Mamatqulov	Institute of Engineering Physics Samarkand state university, Samarkand, Uzbekistan 2Samarkand state university Veterinary Medicine, Livestock and Biotechnologies, Samarkand, Uzbekistan
AAPM-1034	Resonant-dissipative model of ultrafast spin dynamics	M.R. Zhumaev, M.Z. Sharipov and M.N. Rizokulov	Bukhara Engineering-Technological Institute, Bukhara, Uzbekistan
AAPM-1035	Anisotropic scattering of charge carriers in double continuous solid solutions of the niobium-vanadium system	O K Kuvandikov, N S Hamrayev, R M Rajabov and N N Hamrayeva	Samarkand State University named after Sharof Rashidov, Samarkand, Uzbekistan.
AAPM-1036	Simulation of natural convection in a solar collector	Jura Jumaev, Jobir Kodirov and Shavkat Mirzaev	Bukhara State University, Bukhara, Uzbekistan
AAPM-1037	Development of software for data collection and data mining based on unified artificial immune system technology	G A Samigulina and Z I Samigulina	RSE Institute of Information and Computational Technologies MES RK CS, Almaty, Kazakhstan; Kazakh-British Technical University, Almaty, Kazakhstan
AAPM-1038	Study of reflectance characteristics for isolation of anisotropic medium over hydrocarbons	V F Yanushkevich, D A Dauhiala, A L Adamovich, S N Abramenska and N Y Fedarovich	Euphrosyne Polotskaya State University of Polotsk, Novopolotsk, Belarus
AAPM-1039	Physical processes of fuel combustion affecting the implementation of the concept of smart dust in the thermal	I V Kovalev, V V Losev, Ya A Tynchenko, A A Voroshilova, D I Kovalev, Z E Shaporova, D V Borovinsky	Siberian Federal University, Krasnoyarsk, Russia Reshetnev Siberian State University of Science and Technology, Krasnoyarsk, Russia Krasnoyarsk State Agrarian University, Krasnoyarsk, Russia China Aviation Industry General Aircraft Zhejiang Institute Co., Ltd, China Krasnoyarsk Science and Technology City Hall, Krasnoyarsk, Russia National Research University "Tashkent Institute of Irrigation and Agricultural Mechanization Engineers", Tashkent, Uzbekistan FSBEE HE Siberian Fire and Rescue Academy

			EMERCOM of Russia, Zheleznogorsk, Russia
AAPM-1040	Generation of homogeneous flows of fast argon atoms to remove wear-resistant coatings from a product surface	A S Metel, Y A Melnik, E S Mustafaeu and S N Grigoriev	Department of High-Efficiency Processing Technologies, Moscow State University of Technology STANKIN, Vadkovskiy per. 3A, 127055 Moscow, Russia
AAPM-1041	Strength analysis of flat manhole cover in case of change of location and inclination angle of two mutually intersecting scratches	Aleksey Rubtsov, Petr Kulakov, Veronika Gracheva, Vitaliy Afanasenko, Marina Bikmukhametova, Olga Zubkova and Andrey Greb	Ufa State Petroleum Technological University, 450064 Ufa, Russian Federation
AAPM-1042	Simulation of technological process of aerosol wood impregnation	V A Shamaev, O R Dorniyak, I N Medvedev and N A Trubnikov	Voronezh State University of Forestry and Technologies named after G.F. Morozov, Voronezh, Russia
AAPM-1043	Unknown regularities and equations in the atmosphere and in gravitational fields	E R Smol'yakov	Lomonosov Moscow State University, Moscow, Russia
AAPM-1044	On the question of the independence of the process of sound transmission in metals from the natural frequency of vibration of atoms.	S. A. Yurchenko	LLC "TEHOSNASTKA-RTD" 662925, 2 Novaya Str., Petropavlovka, Russian Federation
AAPM-1045	Dynamic Characteristics of a Multilayer Heterostructure	K.A. Ismailov, A.S. Muratov and A.K. Uteniyazov	Karakalpak State University named after Berdakh, Nukus. Uzbekistan,
AAPM-1046	Application of spectroscopy to develop methods for obtaining carotenoid-containing dyes	Salih Astanov, Guzal Kasimova and Askar Fayzullayev	Bukhara Engineering Technological Institute, Bukhara, Uzbekistan
AAPM-1047	Modeling of the process of solar drying of grapes in indirect type installations with natural air convection	Jura Jumaev, Salim Ibragimov and Shavkat Mirzaev	Bukhara State University, Bukhara, Uzbekistan
AAPM-1048	Analysis of the dynamics of a belt conveyor with composite guide rollers and elastic elements	A.Djuraev, A.S.Jumaev, N.I.Ibragimova, M.Y.Turdaliyeva	Tashkent Institute of Textile and Light Industry, Tashkent Uzbekistan Almalyk branch of Tashkent State Technical University named after Islam Karimov, Tashkent,

AAPM-1049	Certain concepts and definitions of the physical process of wear of friction discs of sewing machine clutches	F.Kh. Dustova and S.Kh. Babadjanov	Tashkent Institute of Textile and Light Industry, Tashkent Uzbekistan
AAPM-1050	Determination of the physical and mechanical properties of overalls based on the analysis of geometric and thermophysical parameters	Mukhabbat Chorjeva	Bukhara Engineering-Technological Institute, Bukhara, Uzbekistan
AAPM-1051	Regulation of magnetoresistance in SmxMn1-xS by weak external pressure	A M Kharkov and M N Sitnikov	Reshetnev Siberian State University of Science and Technology, 31 Krasnoyarskii rabochii prospekt, Krasnoyarsk, 660037, Russia
AAPM-1052	Technological principles for microtexturing the operating surfaces of ceramic cutting inserts by electrical discharge machining	M A Volosova, A A Okunkova, S V Fedorov, N V Kolosova and K I Gkhashim	Department of High-Efficiency Processing Technologies, Moscow State University of Technology «STANKIN», 127994, Moscow, Russia
AAPM-1053	Technological principles for removal of defective surface layer on grinded ceramic products by etching with accelerated argon	M A Volosova, A P Mitrofanov and M S Migranov	Department of High-Efficiency Processing Technologies, Moscow State University of Technology «STANKIN», 127994, Moscow, Russia
AAPM-1054	Fabrication of multi-compartmental vesicles via RAFT method in Polymerization-induced self-assembly (PISA)	Jamshid Kadir Khanov and Muzafar Yusupov	Namangan Engineering-Technological Institute, Namangan, Uzbekistan.
AAPM-1055	Dynamic analysis of the force acting on the needle of shoe sewing machines in the process of sewing the leather	Nazirjon Safarov, Akbar Abrorov and Laziz Abdullaev	Namangan Engineering-Technological Institute, Namangan, Uzbekistan Bukhara Engineering Technological Institute, Bukhara, Uzbekistan
AAPM-1056	Reducing the vibration excitability of a metal plate by applying variable vibrodamping inserts	Victor F. Asminin, Svetlana A. Sazonova and Alevtina S. Samofalova	Voronezh State Forestry University named after G. F. Morozov; Voronezh State Technical University; Voronezh State Forestry University named after G. F. Morozov, Voronezh, Russia
AAPM-1057	Automated software and hardware complex based on an eddy current sensor for studying the properties of thin metal films	Alexander Katasonov, Aleksey Ishkov, Sergey Voinash, Ramil Zagidullin, Venera Yumagulova and Victoriia Sokolova	Altai State University, Barnaul, Russia Altai State Agrarian University, Barnaul, Russia Kazan Federal University, Kazan, Russia Saint-Petersburg State University of Industrial Technologies and Design, Saint-Petersburg, Russia

Section 2. Applied mathematics

AAPM-2001	Algorithms for optimizing of control and measurement operations in a fuzzy environment	Vershinina L P	Federal state Autonomous educational institution of higher education "Saint-Petersburg State University of Aerospace Instrumentation", Saint-Petersburg, Russia
AAPM-2002	Improving the fuel supply process of diesel locomotive	Vladimir Markov, Viktor Furman, Sergey Plakhov and Matvey Shlenov	Dr.Sc., professor, head of the department, BMSTU, 2nd Baumanskaya str. 5 p. 1 , Moscow 105005, Russia E-mail: vladimir.markov58@yandex.ru Dr.Sc., General Director of PPP Dieselavtomatika LLC, N.G. Chernyshevsky str., 109, Saratov 410017, Russia E-mail: dizavt@overta.ru Deputy General Director for Project Work of PPP Dieselavtomatika LLC, N.G. Chernyshevsky str., 109, Saratov 410017, Russia. E-mail: plahov@dizavt.ru Ph. D., teaching assistant, BMSTU, 2nd Baumanskaya str. 5 p. 1 , Moscow 105005, Russia
AAPM-2003	Quasi-static model for estimating the forces acting on a two-axle vehicle in the problem of trajectory stabilization by applying controlled differentials	R Yu Dobretsov, L Bao, S A Voinash, R R Zagidullin, L S Sabitov, A M Yakushev and V A Sokolova	Peter the Great St. Petersburg Polytechnic University, St. Petersburg, Russia Kazan Federal University, Kazan, Russia Kazan State Power Engineering University, Kazan, Russia Saint-Petersburg State University of Industrial Technologies and Design, Saint-Petersburg, Russia
AAPM-2004	Mathematical modeling of diagnostics of residual stresses in a layered medium	Lomazov V.A., VI Lomazova V.I., Akupiyani O.A., Miroshnichenko I.V., Petrosov D.A.	Belgorod State National Research University, Belgorod, Russia; Belgorod State Agricultural University named after V. Gorin, Mayskiy, Russia; Financial University under the Government of the Russian Federation, Moscow, Russia
AAPM-2005	Estimates of Rayleigh distribution parameters in statistical methods of quality control	S.N. Grigoriev, P.N. Emelianov, D.A. Masterenko, S.E. Ped'	Moscow State University of Technology "STANKIN", Moscow, Russia