



2020 International Conference on “Physics and Mechanics of New Materials and Their Applications” (PHENMA 2020)
Kitakyushu, Japan, March 26 – 29, 2021

SCHEDULE OF INTERNATIONAL CONFERENCE ON “PHYSICS AND MECHANICS OF NEW MATERIALS AND THEIR APPLICATIONS” (PHENMA 2020), March 26–29, 2021

Online Presentaion

- Presentation Instrument: Zoom
- Presentation Room No.: Meeting Room 1, Meeting Room 2, Meeting Room 3, Meeting Room 4

Date	March 26 (Online-Offline Schedule)
15:00~18:00 (UTC+9)	Registration - Online Registration Check

Date	March 27 (Meeting Room 1)	
15:00~15:20 (UTC+9)	Opening Ceremony Chairperson: N.A. Noda	
	<ol style="list-style-type: none"> 1. Opening - Prof. N.A. Noda, Organizer of PHENMA2020 2. Welcome Address - Yun-Hae Kim (Korea Maritime and Ocean University, Korea) 3. Congrats Address - I.A. Parinov (Southern Federal University, Russia) - S.-H Chang (National Kaohsiung University of Science and Technology, Taiwan) 	
Plenary Speech		
15:20~15:45 (UTC+9)	Ri-ichi Murakami (Chengdu University, China) anewmoon816@gmail.com	Effects of Water pH and Immersion Time on Water Absorption Behavior and Mechanical Properties of Carbon Fiber Reinforced Bio Plastic Composites
15:45~16:00 (UTC+9)	Break	
Keynote Speech Chairperson: Genji Hotta		
16:00~16:25 (UTC+9)	A.V. Lyasnikova (Don State Technical University, Russia) lyasnikovaav@mail.ru	Improving the Functional Characteristics of Biocompatible Coatings of Bone Implants due to Modification of the Initial Powders
16:25~16:50 (UTC+9)	Cheng-Fu Yang (National University of Kaohsiung, Taiwan) cfyang@nuk.edu.tw	Mechanism of Growth ZnO Nanowires and Application
16:50~17:00 (UTC+9)	Break	
General Presentation Session A-1 Chairperson: Pankaj Koinkar		
17:00~17:15	Pankaj Koinkar	Cotrolling the Optoelectrical Properties of Two-

(UTC+9) Invited Speech	(Tokushima University, Japan) koinkar@tokushima-u.ac.jp	Dimensional Nanostructures Prepared by Laser Ablation in Liquid
17:15~17:25 (UTC+9)	Chih Chin Yang (National Kaohsiung University of Science and Technology, Taiwan) chchyang@nkust.edu.tw	Respiration Sensing Devices Based on Indium Nitride <i>p-n</i> Heterostructure on Silicon Porous Substrate
17:25~17:35 (UTC+9)	I.V. Bogachev (Southern Federal University, Russia) bogachev89@yandex.ru	On the Identification of the Characteristics of Functional-Gradient Plates in the Framework of the Kirchhoff and Timoshenko Models
17:35~17:45 (UTC+9)	Jeong-Wan Kim (Pusan National University, Korea) tgkim@pusan.ac.kr	MgF ₂ Nanoparticle Coating to Improve the Efficiency of Light Hazzard in DSLR Cameras
17:45~17:55 (UTC+9)	Biao Wang (Kyushu Institute of Technology, Japan) gongliwangbiao@163.com	Nut Height Effect on Anti-Loosening Performance of Pitch Difference Bolt Nut Connections
17:55~18:05 (UTC+9)	Break	
	General Presentation Session A-2 Chairperson: Soo-Jeong Park	
18:05~18:20 (UTC+9) Invited Speech	Soo-Jeong Park (Korea Maritime and Ocean University, Korea) blue9069@naver.com	Reinforcing Effects of CNT Nanofiller for Enhancing the Interfacial Bonding Strength of Filament Wound FRP Composites
18:20~18:30 (UTC+9)	Noriko Tutsumi (Oita University, Japan) tsutsumi-noriko@oita-u.ac.jp	Effect of Hydrogen on Fracture Mechanism in Tensile Test of Carbon Steels
18:30~18:40 (UTC+9)	N.V. Andros (Southern Federal University, Russia) andross@mail.ru	Occurrence of 3D Periodic Convective Flows in a Vertical Layer with Moving Boundaries
18:40~18:50 (UTC+9)	Ta-Chi Jeang (National Kaohsiung University of Science and Technology, Taiwan) hywang@nkust.edu.tw	A Novel Universal Voltage-Mode Inverse Filter for Signal Processing
18:50~19:00 (UTC+9)	Kinjirou Saito (Kyushu Institute of Technology, Japan) saito.h2e.kinjiro@jp.nipponsteel.com	How to Estimate Fatigue Strength of Wood Material

Date	March 27 (Meeting Room 2)	
	General Presentation Session B-1 Chairperson: Sung-Youl Bae	
17:00~17:15 (UTC+9) Invited Speech	Sung-Youl Bae (Korea Institute of Ceramic Engineering and Technology, Korea) bsy@kicet.re.kr	A Study on Structural Design and Analysis of 18ft CFRP Leisure Boad
17:15~17:25 (UTC+9)	Tianyu Yu (Korea Maritime and Ocean	Experimental and Computational Studies on Stiffness Properties of Nanoclay-Incorporated FRPs

	University, Korea) yutianyukmou@gmail.com	with Different Nano-Structures
17:25~17:35 (UTC+9)	Yu-Hao Chiu (National Kaohsiung University of Applied Sciences, Taiwan) sayeh@outlook.com	Using Supervised Learning Algorithms to Predict the Risk of Thyroid Damage for Head and Neck Cancer Patients after Radiation Therapy
17:35~17:45 (UTC+9)	Young-Woo Kwon (Pusan National University, Korea) tgkim@pusan.ac.kr	A Study on the Micro/Nano Texture Design to Improve the Friction Properties of DLC Thin Films
17:45~17:55 (UTC+9)	V.A. Chebanenko (Federal Research Center “Southern Scientific Center of the Russian Academy of Sciences”, Russia) valera.chebanenko@yandex.ru	Applied Theory of Bending Vibrations of a Bimorph with Two Active Composite Piezomagnetolectric Layers
17:55~18:05 (UTC+9)	Break	
	General Presentation Session B-2 Chairperson: Ji-Eon Kim	
18:05~18:20 (UTC+9) Invited Speech	Ji-Eon Kim (Korea Maritime and Ocean University, Korea) wldjs010@naver.com	A Study on the Removal of Paint and Oxide Layer on the Steel Surface by Laser Beam Scanning Method
18:20~18:30 (UTC+9)	Duy-Hieu Nguyen (National Kaohsiung University of Applied Sciences, Taiwan) ctlin@nkust.edu.tw	Investigating the Effectiveness of Shore-Line Power Using AERMOD Model under the Aspect of Ship Emission
18:30~18:40 (UTC+9)	Hisanori Tottori (Kyushu Institute of Technology, Japan) tottori.hisanori731@mail.kyutech.jp	Development of Multi-Layered Sewer Pipe Plug - Ruptured Test and Stress Analysis of Protective Sheet
18:40~18:50 (UTC+9)	Jeong-Hyo Hong (Korea Maritime and Ocean University, Korea) sea0628@naver.com	Experimental Study on Mechanical Properties of Sandwich Composites with Integrating Auxetic-Core Structure Using FDM 3D Printer
18:50~19:00 (UTC+9)	A.N. Isaeva (Southern Federal University, Russia) isaeva.ashura@yandex.ru	Piezoelectric Sensitivity and Anisotropy in 1–3 Type Composites Based on Ferroelectric Lead-Free Single Crystals

Date	March 27 (Meeting Room 3)	
	General Presentation Session C-1 Chairperson: Chitsan Lin	
17:00~17:15 (Invited Speech)	Chitsan Lin (National Kaohsiung University of Applied Sciences, Taiwan) ctlin@nkust.edu.tw	Using a Novel Graphene-Ceramic Composite material in the Adsorption of Aromatic Volatile Organic Compounds
17:15~17:25	Kazuhiro Oda (Oita University, Japan) oda-kazuhiro@oita-u.ac.jp	Stress Intensity Factors of Interfacial Crack Associated with Different Interface Edge Singularities
17:25~17:35	Sung-Won Yoon (Research Institute of Medium &	Lamination Design for Composite Material Application of Ship Radar Mast

	Shipbuilding, Korea) swyoon@rims.re.kr	
17:35~17:45 (UTC+9)	A.N. Isaeva (Southern Federal University, Russia) isaeva.ashura@yandex.ru	Figures of Merit of Novel Piezo-Active Lead-Free Composites
17:45~17:55 (UTC+9)	Rahimah Abdul Rafar (Kyushu Institute of Technology, Japan) eimah7178@gmail.com	Effect of Shaft's Rigidity and Motor Torque on Interfacial Slip for Shrink-fitted Bimetallic Work Roll
17:55~18:05 (UTC+9)	Break	
	General Presentation Session C-2 Chairperson: Tae-Hwan Jang	
18:05~18:20 (UTC+9) Invited Speech	Tae-Hwan Jang (Pusan National University, Korea) taehwan110@hanmail.net	Multi-Layer Thin Film Deposition for High-Performance X-Ray Field Emission Characteristics
18:20~18:30 (UTC+9)	Te-Jen Su (National Kaohsiung University of Sciences and Technology, Taiwan) sutj@kuas.edu.tw	A Neural Network Analysis to The Risk Factors of Type 2 Diabetes
18:30~18:40 (UTC+9)	Tatsujiro Miyazaki (University of the Ryukyus, Japan) t-miya@tec.u-ryukyu.ac.jp	Proportional Method for Evaluating Intensity of Singular Stress Field for Butt Joint with Adhesive Spew
18:40~18:50 (UTC+9)	Yudai Taruya (Kyushu Institute of Technology, Japan) q104070y@mail.kyutech.jp	Experimental Verification for Interfacial Creep Generation for Shrink-fitted Bimetallic Work Roll by Using Miniature Rolling Mill
18:50~19:00 (UTC+9)	M.K. Song (Korea Maritime and Ocean University, Korea) moobburi@hanmail.net	Effect of Focal Position on Cut Surface Quality in Laser Cutting of 50 mm Thick Stainless Steel

Date	March 27 (Meeting Room 4)	
	General Presentation Session D-1 Chairperson: Chang-Wook Park	
17:00~17:15 (UTC+9) Invited Speech	Chang-Wook Park (Research Institute of Medium & Shipbuilding, Korea) cwpark@rims.re.kr	Mechanical Properties of Large-Scale Composite Structures according to Process Condition
17:15~17:25 (UTC+9)	Rahimah Abdul Rafar (Kyushu Institute of Technology, Japan) eimah7178@gmail.com	Effect of Driving Torque on Interfacial Creep Generation for Shrink-fitted Bimetallic Work Roll Considering Elastic Deformation of Shaft
17:25~17:35 (UTC+9)	Yang-Wei Hsieh (National Kaohsiung University of Applied Sciences, Taiwan) tflee@nkust.edu.tw	Improve the Efficiency of the Patients' Specific Quality Assurance Procedure in Fields' Optimization Techniques of the Pencil Beam Linear Scanning Proton Therapy
17:35~17:45 (UTC+9)	Yu. E. Drobotov (Southern Federal University, Russia)	Evaluation Criteria for the Influence of the Material Properties of Elastic Cylinders on Their Contact Approach

	yu.e.drobotov@yandex.ru	
17:45~17:55 (UTC+9)	B.B. Musmade (Savitribain Phule Pune University, India) bbmusmade@dypcoeakurdi.ac.in	Robust Sliding Mode Control of Uncertain Nonlinear Systems
17:55~18:05 (UTC+9)	Break	
	General Presentation Session D-2 Chairperson: Genji Hotta	
18:05~18:20 (UTC+9) Invited Speech	Yasushi Takase (Kyushu Institute of Technology, Japan) takase.yasushi415@mail.kyutech.jp	Convenient and Accurate Formulas for Stress Intensity Factor Distribution of Semi-Elliptical Surface Crack
18:20~18:30 (UTC+9)	Seong-Jae Park (Korea Maritime and Ocean University, Korea) kay9601@naver.com	Effect of Heating Rate on Mechanical Properties of Polymer Matrix of Carbon/PEKK Composites in Thermoforming Process
18:30~18:40 (UTC+9)	Yu. E. Drobotov (Southern Federal University, Russia) yu.e.drobotov@yandex.ru	Method for Calculating Stress Concentration in Elastoplastic Rod with Two Symmetric Hyperbolic Recesses
18:40~18:50 (UTC+9)	Hsueh Chen Shen (National Kaohsiung University of Sciences and Technology, Taiwan) ctlin@nkust.edu.tw	A Study on Nitrogen oxides from Coal and Waste Tires in Different Proportion of Mixed Burning
18:50~19:00 (UTC+9)	K.N. Boldyrev (Institute of Spectroscopy, Russian Academy of Sciences, Russia) Kn.boldyrev@gmail.com	Infrared Spectra of the $\text{CH}_3\text{NH}_3\text{PbI}_3$ and $\text{CH}_3\text{NH}_3\text{PbBr}_3$ Hybrid Perovskites: Signatures of Phase Transitions and of Organic Cation Dynamics

Date	March 28 (Meeting Room 1)	
	Keynote Speech Chairperson: Pankaj Koinkar	
15:00~15:25 (UTC+9)	N.A. Noda (Kyushu Institute of Technology, Japan) noda.naoaki844@mail.kyutech.jp	Adhesive Strength Evaluation of Scarf Joint by using Intensity of Singular Stress Field (ISSF)
15:25~15:50 (UTC+9)	S.P. More (Pune University, India)	Dimensional Materials: Field Emission Characteristics
15:50~16:00 (UTC+9)	Break	
	General Presentation Session A-3 Chairperson: Yu.E. Drobotov	
16:00~16:15 (UTC+9) Invited Speech	Yu. E. Drobotov (Southern Federal University, Russia) yu.e.drobotov@yandex.ru	The Variable Order Riesz Potential on Quasimetric Sphere in the Variable Exponent Höder Space
16:15~16:25 (UTC+9)	Dong-Hun Yang (Korea Maritime and Ocean	A Study on Lightweight Design of Ultra High-Pressure Composite Pressure Vessel for Hydrogen

	University, Korea) dhyang1@hanwha.com	Gas
16:25~16:35 (UTC+9)	Wu Kejun (Tokushima University, Japan) c501738003@tokushima-u.ac.jp	Preparation of TiO ₂ -WS ₂ -Au Composite Using Hydrothermal Synthesis for Photocatalytic Activity under Visible Light
16:35~16:45 (UTC+9)	Min Yen Yeh (National Kaohsiung University of Applied Sciences, Taiwan) minyen@nkust.edu.tw	Preparation of Zinc Silicate Doped with Manganese Phosphor by Hydrothermal Method
16:45~16:55 (UTC+9)	Rei Takaki (Kyushu Institute of Technology, Japan) takaki.rei244@mail.kyutech.jp	Fractographic Identification of Fracture Origin in Scarf Joint in Comparison to Butt Joint
16:55~17:05 (UTC+9)	Min-Gyu Jeon (Korea Maritime and Ocean University, Korea) Jeon85@kmou.ac.kr	Temperature Measurement of Turbulent Flame using CT-TDLAS (Computed Tomography-Tunable Diode Laser Absorption Spectroscopy)
17:05~17:15 (UTC+9)	Kei-Ichiro Murai (Tokushima University, Japan) keimruai@tokushima-u.ac.jp	Fabrication and Evaluation of Ca-Doped SrTiO ₃ Thermoelectric Materials by Molten Salt Method
17:15~17:25 (UTC+9)	Break	
	Closing Ceremony Closing address: N.A. Noda, Organizer of PHENMA2020	
17:25~17:40 (UTC+9)	<ol style="list-style-type: none"> 1. Summary of PHENMA 2020 2. Closing Remarks 	

Date	March 28 (Meeting Room 2)	
	General Presentation Session B-3 Chairperson: Antonio Norio Nakagaito	
16:00~16:15 (UTC+9) Invited Speech	Antonio Norio Nakagaito (Tokushima University, Japan) nakagaito@tokushima-u.ac.jp	Fabrication of Strong Macromolecules from Plant Fiber Bundles
16:15~16:25 (UTC+9)	R. Kawano (Kyushu Institute of Technology, Japan) kawano.ryo621@mail.kyutech.jp	Effect of Pitch Difference and Root Radius on Anti-Loosening Performance of Bolt Nut Connections
16:25~16:35 (UTC+9)	J.S. Kim (Korea Maritime Equipment Research Institute, Korea) jskim@komeri.re.kr	Comparison of Weldability of Laser and Laser-Arc Hybrid Welding for Ship Manufacturing Using Environmentally Friendly Aluminum Alloys
16:35~16:45 (UTC+9)	Adeel Ahmad Jamil (National Kaohsiung University of Science and Technology, Taiwan) ctlin@nkust.edu.tw	A Bag of Expressions-Based Method for the Recognition of Vehicle Make and Model
16:45~16:55 (UTC+9)	Sumit Patil (Kavayitri Bahinabai Chaudhari North Maharashtra University, India) ammahajan@nmu.ac.in	Investigation of Electrical Properties of Pealdd Deposited Ti/Al ₂ O ₃ /Al/Si MIM Capacitors
16:55~17:05 (UTC+9)	Chih Chin Yang (National Kaohsiung University of	Capacitance Type p-InN/n-Si Heterostructure Sensing Devices on Silicon Unpolished Substrate

	Science and Technology, Taiwan) C107187156@nkust.edu.tw	
--	------------------------------------------------------------	--

Date	March 28 (Meeting Room 3)	
	General Presentation Session C-3 Chairperson: Jin-Cheol Ha	
16:00~16:15 (UTC+9) Invited Speech	Jin-Cheol Ha (Dali University, China) chnhjc@naver.com	Corrosion Mechanism and Degradation Behaviour of Basalt Fiber Reinforced Composites in Sulfuric Acid Solution
16:15~16:25 (UTC+9)	Ryoichi Saito (Kyushu Institute of Technology, Japan) Ryoichi.Saito@senqcia.com	Fatigue Strength Improvement of Roller Chain by Press Pitting Between Pin and Plate
16:25~16:35 (UTC+9)	I.V. Bogachev (Southern Federal University, Russia) bogachev89@yandex.ru	Modeling of Biological Tissues Taking into Account the Residual Stress
16:35~16:45 (UTC+9)	Chin Ko Yeh (National Kaohsiung University of Science and Technology, Taiwan) ctlin@nkust.edu.tw	Using Activated Quantum Reagent to Transform the Quality of Poultry and Animal Manure and its Recycling
16:45~16:55 (UTC+9)	Swati Gupta (Kavayitri Bahinabai Chaudhari North Maharashtra University, India) ammahajan@nmu.ac.in	Sol-Gel Deposited Xerogel, Aerogel and Porogen based Porous Low-K Thin Films: A Comparative Investigation
16:55~17:05 (UTC+9)	M.R. Aridi (Kyushu Institute of Technology, Japan) radz7cr@gmail.com	Effect of the Residual Stress to the Fatigue Failure of the Bimetallic Roll in 4-High Rolling Mill
17:05~17:15 (UTC+9)	Siddhant Dhongade (Tokushima University, Japan) c501848001@tokushima-u.ac.jp	Liquid Exfoliation of Graphene Oxide Nanoribbons using Chemical Assisted Laser Ablation

Date	March 28 (Meeting Room 4)	
	General Presentation Session D-3 Chairperson: K.N. Boldyrev	
16:00~16:15 (UTC+9) Invited Speech	K.N. Boldyrev (Institute of Spectroscopy, Russian Academy of Sciences, Russia) Kn.boldyrev@gmail.com	Photochromic Effects in P- and B-doped Diamond
16:15~16:25 (UTC+9)	V.Yu. Topolov (Southern Federal University, Russia) vutopolov@sfnu.ru	Piezoelectric Sensitivity of Modern Lead-Free 1-3-Type Composites Based on Domain-Engineered Single Crystals: Longitudinal and Hydrostatic Responses
16:25~16:35 (UTC+9)	Kyo-Moon Lee (Korea Maritime and Ocean University, Korea) world1994@nate.com	Quantifying of the Internal Defects Content in CF-PEKK through Water Absorption Behavior
16:35~16:45	Te-Jen Su	Particle Swarm Optimization Implementation on the

(UTC+9)	(National Kaohsiung University of Sciences and Technology, Taiwan) sutj@kuas.edu.tw	Fault Diagnosis of Gearbox
16:45~16:55 (UTC+9)	Hisanori Tottori (Kyushu Institute of Technology, Japan) tottori.hisanori731@mail.kyutech.jp	Development of Multi-Layered Sewer Pipe Pulver Tensile Strength of Protective Sheet
16:55~17:05 (UTC+9)	Masatsugu Oishi (Tokushima University, Japan) ooishi.masatsugu@tokushima-u.ac.jp	Local Electronic and Atomic Structures of the Mixed B-Site Ions in SrFe _{1-x} Mn _x O _{3-δ} Studied with X-ray Absorption Spectroscopy

Date	March 29 (Online-Offline Schedule)
15:00~18:00 (UTC+9)	Technical Tour through Online