

# 2019 International Conference on Physics and Mechanics of New Materials and Their Applications (PHENMA 2019)

**HANOI, VIETNAM, NOVEMBER 7-10, 2019**

**Venue: Ta Quang Buu Library In HUST's Campus, 1 Dai Co Viet Street, HaNoi, VietNam.**

## GENERAL CONFERENCE SCHEDULE

**Thursday, November 7, 2019**

Registration desk open 15:00 – 18:00  
(the 1st floor of the building of Ta Quang Buu Library)

**Friday, November 8, 2019**

07:30 – 08:30 Registration desk open

### Opening ceremony

(the 10th floor, Conference Hall, of the building of Ta Quang Buu Library)

8.30-9.10	Welcome remarks from Prof. Banh Tien Long (Vietnam Association for Science Editing – VASE, Vietnam) Welcome remarks from Prof. I. A. Parinov (Southern Federal University, Russia) Welcome remarks from Prof. S.-H. Chang (National Kaohsiung University of Science and Technology, Taiwan, ROC) Welcome remarks from Prof. Huynh Quyet Thang (Ha Noi University of Science and Technology, Ha Noi, Viet Nam) Welcome speech by invited guest
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9.10-9.20	Photo session
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9.20-10:00	Coffee break (the 10th floor of the building of Ta Quang Buu Library)
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**Chair: Prof. Nguyen Hay**  
**Co-Chair: Prof. Tohru Sekino**  
 (the 10th floor, Conference Hall, of the building of Ta Quang Buu Library)

10:00 – 10:40	Keynote Lecture 1 Prof. Yun-Hae Kim “Effect of Thermal Treated Halloysite Nanoclay on Dispersion Characteristics at Interface of Fiber Reinforced Nanocomposites”
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10:40 – 11:20	Keynote Lecture 2 Prof. Makoto Nanko “Mechanical Properties and Machinability of Ti <sub>2</sub> AlC Ceramics”
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11:20 – 12:00	<b>Keynote Lecture 3</b> <b>Prof. Yamshchikov</b> <b>“The effect of preliminary laser surface treatment on the mechanical properties of a solid-phase compound of an iron-nickel alloy in diffusion welding”</b>						
12:00 –13:30	<b>Lunch</b> (D2-A cafeteria 3 <sup>rd</sup> – Floor)						
13:30-17:00	<b>Poster in parallel</b> <b>(the 10th floor of the building of Ta Quang Buu Library)</b>						
<b>PART I (13:30-15:00)</b>							
<b>Section I</b>		<b>Section II</b>		<b>Section III</b>		<b>Section IV</b>	
<b>Room 1</b> <b>(10th floor Conference Hall)</b>		<b>Room 2</b> <b>(Room No. 902)</b>		<b>Room 3</b> <b>(Room No. 702)</b>		<b>Room 4</b> <b>(Room No. 923)</b>	
Chair: Dr. Mithilesh K. Dikshit Co-Chair: Dr. Do Anh Tuan		Chair: Prof. A.N.Soloviev Co-Chair: Dr. Pham Duc An		Chair: Dr. Deog-Hee Doh Co-Chair: Dr. Tran The Van		Chair: <b>Prof. Hung Yu Wang</b> Co-Chair: Dr Le Thuong Hien	
<b>Coffee Break</b> <b>(the 10th floor of the building of Ta Quang Buu Library)</b>							
<b>PART I (15:30-17:00)</b>							
<b>Section I</b>		<b>Section II</b>		<b>Section III</b>		<b>Section IV</b>	
<b>Room 1</b> <b>(10th floor Conference Hall)</b>		<b>Room 2</b> <b>(Room No. 902)</b>		<b>Room 3</b> <b>(Room No. 702)</b>		<b>Room 4</b> <b>(Room No. 923)</b>	
Chair: Dr. Mithilesh K. Dikshit Co-Chair: Dr. Do Anh Tuan		Chair: Prof. A.N.Soloviev Co-Chair: Dr. Pham Duc An		Chair: Dr. Deog-Hee Doh Co-Chair: Dr. Tran The Van		Chair: <b>Prof. Hung Yu Wang</b> Co-Chair: Dr Le Thuong Hien	
<b>Saturday, November 9, 2019</b>							
8:30-17:00	<b>Poster in parallel</b> <b>(the 10th floor, Conference Hall, of the building of Ta Quang Buu Library)</b> Chair: Prof. Yun-Hae Kim Co-Chair: Prof. Makoto Nanko <b>(the 10th floor, Conference Hall, of the building of Ta Quang Buu Library)</b>						
8:00 – 8:40	<b>Keynote Lecture 4</b> <b>Prof. Tohru Sekino</b> <b>“Design and Fabrication of Multi-functional Ceramic/Metal Composites”</b>						
8:40 – 9:20	<b>Keynote Lecture 5</b> <b>Prof. Subhash B. Kondawar</b> <b>“Facile fabrication of poly(vinylidene fluoride) based hybrid nanofibrous polymer electrolyte for lithium ion battery”</b>						
<b>Coffee Break</b>							

**(the 10th floor of the building of Ta Quang Buu Library)**

**PART II (9:30-12:00)**

<b>Section III</b>	<b>Section V</b>	<b>Section VI</b>	<b>Section VII</b>
<b>Room 1</b> <b>(10th floor Conference Hall)</b>	<b>Room 2</b> <b>(Room No. 902)</b>	<b>Room 3</b> <b>(Room No. 702)</b>	<b>Room 4</b> <b>(Room No. 923)</b>
Chair: Prof. R. Sunder Co-Chair: Tra Hung Tran	Chair: Prof. Chitsan Lin Co-Chair: Assoc. Prof. Chu Dieu Huong	Chair: Dr. A. V. Cherpakov Co-Chair: Do Duc Luu	Chair: Prof. Min-Yen Yeh Co-Chair: Long Hoang

**Lunch**

(D2-A cafeteria 3<sup>rd</sup> – Floor)

**Part III (13:00-15:00)**

<b>Section I</b>	<b>Section II</b>	<b>Section VI</b>	<b>Section V</b>
<b>Room 1</b> <b>(10th floor Conference Hall)</b>	<b>Room 2</b> <b>(Room No. 902)</b>	<b>Room 3</b> <b>(Room No. 702)</b>	<b>Room 4</b> <b>(Room No. 923)</b>
Chair: Dr. Alexander Skaliukh Co-Chair: Dinh Son Nguyen	Chair: Dr. Erni Puspanantasari Putri Co-Chair: Dr. Nguyen Huu Quang	Chair: Ankit Nayak Co-Chair: Dr. THI THOA MAC	Chair: Dr. K. N. Boldyrev Co-Chair: Trinh Duy NGUYEN

**Coffee Break**

**(the 10th floor of the building of Ta Quang Buu Library)**

**Part IV (15:30-17:00)**

<b>Section IV</b>	<b>Section VII</b>	<b>Section V</b>	<b>Section II</b>
<b>Room 1</b> <b>(10th floor Conference Hall)</b>	<b>Room 2</b> <b>(Room No. 902)</b>	<b>Room 3</b> <b>(Room No. 702)</b>	<b>Room 4</b> <b>(Room No. 923)</b>
Chair: Dr. V.A.Chebanenko Co-Chair: Dr. Than Van The	Chair: Dr. Ravi Kumar Gupta Co-Chair: Dr. Thi-Thao Ngo		

**Awards for best young participants and best reports**  
**(17:00-17:30)**

**Closing Ceremony + Gala dinner**  
**(18:30-21:30)**

Special payment will be made for Symposium Banquet

**Sunday, November 10, 2019**

**Conference Trip 08:00 – 17:00**

To visit somewhere in Hanoi during your stay, please visit: <http://www.vietnam-guide.com/hanoi/top10/top10-hanoi-attractions.htm>

# 2019 International Conference on Physics and Mechanics of New Materials and Their Applications (PHENMA 2019)

**HANOI, VIETNAM, NOVEMBER 7-10, 2019**

## DETAIL CONFERENCE SCHEDULE

**Thursday, November 7, 2019**

**Registration desk open 15:00 – 18:00**

**Friday, November 8, 2019**

### PART I (13:30-17:00)

Section I Room 1 (10th floor Conference Hall)			Section II Room 2 (Room No. 902)			Section III Room 3 (Room No. 702)			Section IV Room 4 (Room No. 923)		
Chair: Dr. Mithilesh K. Dikshit Co-Chair: Dr. Do Anh Tuan			Chair: Prof. A.N.Soloviev Co-Chair: Dr. Pham Duc An			Chair: Dr. Deog-Hee Doh Co-Chair: Dr. Tran The Van			Chair: Prof. Hung Yu Wang Co-Chair: Dr Le Thuong Hien		
ID	Paper name	Authors	ID	Paper name	Authors	ID	Paper name	Authors	ID	Paper name	Authors
2	Burst Strength Analysis of Thin Composite Pressure Vessels	Afthab Afrathim, Saravanan Karuppanan, Santosh S. Patil	119	The diversity of microbial communities to degradation of Dioctyl terephthalate (DOTP) by food waste composting	Huu Tuan Tran, Bao Trong Dang, Chitsan Lin, Hong Giang Hoang, Thi Dieu Hien Vo, Chi Thanh Vu	188	A study on real flame by using CT-tunable laser absorption spectroscopy	<u>Min-Gyu Jeon</u> , Deog-Hee Doh, Yoshihiro Deguchi	50	Improving Lung computed tomography image viewing based on unsharp masking and local intensity area descriptor	Chi-Kien Tran, Chin-Shiuh Shieh, Chih-Hsueh Lin, and Tsair-Fwu Lee
192	Prediction of mechanical property of cnt/graphene reinforced epoxy ly-556 nanocomposite	Mithilesh K. Dikshit, Vimal Kumar Pathak, Ashish K. Srivastava	301	Numerical optimization of the piezoelectric generators	A.N.Soloviev, V.A. Chebanenko, I.V. Zhilyaev, A.V. Cherpakov, I.A. Parinov	340	Inverse method for estimating the convection coefficient of gap inside bearing rig test model	Van-The Than, Thi-Thao Ngo	164	The wear behavior of stabilized zirconia	Le Thuong Hien, Kim Seock Sam

15	Compressive Stress-Strain Behaviour of Graphene Reinforced Aluminum Nanocomposite	Ashish K. Srivastava, Vimal K. Pathak, Mithilesh K. Dikshit	166	Temperature - dependent evolution of structural nanosized regions of pmn - relaxor ferroelectrics	A.R. Lebedinskaya	341	Dynamic analysis for internal elliptical gear meshing pair	Van-The Tran	221	The different's structure of chitosan beads formed in naoh and naoh.sio2: application for treatment of shrimp wastewater	Nguyen Quang Lich, Ve Quoc Linh
<b>Coffee Break (the 10th floor of the building of Ta Quang Buu Library)</b>											
90	Digital Microscopy Image Enhancement Technique for Microstructure Image Analysis of Bottom Ash Particle Polymer Composites	Fajar Astuti Hermawati, I. Made Kastiawan, Muhyin.	251	Effect of CaCO <sub>3</sub> on the Mechanical Properties of Poly(ethylene terephthalate)/Polypropylene Blends	Pham Thi Hong Nga	189	Preparation of Fe@TiO <sub>2</sub> Core-shell Structure Photocatalysts by Sol-gel Method	Min Yen Yeh, Tzu Yuan Yang, Shun-Hsyung Chang, Jenny Chih-Yu Lee, Chih-Feng Yen, Chyi-Da Yang	217	Enhanced adsorption behavior of lead ions by supporting MgO on $\gamma$ -Al <sub>2</sub> O <sub>3</sub> nanoparticles surface	Nguyen Kim Thanh, Le Thuong Hien, To Thanh Loan
261	Study on the effect of some technology parameters on surface roughness of workpiece when surface grinding of Ti-6Al-4V alloy with resinoid CBN grinding wheel.	Trong-Hung Phi	186	Microstructure and hardness analysis of heated plate of aluminum 2075-bottom ash coal composite	Maula Nafi, Harjo Seputro	226	On the High Fluid Pressure in Hydrostatic Forming for Sheet Metal	Nguyen Thi Thu, Nguyen Dac Trung	214	Employing the extended kalman filter on a customized cyber-glove for pose estimation and its applications	Nguyen Duy Long, Nguyen Minh Quang, Le Hoang Anh, Nguyen Doan Tan Anh, Do Dang Khoa, Banh Tien Long

349	Effect of Variation of Graphene on Mechanical Property of Graphene Reinforced Thermoplastic Polyurethane Nanocomposite : A Molecular Dynamic Simulation.	Vimal Kumar Pathak, Mithilesh K. Dikshit	111	Influence of Heat Treatment on Grain Size and Hardness Mechanical Properties of The Aluminium Alloy-Coal Bottom Ash Particle (2.5 Wt%) Composites for Bolts and Nuts Application	Harjo Seputro, Mastuki, Maula Nafi, Eko Surojo, Dody Ariawan.	59	A mathematical model for wave propagation in viscoelastic rods.	Cuong T. Nguyen	237	Practical application of Plan-Do-Check-Act method for quality improvement of sustainable packaging: a case study	V. H. Nguyen, N.H. Nguyen, T. T. Tran
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**Saturday, November 9, 2019**

**PART II (9:30-12:00)**

Section III			Section V			Section VI			Section VII		
Room 1 (10th floor Conference Hall)			Room 2 (Room No. 902)			Room 3 (Room No. 702)			Room 4 (Room No. 923)		
Chair: Prof. R. Sunder Co-Chair: Tra Hung Tran			Chair: Prof. Chitsan Lin Co-Chair: Assoc. Prof. Chu Dieu Huong			Chair: Dr. A. V. Cherpakov Co-Chair: Do Duc Luu			Chair: Prof. Min-Yen Yeh Co-Chair: Long Hoang		
ID	Paper name	Authors	ID	Paper name	Authors	ID	Paper name	Authors	ID	Paper name	Authors
376	A Method for Analyzing dynamic characteristics of root rotors in dry multi-stage vacuum pumps	Hoang Quoc Tuan, Banh Tien Long, Van-The Tran	227	Influence of elastane yarn ratio on creep behaviour of single jersey fabrics	Nguyen Thi Tu Trinh, Chu Dieu Huong,	73	Experimental research on Diesel-Generator Engine TD226B working with variable nozzle turbine in laboratory of Viet Nam Maritime University	Do Duc Luu, Nguyen Quang Vinh	34	Assessment the surface roughness of metal mechanical parts by Microsoft Kinect V2	Bui Van-Bien, Banh Tien-Long, Nguyen Duc-Toan.
306	Theory and Application of Linear	R. Sunder	88	Performance Evaluation Using PCA-CRS Input	Erni Puspanantasari Putri,	209	A Model-Based Design to Implement	Ngo Van Hien, Pham Gia Diem	116	Assessment of Heavy Metal Pollution in	Hong-Giang Hoang,

	Hysteretic Fracture Mechanics			Oriented DEA Method: A Case Study of East Java Exports in Indonesia to ASEAN Country	Chuleeporn Kusoncum		Controllers of Autonomous Underwater Vehicles			Water and Sediment of the Houjing River, Taiwan	Chitsan Lin, Huu-Tuan Tran
333	Improving load capacity and stiffness of hydrostatic spindle bearing of medium sized circular grinding machines based on simulation and actual geometric bearing parameters	Van-Hung Pham, Manh-Toan Nguyen, Tuan-Anh Bui	57	Characterization of microbial community for degrading PCDD/Fs-contaminated soil by food waste composting	Chitsan Lin, Huu Tuan Tran, Acharee Kaewlaoyoon, Hong Giang Hoang, Chi Thanh Vu	70	State diagnostic regressive models of the marine diesel engine by torsional vibrations on the propulsion shaft-line	Do Duc Luu, Cao Duc Hanh	225	Prediction of Temperature Distribution On PCBN Cutting Tools In Orthogonal Turning 9XC Hardened Alloy Steels	Nguyen Thi Quoc Dung
324	Failure behavior of the dissimilar T-joint friction stir welding between AA7075 and AA5083	Tra Hung Tran, Hao Dinh Duong, Masakazu Okazaki	309	Design and analysis of a shear mode piezoelectric energy harvester for rotational motion system	Tejkaran Narolia, Vijay K. Gupta, Ivan A. Parinov	329	An approach to determine the stable operating area for internal gear motors and pumps based on safe lubrication oil film thickness	Trong Hoa Pham	172	A new Method for Designing and Machining Air Compressor Screw Pairs.	<u>Long Hoang</u> , Linh Nguyen Tuan, Long Banh Tien
368	Experimental study of fatigue life on leaf spring steel sup-9 of heat treatment and shot peening	Zainun, Maula Nafi	378	Simplified analytical solution construction of the contract problem on spherical indentation of a half-space with inhomogeneous coating	Aizikovich S.M., Sadyrin E.V., Vasiliev A.S., Volkov S.S., Mitrin B.I.	125	Mechanical properties analysis of aluminum alloy casting using variable of pouring temperatures and cooling media	Ichlas Wahid, Mastuki.	136	Formation of surface micro and nanostructures when exposed to laser UV and VUV radiation of nanosecond duration	Khomich V. Yu., Yamshchikov V.A

**Part III (13:00-15:00)**

Section I			Section II			Section VI			Section V		
Room 1 (10th floor Conference Hall)			Room 2 (Room No. 902)			Room 3 (Room No. 702)			Room 4 (Room No. 923)		
Chair:Dr. Alexander Skaliukh Co-Chair: Dinh Son Nguyen			Chair: Dr. Erni Puspanantasari Putri Co-Chair: Dr. Nguyen Huu Quang			Chair: Ankit Nayak Co-Chair: Dr. THI THOA MAC			Chair:Dr. K. N. Boldyrev Co-Chair: Trinh Duy NGUYEN		
ID	Paper name	Authors	ID	Paper name	Authors	ID	Paper name	Authors	ID	Paper name	Authors
65	A Geometric Model of Lattice Structures for Additive Manufacturing	Dinh Son Nguyen	89	Efforts to Develop Coastal Community Economy through Creative Industry Creation	Erni Puspanantasari Putri, Muslimin Abdulrahim.	71	Vibration monitoring on main diesel engine of MV. KN168	Do Duc Luu, Lai Huy Thien	325	Solvothermal Synthesis of BiVO <sub>4</sub> and its Photocatalytic Activity under Visible Light Irradiation	Trinh Duy NGUYEN
4	Models of inhomogeneous polarization of ferroelectrics and their practical application	Alexander Skaliukh	113	Assessment the effectiveness of green infrastructure solution, in a case study of District 12 – Hochiminh City	Hieu Duy Nguyen, Chitsan Lin, Matthew Buchanan, Mariana da Cunha Oliveira Santos , Pham Dang Manh Hong Luan, Mitchel Smith	8	Acquisition and Analysis of Endodontic Handpiece Vibration Signals	Ankit Nayak, P. K. Kankar, Prashant K Jain, Niharika Jain	139	An experimental investigation on the Heat Transfer Coefficients of CO <sub>2</sub> in Minichannel and Microchannel Evaporators	Kimhang Vo Thanhthao Nguyen, Thanhtrung Dang, Tronghieu Nguyen, Hoangtuan Nguyen
117	On the Drying Process in Porous Media: From Basic Concepts and Transport Phenomena to Continuum Modelling	Hong Thai Vu, Evangelos Tsotsas	315	Composting using different turning frequencies to food waste and dried leaves	Thi-Dieu-Hien Vo, Thi-Hieu Le, Van-Truc Nguyen, Chitsan Lin, Xuan-Thanh Bui.	377	Towards An Autonomous Landing System in Presence of Uncertain Obstacles in Indoor Environments	THI THOA MAC, COSMIN COPOT, RICARDO CAJO And CLARA IONESCU	54	Study on Improving Utility of Agricultural Waste by Thermal Cracking Technology	Chin-Ko Yeh, Hsuen-Chen Shen, Chitsan Lin



46	Simulation of a multilayer structure by the finite element method	A.V. Cherpakov, O.V. Shilyaeva, A.N. Solovie, I.A. Parinov.	99	The Complex Oxides with Octahedral Structures Existence and Correlations between Their Features and Phase Transitions Temperatures	G.A. Geguzina	72	Simulation of vibro-monitoring on naval ship gas turbine engine.	Do Duc Luu, Luu Minh Hai.	27	Quantum sensorics: prospects of application	K. N. Boldyrev
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**Part VI (15:30-17:00)**

Section IV			Section VII			Section			Section VII		
Room 1 (10th floor Conference Hall)			Room 2 (Room No. 902)			Room 3 (Room No. 702)			Room 4 (Room No. 923)		
Chair: Dr. A.N. Solovie, Co-Chair: Than Van The			Chair: Dr. Ravi Kumar Gupta Co-Chair: Dr. Thi-Thao Ngo			Chair: Co-Chair:			Chair: Co-Chair:		
ID	Paper name	Authors	ID	Paper name	Authors	ID	Paper name	Authors	ID	Paper name	Authors
334	Influence of oil pressure and viscosity on stiffness of hydrostatic spindle bearing of medium-sized circular grinding machine	Van-Hung Pham, Manh-Toan Nguyen, Tuan-Anh Bui	316	Simulation and experimental verification of welding temperature by gas metal arc welding process	Thi-Thao Ngo, Van-The Than						
302	Experimental studies of the performance of peg canetlip-type with active base	A.N.Soloviev, I.A. Parinov, A.V.Cherpakov, V.A.Chebanenko, E.V.Rozhkov	253	Analysis of effect of oil viscosity and temperature on dynamic pressure distribution in internal gear motor and pump	Pham Trong Hoa						

	331	Trends in the use of Light Steel/Galvanized for The Roof Construction in Homes and Buildings in Surabaya Indonesia.	Uniek Praptiningrum, W, dan Joko Santoso	273	A Software Tool for Collaborative Product Development using Augmented Reality	Ravi Kumar Gupta, Ayush Khan, Chelikani Sriram							
	171	Experimental Investigation of the Effect of Process Parameters on Surface Roughness in Electrochemical Machining	Loc P. Ngo, Tai P. Nguyen, Thanh T. Tran	121	A Simulation Study on Performance of Hybrid Electric Scooter using Dynamic Programming based Energy Management Algorithm.	Huynh Thinh, Nguyen Van Trang							

## POSTER SECTION (November 9, 10 - 2019)

ID	PAPER TITLE	AUTHORS
20	Improvement of BETA-analysis for Viscous Media, Flammable Liquids and Flame-retardant Coatings	V. V. Belozero <sup>#</sup> , Nguyen Tuan Anh <sup>##</sup> , Vl. V. Belozero
33	Influence of rare earth on the microstructure and mechanical properties of al-zn alloy	Bui Thi Ngoc Mai, Pham Mai Khanh, Tran Duc Huy <sup>*</sup>
51	P-Type Nitrogen Doped Zinc Oxide Sensor with Polymer Buffer Layer for Enhancement of RH Sensing Performance	Chih Chin Yang <sup>*</sup> , Chih Cheng Wu, Shun Hsyung Chang
55	Comparison on MRI Image Segmentation Methods for Radiation-Induced Brain Edema for Patients with Intracranial Tumors after Radiotherapy	Chin-Shiuh Shieh, Chih-Hsueh Lin, Yi-Kuan Tseng <sup>1,2</sup> , Hao-Si Liang, Chi-Min Chiu <sup>2</sup> , Pei-Ju Chao, Yu-Jie Huang, Tsair-Fwu Lee <sup>*</sup>
56	Using Dose-Volume Risk Factors to Predict the Radiation-Induced Hepatic Toxicity for Patients with Hepatocellular Carcinoma after Radiotherapy	Chin-Shiuh Shieh, Chih-Hsueh Lin, Zi-Xiang Su, Wei-Han Lu, Pei-Ju Chao, Hsuan-Chih Hsu, Tsair-Fwu Lee <sup>*</sup>
58	Experimental and Numerical Study of Vacuum Resin Infusion for Thin Walled Composite Parts	Chun-Ping Huang, Sergey Shevtsov <sup>*</sup> , Valery Chebanenko, Igor Zhilyaev, Natalia Snezhina
69	Study to Improve the Tensile Strength of Welding Seams when Extrusion Hollow Square Tube Aluminum Alloy 7075 by T6 Heat Treatment	Do Anh Tuan
79	Simulation Study on Shear Thickening Polishing of complex surfaces	Duc-Nam Nguyen
102	Polymer-based Capacitive Micromachined Ultrasonic Transducers Apply for Identify Object	Gia Thinh Bui
112	Multi-objective optimization using the PSO algorithm to determine parameters of ultrasound-assisted heat pump drying for <i>Codonopsis javanica</i>	Hay Nguyen <sup>*</sup> , Quang Xuan Nguyen, Phuong Ngoc Nguyen
115	A Tool Path Generation Method for Concave Free-form Surface Machining on Three-axes CNC Milling	Hoang Van Quy <sup>*</sup> , Bui Ngoc Tuyen, Nguyen Duc Toan
158	Modelling equilibrium moisture isotherm characteristics of <i>Moringa oleifera</i> leaves	Le Anh Duc <sup>*</sup> , Tran Dinh Khai, Nguyen Hay

ID	PAPER TITLE	AUTHORS
162	Insight into the Non-magnetic Alloy Crystal of FeNi <sub>2</sub> Mo	Le Tuan*, Tran Van Hoan
173	Research on the 3D Clothing Design Method	Luu Hoang*, Ngo Chi Trung**
208	A Hybrid Control Model to Realize Team-Based Cooperative Operations of Multiple ASVs/AUVs	Ngo Van Hien*, Nguyen Son Tung
212	Study on phase transformation of CMnSi steel when heat treatment	Nguyen Duong Nam*, Tran The Nam, Pham Huy Tung, Pham Mai Khanh*
215	Study on efficiency of radio frequency assisted heat pump drying of ganoderma lucidum	Nguyen Hay*, Le Anh Duc, Pham Van Kien <sup>2</sup>
218	Selective Laser Sintering of Ti-6Al-4V Powders Directly on the Substrate without Support Parts and Its Properties	Nguyen Minh Thuyet*, Jin-Chun Kim
219	Optimal Design Bus Structures to Improve Full Frontal Impact Test Simulation	Nguyen Phu Thuong Luu
232	Multi-objective Optimization for Alloy Steels Grinding Process on External Cylindrical Grinding Machine by Genetic Algorithms	Nguyen Tuan Linh*, Hoang Long
228	Optimization of Cutting Parameters and Cutting Tool Path on Freeform Surface Machining by Using Taguchi Method	Nguyen Tien Tiep*, Nguyen Minh Son, Dinh Van Hien, Le Thi Lan
239	Research, design and manufacture of floating diving system low cost for small Autonomous Underwater Vehicle	Nguyen Van Tuan <sup>1,2*</sup> , Dinh Van Phong <sup>2</sup> , Nguyen Chi Hung <sup>2</sup>
250	Strain Rate vs Chip Formation in Cutting Process of Aluminum Alloy A6061	Phạm Thị Hoa, Banh Tien Long, Nguyen Duc Toan, Pham Duc Thanh
255	Research on the Optimization of Dynamic Vibration Absorber to Damped Linear System under Harmonic Excitation	Pham Van Tho, Vu Xuan Truong <sup>2*</sup> , Khong Doan Dien <sup>2,3</sup>
258	Study on the Optimal Sealing Technological Regime for Making Sportswears from Waterproof Fabrics	Phan Thanh Thao*, Tran Thuy Trang
311	Analysis to Chassis Design of Light Truck by Composite Material	Thanh Quang Nguyen
312	Static Structure Analysis of Composite Thin Plate Applied to Bus Body	Thanh Quang Nguyen

ID	PAPER TITLE	AUTHORS
314	Design and Analysis of a Compliant Constant-Torque Mechanism for Rehabilitation Devices	Thanh-Vu Phan, Huy-Tuan Pham, Cong-Nam Truong
328	Estimations of the Cutting Forces on Dredging Cutter Head: A Parametric Study	Nguyen Viet Tan, Nguyen Van Tap, Chu Van Dat, Trinh Van Hai
377	Towards An Autonomous Landing System in Presence of Uncertain Obstacles in Indoor Environments	Thi Thoa Mac, Cosmin Copot, Ricardo Cajo and Clara Ionescu
356	Application of Atmospheric DBD Plasma for Surface Treatment of Cotton Fabric	Vu Thi Hong Khanh, Dang Duc Vuong, Nguyen Thị Huong
363	A Very High Output Impedance Low-Voltage Current Mirror	You-Cyuan Wei, Ta-Chi Jeang, Hung-Yu Wang, Tsair-Fwu Lee, Te-Jen Su
281	Surface Microgeometry of Human Enamel White Spot Lesion and Bordering Dentine in Comparison to the Sound Counterparts	E.V. Sadyrin1*, E.G. Droган1, D.V. Yogina2, M.V. Swain1,3, S. Yu. Maksyukov2
241	Mechanical Properties of Microposit S1813 Photoresist Thin Layers Measured by Nanoindentation	A. L. Nikolaev*, B. I. Mitrin, E. V. Sadyrin, V. B. Zelentsov, S. M. Aizikovich
82	Analysis of Copper Adding and Aging Time Variable to the Mechanical Properties of Cast Al-Cu Alloy	Edi Santoso*, Ichlas Wahid, Maula Nafi
337	Optimization Design of a 2-DOF Compliant Parallel Mechanism Using NSGA-II Algorithm for Vibration-Assisted Grinding	Khac-Huy Nguyen, Van-Khien Nguyen, Huy-Tuan Pham*, Trung-Kien Hoang, Son-Minh Pham.
357	Kinematic Analysis of Crank and Slotted Lever Quick Return Motion Mechanism in Different Methods	Vu Thi Thu Trang, Vu Viet Quyen
358	Evaluation of the Effect of Reducing Agent on the Metal Magnesium Production Using the Pidgeon Process	Vu Viet Quyen, Nguyen Duong Nam, Vu Anh Quang, Duong Ngoc Binh, Tran Duc Huy
339	Studying the Microhardness on the SKD61 Workpiece Surface in PMEDM Using Tungsten Carbide Powder	Van Tao Le, Tien Long Banh, Xuan Thai Tran, Thi Hong Minh Nguyen

## POSTER SECTION (November 9, 10 - 2019)

ID	PAPER TITLE	AUTHORS
1	Structural Scheme of Electroelastic Actuator for Nanomechanics	S. M. Afonin
3	Investigation of the Mechanisms of Functioning and the Methods of Creating Memristor Structures Based on Nanocrystalline ZnO Films	O. Ageev <sup>1</sup> , M. Ivonin <sup>2,*</sup>
5	Reversible Nonlinearity in Solid Solutions Based on Quasi-binary System (1 - x)(Na <sub>0.5</sub> , K <sub>0.5</sub> )NbO <sub>3</sub> - xPb(Zr <sub>0.5</sub> , Ti <sub>0.5</sub> )O <sub>3</sub>	K.P. Andryushin <sup>1,#</sup> , I.N. Andryushina <sup>1</sup> , B.E. Burcev <sup>1</sup> , L.A. Reznichenko <sup>1</sup>
6	Destruction Phenomena in Ferroactive Materials	K.P. Andryushin <sup>1,#</sup> , I.N. Andryushina <sup>1</sup> , S.V. Khasbulatov <sup>1</sup> , I.A. Verbenko <sup>1</sup> , L.A. Reznichenko <sup>1</sup>
7	The Structure and Dielectric Properties of Ceramics and Thin Films of Ferroelectric Materials Based on the PZT System for Frequency Selective Devices	I.N. Andryushina <sup>1,#</sup> , S.P. Zinchenko <sup>2</sup> , L.A. Shilkina <sup>1</sup> , E.V. Glazunova <sup>1</sup> , A.V. Pavlenko <sup>1,2</sup> , A.V. Nagaenko <sup>3</sup> , K.P. Andryushin <sup>1</sup> , L.A. Reznichenko <sup>1</sup>
9	Rescheduling Analysis to Redesign a Project Using Critical Path Method (CPM) (A Case Study of Surabaya City Council Office Building Project by PT. Tiara Multi Teknik)	Anofan Shoidal N., Wateno Oetomo*
10	The Lattice Dynamics and Structure of SBN/Pt/Al <sub>2</sub> O <sub>3</sub> Films	A.S. Anokhin <sup>1*</sup> , D.V. Stryukov <sup>1</sup> , A.V. Pavlenko <sup>1,2</sup>
11	Innovations in Single Photon Emission Computed Tomography	M.A. Antakov <sup>1,#</sup> , S.A. Tereshchenko <sup>1</sup>
12	New Criterion for Analysis Tomographical Properties of Miltipinhole Coded Apertures	M.A. Antakov <sup>1,#</sup> , S.A. Tereshchenko <sup>1</sup>
13	Applied Theory of the Vibration of Inhomogeneously Polarized Axisymmetric Bimorph Piezoelements	Arkadiy Soloviev, Pavel Oganessian, Pavel Romanenko, Le Van Duong, Olga Lesnjak
14	Investigation of Vibrational Effect in Incremental Sheet Metal Forming Process	Ashish Dubey <sup>1</sup> , Shiv Kumar <sup>1</sup> , P.K. Kankar <sup>2,#</sup> , P.K. Jain <sup>1</sup> , P. Tandon <sup>1</sup>
16	Surface Acoustic Wave Sensors of Vibration	A.S. Bagdasaryan <sup>1</sup> , V.G. Dneprovski <sup>2,#</sup> , I.A. Parinov <sup>2</sup>
17	Crystallization of In/GaAs Nanostructures with Wetting Layer Grown by Droplet Epitaxy	S. V. Balakirev <sup>1,#</sup> , M. M. Eremenko <sup>2</sup> , N. E. Chernenko <sup>2,3</sup> , O. A. Ageev <sup>2</sup> , M. S. Solodovnik <sup>1</sup>
18	Synthesis and Photocatalytic Properties of Zinc and Fluorine Co-doped TiO <sub>2</sub> Nanoparticles	E.M. Bayan <sup>1#</sup> , T.G. Lupeiko <sup>1</sup> , L.E. Pustovaya <sup>2</sup> , M.G. Volkova <sup>1</sup>
19	Investigation of the Effect of Different Organic Additives on Morphology and Electrocatalytic Activity of Platinum Nanomaterials towards Oxygen Reduction Reactions	S.V. Belenov <sup>1</sup> , W. Yohannes <sup>2</sup> , N.V. Lyanguzov <sup>3</sup> , V.E. Guterman <sup>1</sup> , V.A. Volochaev <sup>1</sup>
21	Investigation of initial stresses' influence on surface wave field in Bulk Metallic Glass Layer	T. I. Belyankova <sup>1,2,#</sup> , E. I. Vorovich <sup>3</sup> , V. V. Kalinchuk <sup>1,2</sup> , O. M. Tukodova <sup>3</sup>

22	Peculiarities of surface acoustic waves' (SAW) propagation in structures with functionally graded piezoelectric materials' (FGPM) coating from different ceramics on the basis of PZT	T. I. Belyankova <sup>1,2*</sup> , E. I. Vorovich <sup>3</sup> , V. V. Kalinchuk <sup>1,2</sup> , O. M. Tukodova <sup>3</sup>
23	Electronic Band Structure of the Phosphorus Doped Single Crystal Diamond: Energy Level Splitting of the Donor Ground State	V. D. Blank <sup>1,2</sup> , K. N. Boldyrev <sup>3</sup> , A. S. Galkin <sup>1</sup> , V. N. Denisov <sup>1,2,3*</sup> , V. V. Denisov <sup>1</sup> , M. S. Kuznetsov <sup>1</sup> , B. N. Mavrin <sup>3</sup> , S. A. Nosukhin <sup>1</sup> , D. D. Prikhodko <sup>1,2</sup> , A. A. Sukhanov <sup>4</sup> , S. A. Tarelkin <sup>1,2</sup> , and S. A. Terentiev <sup>1</sup>
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42	Approach to the Problem of Identifying Properties of Layered Inhomogeneous Media Based on the Use of Neural Networks	A.V. Cherpakov <sup>1,2*</sup> , N.Yu. Baturina <sup>2</sup> , Ya.A. Kokareva <sup>2</sup> , I.A. Parinov <sup>1</sup> , M.-Y. Yeh <sup>3</sup> , C.-D Yang <sup>3</sup>
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142	Plasmatic ALE for Removal of Disturbed Layers for the Formation of a Relief Surface with the Subsequent Growth of Quantum Dots by Droplet MBE	V.S. Klimin, A.A. Rezvan*
143	Ionization Sensor of Gases Based on Carbon Nanostructures	V.S. Klimin, A.A. Rezvan, J.V. Morozova*
144	Formation of Modify Layer by the AFM for Subsequent Obtaining Nanoscale Relief with Plasma Chemical Etching	V.S. Klimin*, A.A. Rezvan, R.V. Tominov
145	Investigation of Copper Films Properties on Sapphire Substrate	Yu.V. Klunnikova*, S.P. Malyukov, V.V. Matkin

146	Investigation of Chromium Films Properties on Sapphire Substrate	Yu.V. Klunnikova <sup>1,2*</sup> , S.P. Malyukov <sup>1</sup> , A.V. Sayenko <sup>1</sup> , A.V. Filimonov <sup>2</sup>
147	Investigation of Sapphire Growth and Treatment for Microelectronic Devices Manufacturing	Yu.V. Klunnikova*, S.P. Malyukov, D.V. Timoshchenko
148	Use of Vacuum Ion-Plasma Coatings in the Heavy-loaded Tribo Connections	V.I. Kolesnikov <sup>1</sup> , E.S. Novikov <sup>1*</sup> , O.V. Kudryakov <sup>2</sup> , V.N. Varavka <sup>2</sup>
149	Investigation of the Milling Process on Silicon Substrate Using Focused Ion Beam	A. Kotosonova*, O. Osotova, A. Ballouk, D. Rodriguez, A. Kolomiitsev
150	Isotope-labeled Reagents in the Catalysis of Acetylene Hydrochlorination over Supported PdCl <sub>2</sub> /C as Tools for Determining the Reaction Mechanism	T.V. Krasnyakova <sup>1,2*</sup> , D.V. Nikitenko <sup>1</sup> , I.A. Verbenko <sup>3</sup> , S.A. Mitchenko <sup>1</sup>
151	Investigation of Heavy Metals Sorption Mechanisms by the Humic Polymer Matrix	M. A. Kremennaya <sup>1*</sup> , A. I. Chechevatov <sup>1</sup> , T. A. Mikhailova <sup>1</sup> , Yu.S. Miroshnichenko <sup>2</sup> , T.N. Myasoedova <sup>2</sup> , G. E. Yalovega <sup>1</sup>
152	Investigation of the Co/Polyacrylonitrile Nanocomposite Electronic Structure	M. A. Kremennaya <sup>1*</sup> , V. A. Shmatko <sup>1</sup> , T. A. Mikhailova <sup>1</sup> , A. I. Chechevatov <sup>1</sup> , T. V. Semenistaya <sup>2</sup> , G. E. Yalovega <sup>1</sup>
153	Li-conductive Ceramics Li <sub>3x</sub> La <sub>2/3-x</sub> TiO <sub>3</sub> : Synthesis, Microstructure, Properties	G.B. Kunshina, O.B. Shcherbina*, V.V. Efremov
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155	Fabrication and Investigation of InSb Thin Films for IR SAW Photodetectors	M.E. Kutepov <sup>1</sup> , T.A. Minasyan <sup>1</sup> , D.A. Zhilin <sup>1</sup> , V.E. Kaydashev <sup>1,2</sup> , G.Y. Karapetyan <sup>1</sup> , K.G. Abdulvakhidov <sup>1</sup> , S.I. Shevtsova <sup>1</sup> , E.M. Kaidashev <sup>1*</sup>
156	Morphology Investigation of Nanocomposite Film Gas-sensing Materials Based on Polyacrylonitrile	E.V. Kutomkina, T.V. Semenistaya*
157	Identification of the Mechanical Properties of Biological Materials and the Definition of Energy-efficient Modes of Their Separation Based on Mathematical Models	Yu. F. Lachuga <sup>1</sup> , A. N. Soloviev <sup>2*</sup> , A. A. Matrosov <sup>2</sup> , I. A. Panfilov <sup>2</sup> , V. I. Pakhomov <sup>2,3</sup> , D. V. Rudoy <sup>2</sup>
159	Studying Kinetics, Dynamics and Durable Testing of Rehabilitation Support Equipment for People Suffering from Paralysis and Degenerative Joint Disease	Le Hong Ky*, Le Hoang Anh
160	Study the Effect of Nozzle Flushing on Powder Mixed Electrical Discharge Machining	Le Quang-Dung <sup>1,2*</sup> , Banh Tien-Long <sup>1,2</sup> , Nguyen Huu-Phan <sup>3</sup> , L.P. Ashen Thakshila <sup>1</sup> , J.M.A. Shreen Deshadh Jayakody <sup>1</sup>
161	Dynamic Stiffness Formulation for Vibration of FGM Stepped Annular Plate with Non-homogeneous Properties	Le Quangvinh <sup>1*</sup> , Nguyen Donganh <sup>2**</sup> , Nguyen Manhcuong <sup>3****</sup>
163	Buckling Analysis of Folded Composite Plate Subjected to In-plane Loading Condition	Le Thuong Hien*, Bui Van Binh**

165	An Experimental Study on the Influence of Some Main Geometrical Parameters of Cutting Blades of Medical Surgical Scissors with Curved Tip on Cutting Forces	Le Van Tham <sup>1</sup> , Bui Ngoc Tuyen <sup>2*</sup> , Phan Bui Khoi <sup>2</sup>
167	Study of the Structural Effects of Non-stoichiometry in Oxide Perovskites Based on Lead Magnoniobate (PMN)	A. R. Lebedinskaya*, A. G. Rudskaya
168	The Temperature Dependences Investigation of the Structural Parameters of Lead Magnoniobate (PMN)	A. R. Lebedinskaya*, A. G. Rudskaya
169	Characterization of Lead Zirconate Titanate/Modified Nickel Ferrite Multiferroic Composites Derived from Submicron Precursors	I. V. Lisnevskaya
170	Percolation Effects in Lead Zirconate Titanate/Cobalt Nickel Ferrite Magnetoelectric Composites	I. V. Lisnevskaya*, N. A. Levshina
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175	A Study of a Graphical Method Based on Modified Maximum Force Criterion to Estimate Forming Limit Curves of Boron Steel Sheets at Elevated Temperatures	Luyen The-Thanh <sup>1</sup> , Nguyen Duc-Toan <sup>2*</sup>
176	Three-axis Micromechanical Accelerometer in Single-chip Design	I. E. Lysenko, O. A. Ezhova*
177	Electromagnetic Analysis of Capacitive RF MEMS Switch for X-Band Applications	I.E. Lysenko, A.V. Tkachenko*
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180	Influence of the Quantity of Double Ring Resonators Placed under the Coplanar or Transit Transmission Lines on Their Conducting Properties	I.V. Malyshev*, E. V. Nikolayev
181	Measurement of the Progression of Oil-main Cultures Seeds by SHF (EHF) Scanning Method	I.V. Malyshev*, N.V. Parshina
182	Appearance of Ordered Systems of Defects in Single Crystals of Lithium Niobate of Different Composition and Origin under Action of Outer Forces of Different Types	D.V. Manukovskaya*, M.N. Palatnikov, N.V. Sidorov, V. V. Efremov, O. V. Makarova
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190	Experimental Justification of the Perspective Measurement Method for Spatial Displacements of Control Object Surfaces	I.P. Miroshnichenko* <sup>1</sup> , I.A. Parinov <sup>2</sup>
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194	Functional Cell of Nanoelectronic Devices Based on Carbon Nanostructures	J.V. Morozova*, A.A. Rezvan, V.S. Klimin
195	Volume Fraction Optimization under Steady State Heat Conduction in Ni-Al <sub>2</sub> O <sub>3</sub> FGM Composites by Minimizing the Residual Stresses	Mrinal Gautam*, S.K. Rathore
196	Blood Vessel Detecting by Using Infrared and Raspberry Pi	Muaffaq A. Jani*, Mulyanto Nugroho, Zenobius O. Setiawan
197	Composition Effect of Basic Materials and Variations of Adhesive Types on Rice Husk and Coconut Shells Mixed Briquettes	Muhyin <sup>1</sup> , Dwi Yuli Rakhmawati <sup>2*</sup> , Aris Adhi Pratama <sup>1</sup>
198	Synthesis and Electrochemical Performances of Layered Structured NaLi <sub>0.2</sub> Mn <sub>0.8-x</sub> Ti <sub>x</sub> O <sub>2</sub> Oxides as Electrode for Sodium-ion Batteries	My H. T. To <sup>1</sup> , Ky V. Nguyen <sup>1</sup> , Son T. Luong <sup>1</sup> , Chung V. Hoang <sup>2</sup> , Oanh T. T. Nguyen <sup>2</sup> , Ha M. Hoang <sup>3</sup> , Hoa T. T. Nguyen <sup>3</sup> , Nghia V. Nguyen <sup>3*</sup>
199	Inhomogeneous Materials Modeling with 3-1 Coherence in ACELAN COMPOS Package	D.K. Nadolin <sup>1</sup> , A.V. Nasedkin <sup>1</sup> , P.A. Oganessian <sup>1</sup> , A.N. Soloviev <sup>1,2</sup> , E.N. Ziborov <sup>2</sup>
200	Dependence of the Electrophysical Parameters of Piezoceramic Materials on the Structure of the Ceramic Frame	A.V. Nagaenko*, S.N. Svirskaya
201	Finite Element Investigation of Effective Moduli of Transversely Isotropic Thermoelastic Materials with Nanoscale Inclusions	A.V. Nasedkin <sup>1</sup> , A.A. Nasedkina <sup>1*</sup> , A. Rajagopal <sup>2</sup>
202	Influence of Pore Shape on the Effective Properties of Porous Inhomogeneous Polarized by Direction Piezoceramic Material with Metallized Pore Boundaries: Finite Element Analysis	A.V. Nasedkin <sup>1*</sup> , M.E. Nassar <sup>1,2**</sup>
203	Analysis and Identification of the Initial Stressed State of an Inhomogeneous Thin Plate with Holes	R. D. Nedin
204	Modelling and Reconstruction of Prestress Field in a Thin Plate with a Non-uniform Coating	R. Nedin*, A. Vatulyan
205	Elastic Compensation in AlGaPAs/GaAs Heterostructures Factored by Thermal Expansion	V.V. Nefedov
206	Longitudinal and Hydrostatic Piezoelectric Responses of a Novel 2–2-type Composite	A. A. Nesterov <sup>1</sup> , V. Yu. Topolov <sup>2*</sup> , M. I. Tolstunov <sup>1</sup> , A. N. Isaeva <sup>2</sup>
207	Solution of the Thermoelastic Problem of the Deformation of the "Coating – Substrate" System in the Presence of the Delamination Region	S.A. Nesterov

210	Experimental Survey of Some Technological Parameters when Processing Inconel and Titanium Special Materials for Aerospace Industry	Nguyen Dinh Tung, Ngo Dang Huynh*
211	Structure and Properties of SiO <sub>x</sub> and Si/SiO <sub>x</sub> Nanostructures	Nguyen Duc Chien <sup>1,2*</sup> , Nguyen Huu Lam <sup>1,2</sup> , Pham Thanh Huy <sup>2,3</sup>
213	Study on the phase transformation of CuAl9Fe4 Alloy	Nguyen Duong nam <sup>1</sup> , Vu Anh Tuan <sup>2</sup> , Pham Mai Khanh <sup>3</sup>
216	The Structural Correlation and Mechanical Properties in Amorphous Hafnium Oxide under Pressure	Nguyen-Hoang Thoan <sup>a</sup> , Nguyen-Trung Do <sup>a</sup> , Nguyen-Ngoc Trung <sup>a*</sup> , Le-Van Vinh <sup>b</sup>
220	A Study of Determination of Sewing Conditions to Meet the Quality of the Lockstitch Seam on High Quality Men's Shirts	Nguyễn Phương Linh <sup>1,2*</sup> , Phan Thanh Thảo <sup>1</sup>
222	Experimental Research to Determine Braking Force of Tractor Semi-trailer	Nguyen Thanh Tung <sup>1*</sup> , Vo Van Huong <sup>2**</sup>
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233	Reliability-based Design Optimization for Frame Crane	Nguyen Tuan Linh*, Nguyen Van Luat, Nguyen Hong Tien
234	Building Algorithm for Determining the Line Guide Parameters of a Moving Object by a Multi-System Accelerometer	Nguyen Van Dien <sup>1,2*</sup> , Nguyen Ba Viet <sup>2</sup> , To Ba Thanh <sup>2</sup> , Tran Duc Thuan <sup>2</sup>
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244	Investigation of Cultivation of Microalgae Chlorella Vulgaris for Biodiesel Production	A.A. Okhotnikova*, V.A. Smirnov
245	Phase States and Electrophysical Properties of Multicomponent Perovskite Solid Solutions on the Base of PMN-PT and PZT Systems	A.A. Pavelko*, L.A. Shilkina, L.A. Reznichenko
246	Analysis of the Stressed-deformed State of the Support Plate of an Antenna Grid in the Process of Operation	A.N. Pedenko*, A.A. Matrosov, A.N. Soloviev
247	SnO <sub>2</sub> – ZnO thin films: Synthesis and Properties	V.V. Petrov*, E.M. Bayan, D.A. Sedova, Yu.N. Varzarev, A.A. Rozhko
248	The Investigation Effects of Rapid Thermal Annealing on Structural Properties of Thin Films of Lead Zirconate Titanate	V.V. Petrov, V.V. Polyakov, Yu.N. Varzarev, V.V. Bespoludin*
249	Properties of Thin Lead Zirconate Titanate Films	V.V. Petrov, Yu.N. Varzarev, A.S. Kamentsev, A.A. Rozhko*
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256	Investigate the Effect of Frequency in Powder Mixed EDM Using Low-frequency Vibration on Workpiece Assigned for SKD61	Phan Nguyen Huu <sup>a*</sup> , Banh Tien Long <sup>b</sup> , Dung Le Quang <sup>c</sup>
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259	Design Measuring System of Upsetting Tube Force on the Crank Stamping Machine	Phan Thi Ha Linh <sup>1,2*</sup> , Nguyen Dac Trung <sup>2</sup> , Pham Quang Minh <sup>3</sup>
260	Studying on Nozzle Diameter and System Force Effect on Separable Ability of Liquid Jets by the Molecular Simulation Method	Phan Văn Thiệu, Nguyễn Văn Quảng*, Đoàn Minh Phương
262	Development of a Household Methane Sensing Device	V.E. Polosina <sup>1</sup> , T.V. Semenistaya <sup>2*</sup>
263	Scanning Probe Nanolithography of Silicon Profiling Nanostructures for Memristor Crossbar Architecture	V.V. Polyakova*, I.N. Kots, V.A. Smirnov
264	Numerical Study of Stressed-deformed Condition of Bricks Samples at Compression Tests	N.A. Poryadina*, A.A. Matrosov, I.A. Serebryanay, D.A. Nizhnik, A.N. Soloviev
265	Task on Data Flow of Minimum Cost on the Base of Bionic Algorithm	O. A. Purchina <sup>1</sup> , A.Yu. Poluyan <sup>1</sup> , D. D. Fugarov <sup>1*</sup> , D.A. Onyshko <sup>2</sup>



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267	First-principle Investigations of Cl Decorated Armchair GaN Nanoribbons	Rachana Yogi, Neha Tyagi, Neeraj K. Jaiswal*
268	Ions Substitution Effect on the Magnetic Phase Transition Temperature of 0.5BiFeO <sub>3</sub> – 0.5ATiO <sub>3</sub> (A = Pb, Sr) Solid Solutions	S.I. Raevskaya <sup>1*</sup> , S.P. Kubrin <sup>1</sup> , Jian Zhuang <sup>2</sup> , I.P. Raevski <sup>1</sup> , G.A. Simachkova <sup>1</sup> , M.A. Malitskaya <sup>1</sup> , I.N. Zakharchenko <sup>1</sup> , V.V. Titov <sup>1</sup>
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270	Pyroelectric properties of nanbo <sub>3</sub> ceramics in the range between -150 and +50°C	<i>I.P. Raevski<sup>1*</sup>, S.G. Lutokhin<sup>1</sup>, Y.N. Zakharov<sup>1</sup>, V.V. Titov<sup>1</sup>, S.I. Raevskaya<sup>1</sup>, M.A. Malitskaya<sup>1</sup>, G.R. Li<sup>2</sup>, E.I. Sitalo<sup>1</sup></i>
271	Simulation of an Integrated Multi-axis Accelerometer of Tunnel Type in CAD ANSYS	A.Sh. Rakhmatulin, V.D. Popov, M.A. Denisenko, A. S. Isaeva
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274	Granulometric Distribution of the Kundryuchya and Bolshaya Gnilusha Rivers' Sediments (Rostov Region, Krasniy Sulin)	V.N. Reshetnyak <sup>1</sup> , A.D. Sazonov <sup>1</sup> , O.S. Reshetnyak <sup>1,2*</sup>
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280	Dielectric Spectroscopy of Solid Solutions of Binary System (1 – x)NaNbO <sub>3</sub> – xCu <sub>0.5</sub> NbO <sub>3</sub>	Kh.A. Sadykov <sup>1,2*</sup> , K.P. Andryushin <sup>1</sup> , Yu.I. Yurasov <sup>1,3</sup> , I.A. Verbenko <sup>1</sup> , L.A. Reznichenko <sup>1</sup>
282	Coupled Problem of Thermoviscoelasticity for Composite Polymer Shell of Revolution	V.G. Safronenko
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286	Comparative Analysis of the Physico-mechanical Characteristics of Centrifuged and Vibro-centrifuged Concretes	E.M. Shcherban <sup>1</sup> , S.A. Stel'makh <sup>1</sup> , A.V. Cherpakov <sup>1,2*</sup>
287	Compression Strength Study of the Test Samples of Reinforced Concrete Columns, Manufactured by Vibration Method	E.M. Shcherban <sup>1</sup> , S.A. Stel'makh <sup>1</sup> , A.V. Cherpakov <sup>1,2*</sup>
288	The Study of Compressive Strength of the Test Samples of Centrifuged Reinforced Concrete Columns with Annular Cross-section	E.M. Shcherban <sup>1</sup> , S.A. Stel'makh <sup>1</sup> , A.V. Cherpakov <sup>1,2*</sup>
289	Catalytic Properties and Atomic Structure of Bimetallic Nanoparticles PtM ( $M = \text{Ni, Co, Cu}$ ) in PtM/C Electrocatalysts for Low-temperature Fuel Cells	D.B. Shemet*, V.V. Pryadchenko, V.S. Menshikov, A.K. Nevelskaya, V.E. Guterman, L.A. Bugaev
291	Nanocomposites MeO <sub>x</sub> /CNT: SEM and X-ray Spectroscopy Studies	V.A. Shmatko <sup>1*</sup> , M.A. Kremennaya <sup>1</sup> , E. S. Bogoslavskaya <sup>1</sup> , S.Y. Agafonova <sup>1</sup> , D.A. Ostapenko <sup>2</sup> G.E. Yalovega <sup>1</sup>
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293	Physico-chemical Properties of Protective Organic Coatings Based on Dispaced Benzimidazole Derivant	S.P. Shpanko*, E.N. Sidorenko, K.G. Abdulvakhidov, D.A. Grineva
294	Reverse Properties of Radioabsorption by BaTiO <sub>3</sub> and PCR-1	E.N. Sidorenko <sup>1*</sup> , Chan Thi Beat Ngoc <sup>2</sup> , I.I. Natkhin <sup>1</sup> , A.V. Shloma <sup>1</sup>
295	The Study of Morphology of Anti-Corrosion Organic Films by Atomic-force Microscopy	E.N. Sidorenko*, S.P. Shpanko, M.A. Bunin, T.I. Debelova, M.D. Miruschenko, V.A. Yorshin
296	Radio-absorbing and Emitting Properties of Multiferroics	E.N. Sidorenko*, V.G. Smotrakov, M.V. Efremov, M.A. Marakhovskiy
297	Influence of Boron on Structural Features and Mechanism of Photorefraction in Lithium Niobate Single Crystals	N.V. Sidorov, N.A. Teplyakova, R.A. Titov*, M.N. Palatnikov
298	Polarization and repolarization processes in multicomponent pzt based piezoceramics with a diffuse phase transitions	A.V. Skrylev <sup>1*</sup> , G.M. Akbaeva <sup>2</sup> , A.I. Burkhanov <sup>3</sup> , A.V. Sopit <sup>3</sup>
299	Piezoelectric Ceramic - Polymer Composites for Hydroacoustics	V.G. Smotrakov*, V.V. Eremkin, E.I. Sitalo
300	Parametric Study of Bending of Bimorph with Nonlinear Distribution of Electric Potential	A.N. Soloviev <sup>1,2*</sup> , V.A. Chebanenko <sup>3**</sup> , I.A. Parinov <sup>2***</sup> , A.A. Solovieva <sup>3</sup> , C.-Y. Jenny Lee <sup>4</sup> , Y.-M. Liu <sup>5</sup>
303	Visualization of Internal Defects of Structural Elements on the Base of Deep Generative Artificial Neural Network	A. N. Soloviev, B. V. Sobol, P. V. Vasiliev*, A.V. Senichev
304	Structure Features and Properties of Sr <sub>0.75</sub> Ba <sub>0.25</sub> Nb <sub>2</sub> O <sub>6</sub> Ferroelectric-relaxor with TBB Structure	D.V. Stryukov <sup>1*</sup> , A.V. Pavlenko <sup>1,2</sup>

307	Low- and high-field electromechanical responses of relaxor-based multicomponent ceramics for application in multiregime actuators	M.V. Talanov, A.A. Pavelko, L.A. Reznichenko
308	Research and Production of New Material Using the Balsa Wood Combined with Composites Applying for Unmanned Aerial Vehicle	Tan-Hung Dinh <sup>1*</sup> , Viet-Anh Nguyen <sup>1</sup> , Cong-Truong Dinh <sup>2</sup>
310	Determining the Equilibrium Position of the Center of the Shaft in the Floating Bearing	N.V. Thang <sup>1*</sup> , A.K. Belyaev <sup>2</sup>
313	Development of Image Merging Software to Build Corrosion Mapping for Fuel Tank Based-on Phased Array Ultrasonic Testing Technology	Thanh-Tuan To, Thien-Ngon Dang <sup>*</sup>
318	A Self-optimizing Control for Intelligent CNC Machine Tools Using Hybrid Algorithm	Tien Dung Hoang <sup>*</sup> , Duc Quy Tran, Văn Thien Nguyen, Duc Trung Do, Nhu Tung Nguyen
319	Determination of Diffusion Constants for Ammonia and Water in ZrO <sub>2</sub> by Impedance Spectroscopy	Tien Q. Nguyen <sup>1*</sup> , Cornelia Bretkopf <sup>2**</sup>
320	Principle of Complex Application of X-ray, Multifractal and Dielectric Analysis in the Study of Anisotropy of Piezoelectric Properties in Popous Ceramics	S.V. Titov <sup>*</sup> , L.A. Shilkina, V.V. Titov, S.I. Dudkina, L.A. Reznichenko
321	Study of Resistive Switching Effect in Thin ZnO Films for Neuromorphic Systems	R.V. Tominov <sup>*</sup> , V.I. Avilov, A.A. Avakyan, V.A. Smirnov
322	Hydrostatic Piezoelectric Parameters of Lead-free 2–0–2 Composites with Two Single-crystal Components	V. Yu. Topolov <sup>*</sup> , A. N. Isaeva
323	Orientation Effects and Effective Parameters of Modern Piezo-active Composites Based on Relaxor-ferroelectric Single Crystals	V. Yu. Topolov <sup>1*</sup> , A. V. Krivoruchko <sup>2</sup> , C. R. Bowen <sup>3</sup>
326	Determination of Suspended Sediment Concentration Using Sentinel 2 Multispectral data, a Case Study: Day River, Vietnam	Trinh Le Hung <sup>1*</sup> , Dinh Thi Thu Hien <sup>2</sup> , Dinh Lam Thang <sup>3</sup>
330	Affect of blade geometry on the performance of ship propellers	Tuan Phan Anh
332	Research of Dynamics of the Side Dump Bucket Loader MCV E500-1 for Tunnel Construction by the Drill and Blast Method	Van Dat Chu <sup>1</sup> , Van Huy Ta <sup>2*</sup>
335	Constrained Multi-objective Optimization Design of a Linear Compliant Mechanism Using Pseudo Rigid-Body Diagram Analysis, Taguchi Method, Parameters Response Surface Methodology and NSGA-II.	Van-Khien Nguyen <sup>1</sup> , Huy-Tuan Pham <sup>1</sup> , Huy-Hoang Pham <sup>2</sup>
336	Design and Analysis of a New Compliant Ultra-High Precision XY Positioning Stage Using Hybrid Flexure Hinges, Leaf Spring and Bezier Curved Segments.	Van-Khien Nguyen <sup>1</sup> , Huy-Tuan Pham <sup>1</sup> , Huy-Hoang Pham <sup>2</sup> .
342	The Wear Nucleation and Development in Nanocomposite Coatings under the Action of a Discrete Vapor-Droplet Flow	V.N. Varavka <sup>*</sup> , O.V. Kudryakov, I.Yu. Zabayaka, N.I. Bronnikova
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345	Regarding Some Problems on Identification of Properties of Functionally Gradient Waveguides with Coatings	A.O. Vatulyan, V.O. Yurov
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347	Waste Management in Surabaya City East Java Province, Indonesia	Victoria Aurellia Sri Paramita Putri <sup>1*</sup> , Erni Puspanantasari Putri <sup>2</sup>
348	A Study of the Effect of Principal Parameters of Air Bearing on the Stiffness and Straightness of Linear Guideway	Viet-Tiep Hoang, Toan-Thang Vu, Thanh-Tung Vu*
350	Determination of Residual Stresses of Coarse-Grained Crystalline Materials	Vinh-Phoi Nguyen, Thien-Ngon Dang <sup>*</sup> , Chi-Cuong Le, N. P. Long Nguyen,
351	Electric and Magnetic Properties of Two-component Solid Solution Composition $\text{La}_{0.5}\text{Bi}_{0.5}(\text{Mn}_x\text{Fe}_y)\text{O}_3$	D.V. Volkov
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353	Study of the Amplitude Modulation of Signal Phase in Microwave Microvacuum Gate	P. Yu. Voloshchenko, Yu. P. Voloshchenko*
354	Modeling a High Speed Tracked-vehicle for Studying Oscillation while Considering the Influence of Neighbored Road Wheel's Oscillation	Vu Duc Lap*, Pham Hoang Minh**
355	A Novel Method of Radius Measurements Using Frequency Modulation Laser Diode and Synchronous Detection Technique	Vu-Hai-Linh Nguyen, Toan-Thang Vu, Thanh-Tung Vu*
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360	$\text{A}_2\text{TiSi}_2\text{O}_8$ Minerals ( $A = \text{Ba}, \text{Pb}$ ) are Possible Ferroics	S.S. Weber <sup>1</sup> , A.R. Lebedinskaya <sup>2</sup> , D.I. Rudsky <sup>2</sup> , Yu.V. Kabirov <sup>1</sup> , A.G. Rudskaya <sup>1*</sup> , M.F. Kupriyanov <sup>1</sup>
361	Redistribution of Hydrogen under Dynamic Loading of Metal Structures	Yu. A. Yakovlev*, K. P. Frolova
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371	On the Aspects of Elective Demonstration of the Effect of Contact Approach of Elastic Bodies	G.A. Zhuravlev <sup>1</sup> , T.M. Andreeva <sup>1*</sup> , Yu.E. Drobotov <sup>1,2</sup>
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375	The Crystal Structure and Dielectric Properties of Bi <sub>3-x</sub> Gd <sub>x</sub> TiNbO <sub>9</sub> (x = 0, 0.1, 0.2, 0.3) of a New Perovskite-like Solid Solution with a High Curie Temperature	S.V. Zubkov