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5th International Conference on Material Strength and Applied Mechanics

MSAM 2022

Qingdao, China | Online via Microsoft Teams

August 19-22, 2022

CONFERENCE PROGRAM

China Standard Time (GMT+8)



澳門會展旅遊業協會
ASSOCIAÇÃO DOS SETORES DE CONVENCÕES, EXPOSIÇÕES E TURISMO DE MACAU
MACAO ASSOCIATION OF CONVENTION, EXHIBITION & TOURISM SECTORS

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*The Program is used for MSAM2022 Academic Exchange Only

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Part I Conference Schedule Summary

August 19, 2022 Friday | China Standard Time (GMT+8)

On-site Registration: Qingdao Blue Horizon Jun Hua Hotel (Golden Beach)

蓝海钧华大饭店(青岛金沙滩店)

Online MS Teams Link: <http://www.academicconf.com/teamslink?confname=msam2022>

08:30-18:00 On-site Registration

09:00-11:00

MS Teams Online Conference Testing and Ice Breaking

14:00-16:00

August 20, 2022 Saturday | China Standard Time (GMT+8)

On-site Conference Room: Hotel Conference Hall

Online MS Teams Link: <http://www.academicconf.com/teamslink?confname=msam2022>

09:00-09:30 **Opening & Welcome Speech (on-site)**

Group Photo

09:30-10:10 **Keynote Speech 1: Today's Intelligent Machines and Manufacturing - What is Next? (on-site)**

Prof. Dr. O. S. Ganiyusufoglu, Academician of the German National Academy of Science and Engineering, Industrial Development Consultant, Qingdao International Academician Park (QIAP), China

10:10-10:50 **Keynote Speech 2: Design and Mechanical Behaviors of Carbon Fiber Composite Honeycomb Sandwich Structure (on-site)**

Prof. Jian Xiong, Center for Composite Materials and Structures, School of Astronautics, Harbin Institute of Technology, China

10:50-11:10

Coffee Break

11:10-11:50 **Keynote Speech 3: (To be updated)**

11:50-12:20 **Poster Session**

12:20-13:30

Lunch Break

14:00-14:40 **Keynote Speech 4: Revisiting Some Basic Concepts & Methods in Advanced Materials (online)**

Prof. Elias C. Aifantis, Emeritus Professor of Mechanics at Aristotle University of Thessaloniki, Greece

14:40-15:20 **Keynote Speech 5: Mechanics and Thermodynamics of Strain-Induced Crystallization (online)**

Prof. Mikhail Itskov, Department of Continuum Mechanics, RWTH Aachen University, Germany

15:20-15:40

Coffee Break

15:40-17:55

**Oral Session 1: Computational Methods, Modeling, and Numerical Simulation
(on-site & online)**

August 21, 2022 Sunday | China Standard Time (GMT+8)

On-site Conference Room: Hotel Conference Hall

Online MS Teams Link: <http://www.academicconf.com/teamslink?confname=msam2022>

08:30-12:25

Oral Session 2: Applied Mechanics (on-site & online)

12:25-14:00

Lunch Break

14:30-18:05

Oral Session 3: Experimental Methods and Application (on-site & online)

14:30-18:20

Oral Session 4: Material Properties and Miscellaneous Problems (online)

August 22, 2022 Monday | China Standard Time (GMT+8)

08:30-17:00

Field Visit (on-site)

Note: The field visit may be adjusted according to the local epidemic prevention policies.

Part II Keynote Speeches

Keynote Speech 1: Today's Intelligent Machines and Manufacturing - What is Next?



Prof. Dr. O. S. Ganiyusufoglu

Academician of the German National Academy of Science and Engineering, Industrial Development Consultant, Qingdao International Academician Park (QIAP), China

Biography: Prof. Ganiyusufoglu is the academician of German National Academy of Science and Engineering (acatech), the Industrial Development Consultant of Qingdao International Academician Park, the advisory professor of Tongji University/ School of Mechanical Engineering (College of Mechanical Engineering Tongji University), Honorary Professor of Nanjing University of Aeronautics and Astronautics and the guest professor of CUEB – Capital University for Economy and Business.

In 2019, he was invited to join the celebrations for 70th Anniversary of Republic of China incl. Parade at Tian'anmen Square. In 2018, he got Friendship Award of Chinese Government received from Mr. Liu He – Vice Prime Minister China. In 2017, he received “Golden Pin” of VDI (German Engineers' Association) for 40 years membership. In 2014, he received Friendship Award of Liaoning Province of China (Highest Award of the province for a foreigner). In 2012, he got Rose Prize of the City of Shenyang/China. In 2008, he got Award of the City of Dalian/China.

He has served successively as the department manager for systems technology of Traub AG (Germany), the General Manager for Technics at Yamazaki Mazak GmbH (Japanese family-owned machine tool manufacturer), the Managing Director of Yamazaki Mazak GmbH, and the General Manager of Index Dalian Machine Tool Ltd (Joint venture between Index-Werke Esslingen and Dalian Machine Tool Group, Resident in Dalian).

From 2017 to 2019, he was elected as Chairman of Corporate Members Advisory Group CMAG within CIRP – International Academy for Production Engineering. Since 1977 till now, he is the member of VDI - German Engineers' Association. From 2011 to 2020, Prof. Ganiyusufoglu was the Consultant to Chairman of Shenyang Machine Tool Group Co., Ltd (Resident in Shenyang).

Since 2021, he takes up the position of the Industrial Development Consultant of Qingdao International Academician Park (QIAP), which build an eco-system that not only delivers full service and support for those academicians and enterprises with unique and innovative ideas, inventions from the research work over production, marketing till commercialization and business success, also produce a huge potential for synergies by the divers disciplines in the Park and offer Big Data for future Artificial Intelligence developments.

Prof. Ganiyusufoglu contributes to industrial development of QIAP by establishing fruitful relations to renowned international Science and Engineer Technology research institutes and innovative companies, especially from Germany. Meanwhile, he devoted himself to forward his extensive global

experience to young generation in Chinese industries and universities.

Abstract. In research and development as well as in industry the innovation cycles are getting shorter and shorter. Digitalization is accelerating this trend and changing our daily life. It also promotes the development of new products, new manufacturing methods and new business models.

Digitalization delivers also huge volume of data. Data is the source for powerful artificial intelligence AI. Utilizing artificial intelligence machines and processes will become intelligent. The entire efficiency and transparency in industry will increase. Digitalization and big data will enable academicians and industry to become more innovative and to create new ideas for machines and manufacturing.

The speaker will explain the development of technology in the history and the state of the art of current machines and manufacturing methods.

Based on his long international experience in industry and in academy, the speaker will present his ideas for future machine concepts and for manufacturing systems. He will also compare the technological power of western countries and China's. He will present his proposals how China and Germany could cooperate in future successfully.

A vision for a future manufacturing system which is intelligent, resilient and reconfigurable will conclude the speech.

Keynote Speech 2: Design and Mechanical Behaviors of Carbon Fiber Composite Honeycomb Sandwich Structure

Prof. Jian Xiong

*Center for Composite Materials and Structures,
School of Astronautics, Harbin Institute of Technology, China*



Biography: Prof. Jian Xiong obtained his Ph.D. degree from the Center for Composite Materials and Structures, School of Astronautics, Harbin Institute of Technology in 2012. He is currently a full professor and doctoral supervisor in the Center for Composite Materials and Structures, School of Astronautics, Harbin Institute of Technology. He has been a visiting scholar at Rice University School of Engineering, USA, Department of Textiles and Weaving, Hong Kong Polytechnic University, Department of Mechanical and Industrial Engineering, Siegen University, Germany, and Northeastern University, School of Engineering, USA. He is also a Humboldt Fellow at the Department of Mechanical and Industrial Engineering at Siegen University, Germany. He currently serves as a Young Editorial Board member of Journal of Nanjing University of Aeronautics and Astronautics, Journal of Harbin Engineering University, Journal of Applied Mechanics, Journal of Solid Mechanics, etc.

He has been engaged in the research of design theory and mechanical mechanism of advanced lightweight composite structures, and has published more than 90 research papers in international

academic journals, including Journal of the Mechanics and Physics of Solids, Advanced Materials, Acta Materialia, Composites Science and Technology, etc. He has granted more than 10 national invention patents and published one academic monograph. He was selected for Ministry of Education High-level Talent Program “Young Scholar”, Humboldt Research Fellow from AVH and Stanley Ho (SHATF) Teaching Award. He won the 15th Heilongjiang Province Youth Science and Technology Award, first prize and the second prize of Natural Science and Technology in Heilongjiang Province.

Abstract. The design objectives of spacecraft probe structure are to reduce the structure weight, improve the loading efficiency and ensure the profile accuracy. The satellite circularly enters the shadow area and the light area, where surface temperatures are between -180°C and 120°C . It causes serious thermal deformation of the satellite antenna reflector, thus reducing the satellite detection ability. Carbon fiber composite honeycomb structure has the advantages of light weight, high specific stiffness, high specific strength and low thermal expansion coefficient. It has important applications in advanced spacecraft components such as satellite antenna reflector, space telescope and high precision optical support platform. This presentation introduces advanced progress made by our research group in the field of carbon fiber composite honeycomb structure technology, including: (1) Manufacturing technology of carbon fiber reinforced composite honeycomb; (2) Mechanical characteristics and evaluation of carbon fiber reinforced composite honeycomb sandwich structure under typical loadings; (3) Structural design, debonding characteristics and strengthening mechanics of interface-reinforced composite honeycomb structure; (4) Flexible design and mechanical characteristics of composite honeycomb structure.

Keynote Speech 3: To be updated

Keynote Speech 4: Revisiting Some Basic Concepts & Methods in Advanced Materials



Prof. Elias C. Aifantis

Emeritus Professor of Mechanics at Aristotle University of Thessaloniki, Greece

Biography: Elias C. Aifantis is currently an Emeritus Professor of Mechanics at Aristotle University of Thessaloniki/Greece and Michigan Technological University/USA, as well as Mercator fellow at Friedrich-Alexander University/Germany and a Distinguished Professor at Beijing University of Civil Engineering and Architecture/China. Formerly, he has also been a Distinguished Faculty Advisor at King Abdulaziz University/Saudi Arabia, Distinguished Visiting Expert at ITMO University/Russia and Southwest Jiaotong University/China, as well as MegaGrant Director at Togliatti State University /Russia.

He has promoted highly interdisciplinary work in mechanics of materials by bringing into the field of solid mechanics ideas from diffusion theory, chemical reactions, and nonlinear physics. He has coined the terms dislocation patterning, material instabilities, gradient plasticity/elasticity,

chemo/nanomechanics, and pioneered internal length gradient (ILG) theories in these fields. Currently, he is extending the ILG framework to revisit electromagnetism and Maxwell's equations, as well as gravitation and Newton's Law.

He has published over 339 articles and received about 12,778 citations with 55 h-index (Scopus); 11,963 citations with 54 h-index (Web of Science); 19,750 citations with 69 h-index (Google Scholar). He is included in the ISI Web of knowledge list of the world's most highly cited authors in engineering.

Abstract. Some basic concepts and standard methods that have been used to build recent theories on advanced materials, are revisited by incorporating in the original formulations higher-order gradients, stochasticity and fractal/fractional considerations. Some representative examples are analyzed to show the potential of these ideas to model new phenomena and interpret experimental observations not described by classical theories.

Keynote Speech 5: Mechanics and Thermodynamics of Strain-Induced Crystallization

Prof. Mikhail Itskov

Department of Continuum Mechanics, RWTH Aachen University, Germany



Biography: Prof. Itskov got his Diploma Degree in Automobile Engineering at the Moscow State Automobile and Road Technical University (TU MADI) in 1987. He got his Doctor Degree in Mechanics at this Technical University in 1990. He came to Germany as a fellow of the German Academic Exchange Service (DAAD) in 1995 and worked later as a research assistant at the Ruhr-University of Bochum and then at the University of Bayreuth. In 2002, he got there his Habilitation degree in Mechanics. Since 2004, he is a full professor of continuum mechanics at the faculty of Mechanical Engineering of the RWTH Aachen University. Prof. Itskov is the author of the book "Tensor Algebra and Tensor Analysis for Engineers" whose 5th edition appeared recently and of many publications in international peer-reviewed journals. The research interests of Prof. Itskov are mechanics of soft materials like rubbers, aerogels, hydrogels, soft biological tissues and modelling of anisotropic material under large strains.

Abstract. Strain-induced crystallization is a very interesting and important phenomenon appearing in elastomers as for example natural rubbers subjected to large stretches. In this case, polymer molecules come very close to each other and begin to form crystallites oriented mostly in the direction of stretch. These crystallites can retard or even stop crack propagation in highly loaded elastomeric structures as for instance truck tires and thus improve their durability and lifetime. So far, the strain-induced crystallization has mostly been investigated by using X-ray diffraction, which is a very expensive and hardly accessible procedure for a classical mechanical lab. Moreover, the X-ray diffraction is not able to measure calorimetric effects always accompanying the strain-induced crystallization. These effects results from the phase transition during crystallite nucleation, growth and melting. In this regard, the infrared thermography combined with mechanical measurements appears to be very suitable. Indeed, by means of such a procedure the heat production and absorption as well as the crystallization degree

during cyclic loading can be detected and characterized in natural rubbers. Based on the energy balance the intrinsic dissipation due to viscosity and stress softening can thus be evaluated under cyclic loading. Energy contributions to the hysteresis loop converted into heat and stored in the material can further be separated. In the present contribution, we also present a physically based constitutive model for filled natural rubbers coupled with infrared thermography based calorimetry to study the strain-induced crystallization. The kinetics of phase transition outside thermodynamic equilibrium is also discussed and underlying mechanisms of nonequilibrium strain-induced crystallization are interpreted. To capture multiaxiality of strain-induced crystallinity, we apply the analytical network-averaging concept proposed in our earlier papers. Predictions of the so-developed model of the strain-induced crystallization demonstrate good agreement with various experimental data.

Keywords: Strain-induced crystallization, calorimetric effects, physically based modeling, natural rubbers.

Part III Oral Presentations

On-site Oral Presentation Guidelines

Devices Provided by the Conference Organizer:

- ✚ Laptops (with MS-Office & Adobe Reader)
- ✚ Projectors & Screen: Ratio 4:3
- ✚ Laser Sticks
- ✚ Microphones

Materials Provided by the Oral Presenters:

- ✚ PowerPoint or PDF file

For presenters who don't send the PowerPoint to the Conference Secretary, please have your presentation ready in a memory stick, and save it in the laptop of your corresponding session about **15 minutes** before session starts.

Online Oral Presentation Guidelines

- ✚ Online Oral Presentation will be conducted via [Microsoft Teams](#).
- ✚ All presenters are requested to reach the Online Session Room prior to the scheduled time and deliver their presentations on time.
- ✚ The presentation timetable is shown in **China Standard Time (GMT+8)**.
- ✚ If a presenter is not able to show up via MS Teams, the session chair/conference secretary will download and play the pre-recorded video presentation during his/her scheduled presentation time; if listeners have questions about the presentation, please contact the conference secretary to forward the questions.
- ✚ If a presenter cannot show up on time or have problems with internet connection, the session chair has the right to rearrange the presentation order and let the next presenter start.
- ✚ Signed and stamped electronic presentation certificate would be issued and delivered via e-mail after presentation.

Best Oral Presentations Selection

The session chair will select one best oral presentation from his/her session based on the following criteria:

- ✓ Research Quality
- ✓ Presentation Performance
- ✓ Presentation Language
- ✓ PowerPoint Design

Best Oral Presentations Award

Best Presenters will receive an official certificate and free registration to the MSAM 2023.

Oral Session 1: Computational Methods, Modeling, and Numerical Simulation

Time: 15:40-17:55, August 20, 2022. China Standard Time (GMT+8)

On-site Conference Room: Hotel Conference Hall

Session Room Link: <http://www.academicconf.com/teamslink?confname=msam2022>

15:40-15:55	MS1757	Effects of Local Fiber Discontinuity on the Fatigue Strength Parameter at the Fiber Inclusion Corner in Fiber Reinforced Composites <i>Ms. Cong-Man Wang, School of Mechanical Engineering, Tianjin University of Science and Technology, China</i>
15:55-16:10	MS1726	Temperature-dependent Tensile Damage and Fracture in Fiber-Reinforced Ceramic-Matrix Composites <i>Dr. Longbiao Li, College of Civil Aviation, Nanjing University of Aeronautics and Astronautics, China</i>
16:10-16:25	MS1840	Nonlinear Dynamic Characteristics of the Rotor System with Bolted Joints Considering Tension and Compression Stiffness <i>Dr. Xuefei Zhang, Department of Engineering Mechanics, Dalian University of Technology, China</i>
16:25-16:40	MS1811	Shear and Internal Friction Characteristics of Cupronickel B10 Obtained using a Dynamic Shear Equipment <i>Ms. Fang Liu, School of Technology, Beijing Forestry University, China</i>
16:40-16:55	MS1785	Numerical Analysis for the delamination Energy Release Rate of Thermal Barrier Coating under Thermal Gradient <i>PhD. Lixia Li, School of Aerospace, Xi'an Jiaotong University, China</i>
16:55-17:10	MS1720	Computational Design and Characterisation of Novel 3D-printed Carbon Fibre Composite Structures with Programmable Poisson's Ratios <i>Dr. Yuan Chen, School of Aerospace, Mechanical and Mechatronic Engineering, The University of Sydney, Australia</i>
17:10-17:25	MS1841	Vibroacoustic Modeling of Timber Floor Panels using Finite Element Methods <i>Dr. Magdalini Titirla, Structural Mechanics and Coupled Systems Laboratory (LMSSC), Conservatoire National des Arts et Métiers (CNAM), France</i>
17:25-17:40	MS1718	Investigation into the Corrosion Evolution of Steel Using Time-Frequency Analysis <i>Dr. Lahcen Mountassir, Department of Physics, Polydisciplinary Faculty of Safi, Cadi Ayyad University, Morocco</i>
17:40-17:55	MS1740	Nonlinear Stress Analysis of Rubber-Like Thick-Walled Cylinder: Comparison of Different Constitutive Models <i>Dr. Abdelhakim Benslimane, Département Génie Mécanique, Université de Bejaia, Algeria</i>

Oral Session 2: Applied Mechanics

Time: 08:30-12:25, August 21, 2022. China Standard Time (GMT+8)

On-site Conference Room: Hotel Conference Hall

Online Session Room Link: <http://www.academicconf.com/teamslink?confname=msam2022>

08:30-08:55	MS1850	Developing Advanced Shape Memory Alloys via Concentration Gradient Engineering <i>Dr. Jiaming Zhu, Department of Engineering Mechanics, Shandong University, China</i>
08:55-09:10	MS1839	Nonlinear Dynamics and Vibration Localization of Shrouded Bisk with Contact and Friction Effects <i>Dr. Gaofei Yuan, Dalian University of Technology, China</i>
09:10-09:25	MS1843	Influence of Loading Pressure Distribution on Contact Thermal Resistance Based on Numerical Analysis Model <i>Mr. Chen Wang, Key Laboratory of Education Ministry for Modern Design and Rotor-Bearing System, Xi'an Jiaotong University, China</i>
09:25-09:40	MS1822	Diameter-Thickness Ratio influence to Large Civil Aircraft Fuse Pins' Strength <i>Mr. Muqi Yu, College of Aerospace Engineering Nanjing University of Aeronautics and Astronautics, China</i>
09:40-10:05	MS1716	Solid-Liquid-Gas Three Phases Continuum Theory on Multiple Microbubbles Coated by a Visco-Elastic Shell: from Microscopic to Macroscopic Scales <i>Dr. Tetsuya Kanagawa, Department of Engineering Mechanics and Energy, University of Tsukuba, Japan</i>
10:05-10:20	MS1759	Development of a Reducer Geared Mechanism: Performance Analysis on a Full-actuated Adaptive Finger Application <i>Dr. E A Villegas-Jiménez, Facultad de Estudios Superiores Aragón, Universidad Nacional Autónoma de México, Mexico</i>
10:20-10:40	Coffee Break	
10:40-10:55	MS1756	Study on Progressive Collapse of Single-Layer Arch Shell Structure based on VUMAT Stability Constitutive Model <i>Mr. Xingdong Yang, Department of Civil Engineering, China Agricultural University, China</i>
10:55-11:10	MS1744	Sun-driven Evaporation Enhanced Forward Osmosis Process for Application in Wastewater Treatment and Pure Water Regeneration <i>Dr. Hamdy Maamoun Abdel-Ghafar, Central Metallurgical Research and Development Institute, Egypt</i>
11:10-11:25	MS1747	Friction Stir Processing of Dissimilar Aluminium Alloy Welded Joints <i>Dr. Sipokazi Mbuwa, Mechanical Engineering Department, Cape Peninsula University of Technology, South Africa</i>
11:25-11:40	MS1804	Effect of (3-Aminopropyl)triethoxysilane on the Optical Properties of ZnO: A Fluorescent Fingerprint Labelling Agent <i>Dr. Ncediwe Tsolekile, Chemistry Department, Cape Peninsula University of Technology, South Africa</i>

11:40-11:55	MS1772	Friction Stir Welding (FSW): New Industry Trend <i>Dr. Abdessamad Brahami, University of Zaragoza, Mechanical Engineering Department, Spain</i>
11:55-12:10	MS1805	Unsteady Mixed Convection of a Radiating and Reacting Nanofluid with Variable Properties in a Porous Medium Microchannel <i>Dr. Ebba Hindebu Rikitu, Department of Applied Mathematics, Adama Science and Technology University, Ethiopia</i>
12:10-12:25	MS1818	Multi-Input Multi-Output Model of Motorbike for Vibrations Induced by Surface Irregularities in Road Pavements <i>Dr. Massimo Cavacece, Department of Civil and Mechanical Engineering, University of Cassino and Southern Lazio, Italy</i>

Oral Session 3: Experimental Methods and Application

Time: 14:30-18:05, August 21, 2022. China Standard Time (GMT+8)

On-site Conference Room: Hotel Conference Hall

Session Room Link: <http://www.academicconf.com/teamslink?confname=msam2022>

14:30-14:45	MS1765	Fracture of Hydrogel Adhesion under Large-Scale Bridging <i>Dr. Canhui Yang, Department of Mechanics and Aerospace Engineering, Southern University of Science and Technology, China</i>
14:45-15:00	MS1823	Test Verification of Emergency Separation Fuse Pins for Aircraft Engines <i>Mr. Chi Chen, College of Aerospace Engineering Nanjing University of Aeronautics and Astronautics Nanjing 210016, China</i>
15:00-15:15	MS1810	The Effects of I-Beam Thickness to Microstructure and Compression Load of Thin Wall Ductile Iron Connecting Rod <i>Mr. Muhammad Fadhlán, Mechanical Engineering Department, Universitas Trisakti, Indonesia</i>
15:15-15:40	MS1842	Engineering Mechanics for Automotive Industry Basing on Components to Special Vehicles <i>Dr. Tadeusz Szymczak, Department of Vehicle Type-Approval & Testing, Motor Transport Institute, Poland</i>
15:40-16:05	MS1723	Mechanical Behavior of Fibrous Materials <i>Dr. Miklos Zrinyi, Department of Biophysics and Radiation Biology, Semmelweis University, Hungary</i>
16:05-16:20	MS1760	Study of Parameters Influencing the Compressive Strength of Compressed Earth Blocks <i>Dr. Lavie Arsène Mango-Itulamyá, Département de Géologie, University of Liège, Belgium</i>

16:20-16:40

Coffee Break

16:40-16:55	MS1835	On the Efficiency of Non-destructive Testing Methods Applied to Aircraft Components <i>Dr. Boutheina Ben Fraj, Research and Technology Center of Energy, Technoparc Borj Cedria, Tunisia</i>
16:55-17:20	MS1749	Multifactorial and Multiphases Models for Chloride Ingress in RC Structures under Unsaturated Conditions <i>Dr. Enrico Zacchei, Itecons – Institute for Research and Technological Development in Construction, Energy, Environment and Sustainability, Portugal</i>
17:20-17:35	MS1821	Preparation of Cathode Material for SOFC (Low Temperature) by Recycled Lead (Pb) <i>Dr. Majid Muneer, Department of Chemistry, Government College University Faisalabad, Pakistan</i>
17:35-17:50	MS1833	Effect of Cold Rolling on Microstructure evolution, Texture Development and Magnetic Properties of Low Molybdenum UNS S32101 Lean Duplex Stainless Steel <i>Dr. Tushar R. Dandekar, Department of Metallurgical Engineering and Materials Science, Indian Institute of Technology Bombay, India</i>
17:50-18:05	MS1802	A Comparative Analysis between the Transverse and Longitudinal Samples of the FSW AA5083/AA6082 Joints <i>Ms. Molebogeng Oarabile Mmanyane Segaletsho, Mechanical Engineering Department, Cape Peninsula University of Technology, South Africa</i>

Oral Session 4: Material Properties and Miscellaneous Problems

Time: 14:30-18:20, August 21, 2022. China Standard Time (GMT+8)

Session Room Link: <http://www.academicconf.com/teamslink?confname=msam2022&sessionid=4>

14:30-14:55	MS1845	Phenomenological Modelling of the Structural Relaxation and WLF Behaviour of Shift Factors in the Physical Ageing Study for Commodity Plastics <i>Dr. Yutaka Tanaka, Department of Materials Science and Biotechnologies, University of Fukui, Japan</i>
14:55-15:10	MS1715	Characteristics of Electric Double-Layer Capacitors Based on Solid Polymer Electrolyte Composed of Sodium Polyacrylate <i>PhD Ryu Tomi, Department of Electrical Engineering, Fukuoka Institute of Technology, Japan</i>
15:10-15:35	MS1852	Programmable Shape-morphing Rose-shaped Mechanical Metamaterials <i>Dr. Anastasiia Krushynska, Engineering and Technology Institute Groningen (ENTEG), University of Groningen, The Netherlands</i>
15:35-15:50	MS1847	Manufacturing and Forging Issues Encountered while Upscaling Low-Density Steels <i>Dr. Idurre Kaltzakorta, TECNALIA, Basque Research and Technology Alliance (BRTA), Parque Científico y Tecnológico De Bizkaia, Spain</i>

15:50-16:05	MS1775	Silver Nanoparticles Supported Over Mesoporous Alumina as an Efficient Nanocatalyst for N-alkylation of Hetero (aromatic) Amines and Aromatic Amines using Alcohols as Alkylating Agent <i>Ms. Priyanka Paul, Department of Chemistry, Aliah University, India</i>
16:05-16:20	MS1844	Effect of Cooling Modes on Mechanical Property of Sn–0.7Cu Solder Alloy <i>Dr. Satyanarayan, Department of Mechanical Engineering, Alva's Institute of Engineering and Technology, India</i>
16:20-16:40	Coffee Break	
16:40-16:55	MS1830	Analysis the Workability of NPP Reinforce Concrete Containment in Accidental Mode Under the Development in Concrete the Degradative Processes <i>Dr. Krytskyi Volodymyr, Kyiv Scientific-Research and Design Institute, Ukraine</i>
16:55-17:20	MS1708	CVD Diamond – Synthesis, Properties and Applications <i>Dr. Awadesh Kumar Mallik, Solvay Business School, Vrije Universiteit Brussel, Belgium</i>
17:20-17:35	MS1831	Microstructural Evolution and Grain Refinement in Gas Tungsten Constricted Arc (GTCA) Welding of Inconel 718 Alloy <i>Dr. Tushar Sonar, Department of Mechanical Engineering, G. S. Mandal's Maharashtra Institute of Technology Aurangabad, India</i>
17:35-17:50	MS1838	Preparation and Electrical Conductivity of Potassium Phosphate Glasses Containing Al₂O₃ at Hight and Room Temperature <i>Dr. Souissi Fatma Zahra, Laboratoire de chimicophysique de l'Etat Solide (LES), Université du Sfax, Tunisia</i>
17:50-18:05	MS1849	Factorial Review on the Behavior of Composite Materials when Particles Addition <i>Dr. Rekbi Fares Mohammed Laid, Research Center in Industrial Technologies CRTI, Algeria</i>
18:05-18:20	MS1797	Review on Metal Matrix Composite Developed with Marine Grades <i>Dr. Oritonda Muribwathoho, Mechanical Engineering Department, Cape Peninsula University of Technology, South Africa</i>

Part IV Poster Session

On-site Poster Presentation Guidelines

Materials Provided by the Conference Organizer:

- ✚ X Racks & Base Fabric Canvases
- ✚ Adhesive Tapes or Clamps

Materials Provided by the Presenters:

- ✚ Home-Made Posters
- ✚ Posters Printed by Conference

Requirement for the Posters:

- ✚ Material: not limited
Size: 160cm (height) ×60cm (width)



X-Rack

Online Poster Presentation Guidelines

- ✚ A collection of posters in PDF format (with/without audio) will be available at conference website for attendees to view starting on August 5, 2022.
- ✚ Signed and stamped electronic presentation certificate would be issued via e-mail after conference.

List of Posters

Time: 11:50-12:20, August 20, 2022. China Standard Time (GMT+8)

On-site Conference Room: Hotel Conference Hall

Conference Room Link: <http://www.academicconf.com/teamslink?confname=msam2022>

**Should you have any questions on the posters, please feel free to write down in the notebbox of each poster at MSAM2022 official website. The presenter will answer your questions as soon as possible.*

MS1678	Recognition of Pick Wear Condition Based on Grey-Markov <i>Ms. Jiayao Zhang, School of Mechanical Engineering, Liaoning Technical University, China</i>
MS1710	Progressive Collapse Analysis of Super-Long Span Latticed Steel Arch Structure <i>Dr. Shuangchao Guo, Beijing Construction Engineering Group Co., Ltd, Beijing, China</i>
MS1711	The Whole Loading Process Parametric Analysis of Translation-Torsion Coupled Vibration Characteristics of the Multi-Layer Bi-Directional Eccentric Frame Structure <i>Dr. Yuping Kuang, School of Civil Engineering and Communication, North China University of Water Resources and Electric Power, China</i>
MS1717	Numerical Study on Tooth Angle Optimization of Enhanced Structure for Subsea Pipeline Repair Clamp <i>Dr. Shuli Zhang, CNOOC Safety Technology Services Co., Ltd, China</i>
MS1728	Analysis of Nonlinear Tuned Mass Damper by Using the Multi-Scale Method <i>Dr. Ji Yao, Faculty of Civil Engineering and Mechanics, Kunming University of Science and Technology, China</i>
MS1729	Structural Optimization Design of Automobile Engine Intake Pipe <i>Dr. Jianxin Xie, College of Intelligent Manufacturing, Qingdao Huanghai University, China</i>
MS1734	Design and Validation of a Single-Jack Variable-Mach Number Nozzle in a Cryogenic Transonic Wind Tunnel <i>PhD Chengguo Yu, Xi'an Research Institute of High Technology, China</i>
MS1735	Microstructure and Mechanical Properties of Wc-Ti(C_{0.5}, N_{0.5})-Co-Mo Cemented Carbides <i>Dr. Guangzhou Sui, Electromechanical Engineering Institution, Lingnan Normal University, China</i>
MS1741	Thermal Postbuckling of S-FGM Circular Plates <i>Dr. Liansheng Ma, School of Architecture and Engineering, Weifang University of Science and Technology, China</i>
MS1743	Optimization of Sealing Parameters of Double-Sealing Pipeline Repair Clamp <i>Dr. Bingjie Zhao, School of Mechanical Engineering, Tianjin University of Technology, China</i>
MS1751	Establishment of Constitutive Model and Dynamic Parameter Analysis of Rubber Conveyor Belt <i>Dr. Hongyue Chen, School of Mechanical Engineering, Liaoning Technical University, China</i>

MS1752	Numerical Analysis on Dynamic Behaviour of Novel Grooved Cylindrical Casing with Different Explosive Loads <i>Ms. Qian Gao, State Key Laboratory of Explosion Science and Technology, Beijing Institute of Technology, China</i>
MS1754	Studies on the Performance of Impact Resistant Structure of Hydraulic Support in Fully Mechanized Mining Face under Rock Burst <i>Mr. Runxin Zhang, Shandong University of Science and Technology, China</i>
MS1761	Influence of Grooving Parameters and Micro-Groove Cross-Section Shape on the Lubrication Performance of Partially Micro-Grooved Gas-Lubricated Parallel Slider Bearings <i>Dr. Fuxi Liu, School of Mechanical and Electrical Engineering, Hunan Applied Technology University, China</i>
MS1764	CFD-Predicted on Rotordynamic Characteristics for High Temperature Sodium Liquid Seal <i>Dr. Pingwei Chen, School of Mechanical and Powder Engineering, Harbin University of Science and Technology, China</i>
MS1767	Study on Characteristics of Three-Dimensional Granular Meso-Reconstruction of Coal Gangue Roadbed <i>Mr. Bing Hui, Shandong Transportation Research Institute, China</i>
MS1774	Analysis on Dynamic Characteristics of Experimental Bench of High-Pressure Water Fracturing Assisted Cutting <i>Dr. Zhiming Liu, School of Mechanical Electronic and Information Engineering, China University of Mining and Technology-Beijing, China</i>
MS1780	Factors Influencing Anti-explosion Performance of Steel Structure Protective Door under Chemical Explosion Conditions <i>Dr. Zhizhong Li, State Key Laboratory for Disaster Prevention & Mitigation of Explosion & Impact, Army Engineering University of PLA, China</i>
MS1788	Correlation Between Microstructure and Bending of FSW and TIG Welded Mg-Rich Aluminium Alloy Joints <i>Dr. Velaphi Msomi, Mechanical and Mechatronic Engineering Department, Cape Peninsula University of Technology, South Africa</i>
MS1799	Deep Learning Based Thermal Stress and Deformation Analysis of Satellites <i>Ms. Zeyu Cao, Defense Innovation Institute, Chinese Academy of Military Science, China</i>
MS1800	Compressive Properties and Energy Absorption of Rigid Polyurethane Foam <i>Mr. Zexiong Zhang, College of Engineering Science, University of Science and Technology of China, China</i>
MS1806	Bonding Condition's Influence on Mechanical Performance of Synthetic Sports Surfaces by FEM <i>Dr. Hong Wang, College of Sports Engineering and Information Technology, Wuhan Sports University, China</i>
MS1816	Experimental Study on Mechanical Properties and Porosity and Permeability of Rock in High Temperature Environment <i>Mr. Bingchang Hou, College of Pipeline and Civil Engineering, China University of Petroleum (East China), China</i>

MS1817	Nonlocal Finite Element Simulation Method for Fluid-Induced Rock Damage Propagation <i>Mr. Xudong Zhang, College of Pipeline and Civil Engineering, China University of Petroleum (East China), China</i>
MS1825	Effect of Mounting Angle Adjustment on the Internal Flow Characteristics of the Cyclone Front Stage Operation <i>Mr. Zhenjiang Zhang, Shandong University of Science and Technology, China</i>
MS1834	Analysis of Abnormal Vibrations of Crude Oil Efflux Pumps Using ANSYS <i>Dr. Tianqi Wang, Mechanical Engineering College, Xi'an Shiyou University, China</i>

Part V Conference Venue

Venue: Qingdao Blue Horizon Jun Hua Hotel (Golden Beach) 蓝海钧华大饭店(青岛金沙滩店)

Address: No.598, Jinshatan Road, Huangdao District, Qingdao 266400 China

山东省青岛市黄岛区金沙滩路 598 号

Telephone: 0532-86862999

Access to Qingdao Blue Horizon Jun Hua Hotel (Golden Beach)

1. Qingdao Jiaodong International Airport (青岛胶东国际机场) to Qingdao Blue Horizon Jun Hua Hotel (about 65km)

(1) Metro (about 1hour 50minutes)

Starting from the airport, take Metro Line 8 (towards Qingdao North Station)

Getting off at the 9th stop: Qingdao North Station (青岛北站)

Taking Metro Line 1 (towards Wangjiagang 往王家港方向)

Getting off at the 16th stop: Nanbeitun (南北屯站)

Out of the metro from Exit B, walking for 1.2km to Qingdao Blue Horizon Jun Hua Hotel (Golden Beach).

(2) Metro + Bus (about 1hour 50minutes)

Starting from the airport, take Metro Line 8 (towards Qingdao North Station)

Getting off at the 9th stop: Qingdao North Station (青岛北站)

Taking Metro Line 1 (towards Wangjiagang 往王家港方向)

Getting off at the 15th stop: Shanli (山里站)

Out of the Metro from Exit C, walking around 200 meters to the bus stop: Shanli (山里地铁站)

Taking the bus Huangdao No.4 bus (黄岛 4 路)

Getting off at the 6th stop: Nantun (南屯站)

Walking 210 meters to Qingdao Blue Horizon Jun Hua Hotel (Golden Beach).

(3) Airport Bus + Bus (about 2hours and 20minutes)

Starting from the airport, take Airbus L5 (机场 5 线)

Getting off at the 4th stop: Jinhaian Liqun (金海岸利群站)

Walking around 310 meters, arriving at the bus stop: Fuying Tianluhu (福瀛天麓湖站)

Taking the bus Huangdao No.4 bus (黄岛 4 路)

Getting off at the 12th stop: Nantun (南屯站)

Walking 140 meters to Qingdao Blue Horizon Jun Hua Hotel (Golden Beach).

2. Qingdao Station (青岛站) to Qingdao Blue Horizon Jun Hua Hotel (about 13.6km)

(1) Metro (about 35 minutes)

Taking Metro Line 1 (towards Wangjiagang 往王家港方向)

Getting off at the 4th stop: Nanbeitun (南北屯站)

Out of the metro from Exit B, walking for 1.2km to Qingdao Blue Horizon Jun Hua Hotel (Golden Beach).

(2) Metro + Bus (about 45 minutes)

Taking Metro Line 1 (towards Wangjiagang 往王家港方向)

Getting off at the 3rd stop: Shanli (山里站)

Out of the Metro from Exit C, walking around 200 meters to the bus stop: Shanli (山里地铁站)

Taking the bus Huangdao No.4 bus (黄岛 4 路)

Getting off at the 6th stop: Nantun (南屯站)

Walking 210 meters to Qingdao Blue Horizon Jun Hua Hotel (Golden Beach).

3. Qingdao North Station (青岛北站) to Qingdao Blue Horizon Jun Hua Hotel (about 30 km)

(1) Metro (about 1hour and 10minutes)

Taking Metro Line 1 (towards Wangjiagang 往王家港方向)

Getting off at the 16th stop: Nanbeitun (南北屯站)

Out of the metro from Exit B, walking for 1.2km to Qingdao Blue Horizon Jun Hua Hotel (Golden Beach).

(2) Metro + Bus (about 1hour and 20 minutes)

Taking Metro Line 1 (towards Wangjiagang 往王家港方向)

Getting off at the 15th stop: Shanli (山里站)

Out of the Metro from Exit C, walking around 200 meters to the bus stop: Shanli (山里地铁站)

Taking the bus Huangdao No.4 bus (黄岛 4 路)

Getting off at the 6th stop: Nantun (南屯站)

Walking 210 meters to Qingdao Blue Horizon Jun Hua Hotel (Golden Beach).

(3) Taxi (about 35 minutes, around 90 RMB)

4. Qingdao West Station (青岛西站) to Qingdao Blue Horizon Jun Hua Hotel (about 34 km)

(1) Bus (about 2hours)

Starting from bus stop Qingdao West Station (青岛西站), taking bus Huangdao No. K22(黄岛 K22 路);

Getting off at the 17th stop: Wangjiagang (王家港站);

Taking the bus Huangdao No.4 bus (黄岛 4 路);

Getting off at the 22nd stop: Nantun (南屯站);

Walking 140 meters to Qingdao Blue Horizon Jun Hua Hotel (Golden Beach).

(2) Taxi (about 1 hours, around 100 RMB)

Part VI Acknowledgements

On behalf of the MSAM2022 Organizing Committee, we would like to take this opportunity to express our sincere gratitude to our participants. Without their support and contributions, we would not be able to hold the conference in any form. We also would like to express our acknowledgements to the Technical Program Committee members who have given their professional guidance and valuable advice as reviewers. For those who contribute to the success of the conference organization without listing the names here, we would like to say thanks as well.

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