



Program
at a Glance

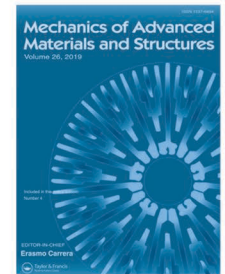
A To Mech 1 - 2023

International Conference on
Advanced Topics in Mechanics
of Materials, Structures and
Construction

March 12th, 13th, 14th, 2023



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Proceeding Citation Index



Date	Time	Event				
Sunday, March 12 th , 2023 Day 1	8:15 – 9:15	Conference Registration (Atrium)				
	9:30 – 10:00	Opening Ceremony (Auditorium) Keynote Address: Dr. Faisal Yousef Al Anezi, <i>Vice President for Academic Affair</i>				
	10:00 – 11:00	Keynote Speaker 1: Prof. J.N. Reddy, Texas A&M University, USA Title: A Robust Shell Finite Element and Nonlocal Approaches to Study Architected Materials and Fracture in Solids Keynote Speaker 2: Prof. Erasmo Carrera, Politecnico di Torino, Italy Title: Efficient Nonlinear Finite Elements Analysis of Metallic and Composite Structures Location: (Auditorium)				
	11:00 – 11:30	Coffee/Tea Break (Auditorium/Atrium Hall)				
	11:30 – 13:00	<u>Track 11-A</u> G-025 Room	<u>Track 3-A</u> Prince TURKI Center	<u>Track 2-A</u> Lecture Hall Room	<u>Track 4-A</u> G-027 Room	<u>Track 1</u> G-029 Room
	13:00 – 14:30	Lunch (Auditorium/Atrium Hall)				
	14:30 – 16:30	<u>Track 11-B</u> G-025 Room	<u>Track 3-B</u> Prince TURKI Center	<u>Track 2-B</u> Lecture Hall Room	<u>Track 4-B</u> G-027 Room	<u>Track 7</u> G-029 Room
	19:00 – 22:00	Sightseeing 1/Dinner: Heritage Village				

Date	Time	Event				
Monday, March 13 th , 2023 Day 2	9:30 – 10:30	Keynote Speaker 3: Prof. Weiqiu Chen, Zhejiang University, China Title: Indentation Responses of Soft Materials Under a Bias Keynote Speaker 4 : Prf. Erdogan Madenci, University of Arizona, USA Title: Peridynamics for domain agnostic analysis Keynote Speaker 5: Prof. Volodymyr Zozulya , York University, Canada Title: Non Classical Models of the Higher Order Beams, Plates and Shells Based on Carrera Unified Formulation (CUF) Location: (Lecture Hall)				
		Link to session in Microsoft Team:	https://teams.microsoft.com/l/meetup-join/19%3ameeting_NTkyY2E1NjltZWQ0ZC00ZTQ1LWJhNzctZjg3MDc4YmU5NmFj%40thread.v2/0?context=%7b%22Tid%22%3a%22c5c41c44-a4e4-416c-a206-825c4456d196%22%2c%22Oid%22%3a%22acb8db82-d1df-4a8e-9000-39e493f991f7%22%7d			
	10:30 - 11:00	Coffee/Tea Break (Auditorium/Atrium Hall)				
	11:00 – 13:00	<u>Track 13-A</u> G-025 Room	<u>Track 12-A</u> Prince TURKI Center	<u>Track 6-A</u> Lecture Hall Room	<u>Track 11-C</u> G-027 Room	<u>Track 9-A</u> G-029 Room
	13:00 – 14:30	Break/Snacks (Auditorium/Atrium Hall)				
	14:30 – 16:30	<u>Track 13-B</u> G-025 Room	<u>Track 12-B</u> Prince TURKI Center	<u>Track 6-B</u> Lecture Hall Room	<u>Track 11-D</u> G-027 Room	<u>Track 9-B</u> G-029 Room
19:00 – 22:00	Sightseeing 2/Dinner: Ithra Cultural Center					

Date	Time	Event				
Tuesday, March 14th, 2023 Day 3	9:30 – 10:30	<p style="text-align: center;"> Keynote Speaker 6: Prof. Zhongwei Guan, Advanced Materials Research Centre, UAE Title: Aerospace Applications of Fibre Metal Laminates and the Failure Analysis of FMLs Subjected to High Velocity Impact and Blast Loading Keynote Speaker 7: Prof. Evan J. Pineda, NASA Glenn Research Center, USA Title: NASA Multiscale Analysis Tool Location: (Lecture Hall) </p>				
		Link to session in Microsoft Team:	https://teams.microsoft.com/l/meetup-join/19%3ameeting_NTkyY2E1NjltZWQ0ZC00ZTQ1LWJhNzctZjg3MDc4YmU5NmFj%40thread.v2/0?context=%7b%22Tid%22%3a%22c5c41c44-a4e4-416c-a206-825c4456d196%22%2c%22Oid%22%3a%22acb8db82-d1df-4a8e-9000-39e493f991f7%22%7d			
	10:30 - 11:00	Coffee/Tea Break (Auditorium/Atrium Hall)				
	11:00 – 13:00	<u>Track 10</u> G-025 Room	<u>Track 12-C</u> Prince TURKI Center	<u>Track 15</u> Lecture Hall Room	<u>Track 16</u> G-027 Room	<u>Track 5 &14</u> G-029 Room
	13:00 – 14:30	Break/Snacks (Auditorium/Atrium Hall)				
	14:30 – 15:30	Awards, Closing & Valedictory Function Dr. Jamal Nayfeh, Dean of College of Engineering (Lecture Hall)				

Day 1: Sunday March 12 th , 2023				
Room: G-029				
Track 1: Novel Metamaterial Structures – I				
Session Chair(s) : Dr. Xin Ren and Dr. Mushtaq Khan				
Link to join the session in Microsoft Team: https://teams.microsoft.com/l/meetup-join/19%3ameeting_ODk5NDRkNDItYjQzMy00MDkxLWJlYjQtZTk3NjlxOTIwMjI4%40thread.v2/0?context=%7b%22Tid%22%3a%22c5c41c44-a4e4-416c-a206-825c4456d196%22%2c%22Oid%22%3a%22acb8db82-d1df-4a8e-9000-39e493f991f7%22%7d				
#	Author(s)	Paper Title	Paper ID#	Timeslot (15mins)
1	Xi Hai Ni and Xin Ren	A novel 3D re-entrant auxetic metamaterials with enhanced mechanical property	295	11:30
2	Xing Chi Teng, Wei Jiang and Xin Ren	Design and characteristics of a novel sandwich panel with auxetic core and surface	1567	11:45
3	Wei Jiang and Xin Ren	Mechanisms, Challenges and Perspectives of Auxetic Foams	2307	12:00
4	Hang Hang Xu and Xin Ren	Mechanical properties of aluminum foam-filled re-entrant honeycomb under bending loads	2391	12:15
5	Xue Gang Zhang and Xin Ren	Bending characteristics of 3D auxetic and non-auxetic metamaterials	7248	12:30
6	Jian Hao and Xin Ren	Novel dual-platform lightweight metamaterials with auxeticity	8873	12:45
7	Zhenyu Tang, Zhuo Chen, Haocheng Xu, Jialu Li and Jialu He	Design and Simulation of Novel 3-D Double Negative Metamaterials Unit Cell	430	13:00

Day 1: Sunday March 12 th , 2023				
Room: G-029				
Track 7: Smart materials, structures and metamaterials				
Session Chair(s) : Dr. Xin Fang and Dr. Ali El Wahed				
Link to join the session in Microsoft Team: https://teams.microsoft.com/l/meetup-join/19%3ameeting_ODk5NDRkNDItYjQzMy00MDkxLWJlYjQtZTk3NjlxOTIwMjI4%40thread.v2/0?context=%7b%22Tid%22%3a%22c5c41c44-a4e4-416c-a206-825c4456d196%22%2c%22Oid%22%3a%22acb8db82-d1df-4a8e-9000-39e493f991f7%22%7d				
#	Author(s)	Paper Title	Paper ID#	Timeslot (15mins)
1	Xin Fang	Flexibly programmable gear-based mechanical metamaterials	3875	14:30
2	Hao Chen, Yongtao Yao, Yanju Liu, Jinsong Leng and Wenfeng	Programmable Modular Flexible Lattice Metamaterials with Multiple Deformations	3919	14:45
3	Linli Zhang, Xiaozhen Sheng and Meng Li	Energy Harvesting and Energy Conversion in an Electromechanical Coupling Acoustic Black Hole	5028	15:00
4	Sergey Lekomtsev, Valerii Matveenko and Alexander Senin	Passive vibrations damping of a plate interacting with flowing fluid using shunted piezoelectric	7068	15:15
5	Fahad Aldossari, Abdul Aziz Afzal, Muhammad Azhar Ali Khan,	A review on recent developments in 3D Printing of Ceramic Products	4344	15:30
6	Encai Liu, Xin Fang and Jihong Wen	Stabilize and symmetrize the deformation of buckling metamaterial for tunable vibration	2667	15:45
7	Ali El Wahed	Characteristics Of Electrorheological Fluids Under Single And Mixed Modes	124	16:00

Day 1: Sunday March 12th, 2023

Room: Lecture Hall

Track 2-A: Structural analysis with machine learning - I

Session Chair(s): Dr. Jose L. Mantari Laureano and Dr. Bouchaib Zazoum

Link to join the session in Microsoft Team: https://teams.microsoft.com/l/meetup-join/19%3ameeting_NTkyY2E1NjltZWQ0ZC00ZTQ1LWJhNzctZjg3MDc4YmU5NmFj%40thread.v2/0?context=%7b%22Tid%22%3a%22c5c41c44-a4e4-416c-a206-825c4456d196%22%2c%22Oid%22%3a%22acb8db82-d1df-4a8e-9000-39e493f991f7%22%7d

#	Author(s)	Paper Title	Paper ID#	Timeslot (15mins)
1	Bouchaib Zazoum	Machine Learning for Tensile Strength Prediction of Polymeric Nanocomposites	6162	11:30
2	Miguel Hinostraza and Jose Mantari	Best theory diagram using genetic algorithms for composite plates	1208	11:45
3	Mohammed Shakir, Mohammad Talha and Dileep A. D.	Machine Learning Aided Stochastic Vibration Analysis of Functionally Graded Graphene	1319	12:00
4	Nayeemuddin Mohammed, Andi Asiz, Hiren Mewada, Zahara	Characterization of Sustainable Concrete Made from Wastewater Bottle Caps Using a Machine	4190	12:15
5	M. Manzoor Hussain, Lingala Syam Sundar and Feroz Shaik	Bayesian Regularization Optimization Algorithm for the Experimental Thermophysical Property	4866	12:30

Track 2-B: Structural analysis with machine learning - II

Session Chair(s): Dr. Jose L. Mantari Laureano and Dr. Bouchaib Zazoum

Link to join the session in Microsoft Team: https://teams.microsoft.com/l/meetup-join/19%3ameeting_NTkyY2E1NjltZWQ0ZC00ZTQ1LWJhNzctZjg3MDc4YmU5NmFj%40thread.v2/0?context=%7b%22Tid%22%3a%22c5c41c44-a4e4-416c-a206-825c4456d196%22%2c%22Oid%22%3a%22acb8db82-d1df-4a8e-9000-39e493f991f7%22%7d

1	Mosa Almutahhar, Ali Alhajeri, Rashid A. Laghari, Syed S.	Prediction of Tool Failure in Metal Hot Extrusion Process using Artificial Neural Networks	1358	14:30
2	Pratik Punj and Md Adil	Investigating the Fluid-Structure Interaction of L-Shaped Pipe Bends using Machine Learning	2723	14:45
3	Md Adil and Pratik Punj	Utilizing Machine Learning Techniques for Predictive Modelling of Absorptivity in L-Shaped	7261	15:00
4	S. Tang, X. Xu, H. Yang	Intelligent digital twin of tunnel structures based on machine learning method	111	15:15
5	X. He, X. Xu, H. Yang	Finite element analysis of tunnel structures based on random forest algorithm	112	15:30
6	M. Zhao, X. Xu, H. Yang	Intelligent health monitoring of engineering structures based on deep learning method	113	15:45
7	Z. Wang, X. Xu, H. Yang	Robust and intelligent modeling of tunnel structures based on free-form B-spline method	114	16:00
8	M. Zhao, X. Xu, H. Yang	Cracks intelligent detection of engineering structures based on Faster R-CNN method	115	16:15

Day 1: Sunday March 12th, 2023

Room: Prince TURKI Center

Track 3-A: Tensor Application and Constitutive Equation Modelling in Continuum Mechanics and Engineering Design - I

Session Chair(s): Dr. Olawanle Layeni and Dr. Odunay Fadodun and Dr. Muhammad Asad

Link to join the session in Microsoft Team: https://teams.microsoft.com/l/meetup-join/19%3ameeting_YzdmNTk3OGUtYjcxNS00NjA4LWJkZmQtZGVhMzNjYzU0MGE3%40thread.v2/0?context=%7b%22Tid%22%3a%22c5c41c44-a4e4-416c-a206-825c4456d196%22%2c%22Oid%22%3a%22acb8db82-d1df-4a8e-9000-39e493f991f7%22%7d

#	Author(s)	Paper Title	Paper ID#	Timeslot (15mins)
1	Akinola, A. P., Borokinni, A. S. & Fadodun, O. O.	Tensor as a Tool in Engineering Analysis	4711	11:00
2	Olokuntoye, B.A., Fadodun, O.O., Borokinni, A.S., Layeni, O.P.	Thermodynamically Consistent Constitutive Model for Thermohyperelastic Solids with	104	11:15
3	Ajayi, O.K., Ajayi, O.O., Malomo, B.O., Adeyi, A.J., & Nwanko,	Hand Gesture Control Accuracy Through Increased Epoch and Batch Size	6410	11:30
4	Layeni, O.P., & Akinola, A.P.	Dynamic Deformation Analysis of a Spherical Cavity Explosion	6459	11:45
5	Borokinni, A.S., Akinola, A.P., Layeni, O.P., Fadodun, O.O. &	Mises Flow Rules for Distortion Gradient Plastic Materials in Finite Deformation	109	12:00

Track 3-B: Tensor Application and Constitutive Equation Modelling in Continuum Mechanics and Engineering Design - II

Session Chair(s): Dr. Olawanle Layeni and Dr. Odunay Fadodun and Dr. Muhammad Azhar Khan

Link to join the session in Microsoft Team: https://teams.microsoft.com/l/meetup-join/19%3ameeting_YzdmNTk3OGUtYjcxNS00NjA4LWJkZmQtZGVhMzNjYzU0MGE3%40thread.v2/0?context=%7b%22Tid%22%3a%22c5c41c44-a4e4-416c-a206-825c4456d196%22%2c%22Oid%22%3a%22acb8db82-d1df-4a8e-9000-39e493f991f7%22%7d

1	Odunayo Fadodun	Magnetoelastic Deformation of Conductive Semilinear Hyperelastic Tubes	8308	14:30
2	Odunayo Fadodun, Bolanle Olokuntoye, Olawanle Layeni and	Finite Electroelastic Deformation of Dielectric Semilinear Hyperelastic Tubes	3759	14:45
3	Adebowale Borokinni, Adegbola Akinola, Olawanle Layeni,	Size-Effects Due to Burgers Tensor in Classical Deformation of Isotropic Thermoplastic Materials	3115	15:00
4	Layeni, O.P.	Explicit Solutions for the Solidification of Micropolar Elastic Slabs	110	15:15
5	Umut çalışkan, Hilal Gülşen and Mustafa Kemal Apalak	New Approach for Modeling Randomly Distributed CNT Reinforced Polymer Nanocomposite	513	15:30
6	Babafemi Malomo	A Homogenized Finite Element Analysis of the Deformation of Axially-loaded Thin-walled	5199	15:45

Day 1: Sunday March 12th, 2023

Room: G-027

Track 4-A: Intelligent monitoring of engineering structure - I

Session Chair(s): Dr. Xiangyang Xu and Dr. Omar Sily

Link to join the session in Microsoft Team: https://teams.microsoft.com/l/meetup-join/19%3ameeting_NWQ4NzcwMmYtOTA1ZS00YmYOLTkyMTYtNDMzMWZy2VhYWE4%40thread.v2/0?context=%7b%22Tid%22%3a%22c5c41c44-a4e4-416c-a206-825c4456d196%22%2c%22Oid%22%3a%22acb8db82-d1df-4a8e-9000-39e493f991f7%22%7d

#	Author(s)	Paper Title	Paper ID#	Timeslot (15mins)
1	Yumei Chen, Xiang Fang, Ji Wang and Erasmo Carrera	An analysis of band gap characteristics of metamaterial plates with dual helix cells	2739	11:00
2	Salvatore Saputo, Erasmo Carrera and Volodymyr V Zozulya	Linear response of thin axisymmetric cross-ply structure under a static load: numerical and	6479	11:15
3	Wang Tengxiao and Jian Yang	Vibration analysis of coupled systems coupled with nonlinear joint of bilinear stiffness	8368	11:30
4	Mohammad Ali Kadampur	Machine Learning based Material Discovery: A Case Study using Generative Adversarial	6140	12:00
5	James Polagangu and Byji Varughese	Estimation of Failure Load of Adhesively Bonded Composite Joints with Embedded Crack in	3625	12:15

Track 4-B: Intelligent monitoring of engineering structure - II

Session Chair(s): Dr. Xiangyang Xu and Dr. Omar Sily

Link to join the session in Microsoft Team: https://teams.microsoft.com/l/meetup-join/19%3ameeting_NWQ4NzcwMmYtOTA1ZS00YmYOLTkyMTYtNDMzMWZy2VhYWE4%40thread.v2/0?context=%7b%22Tid%22%3a%22c5c41c44-a4e4-416c-a206-825c4456d196%22%2c%22Oid%22%3a%22acb8db82-d1df-4a8e-9000-39e493f991f7%22%7d

1	Jianying Hu, Han Li, Jianke Du, Zishun Liu and Erasmo Carrera	Inhomogeneous Large Deformation of Magneto-thermal Sensitive Hydrogel Composite	9031	14:30
2	Lei Yang, Jianke Du and Erasmo Carrera	Love Waves Propagation in Layered Piezoelectric Semiconductor-Piezomagnetic Composite	6144	14:45
3	Miao Yu, Xin Fang, Jihong Wen and Dianlong Yu	Robust nonlinear elastic metamaterial enabled by collision damping	5513	15:00
4	Matteo Filippi, Rodolfo Azzara and Erasmo Carrera	Rotordynamic analyses with variable-kinematic beam and shell finite elements	6375	15:15
5	Zhenqiang Zhao, Haitao Wei and Chao Zhang	A subcell-FE model for the impact simulation of three-dimensional woven composites	4211	15:30
6	Kyungsuk Jang and Gunjin Yun	Information-driven optimal experimental design with deep neural network surrogate model for	198	16:00

Day 1: Sunday March 12th, 2023

Room: G-025

Track 11-A: **Advanced Construction Materials in Geotechnical Applications, Structures and Foundation Engineering - I**

Session Chair(s): **Dr. Tahar Ayadat and Dr. Layal Jradi**

Link to join the session in Microsoft Team: https://teams.microsoft.com/l/meetup-join/19%3ameeting_ZjRmZGFjNjMtMjcjZS00NGE3LTg3NTgtMWJlZjdmNGNiNmU2%40thread.v2/0?context=%7b%22Tid%22%3a%22c5c41c44-a4e4-416c-a206-825c4456d196%22%2c%22Oid%22%3a%22acb8db82-d1df-4a8e-9000-39e493f991f7%22%7d

#	Author(s)	Paper Title	Paper ID#	Timeslot (15mins)
1	MousaBani Baker, Adel Hanna, Maria Elektorowicz, Tahar	One Dimensional Oedometer Laboratory Testing for Expansive Clay Submerged with	5603	11:00
2	Tahar Ayadat, Ammar Noui, Layal Jradi, Danish Ahmed,	Stabilization of a Swelling Soil using three different Chemical Additives	5456	11:15
3	Mohammad Khasawneh, Samar Dernayka and Saidur	Experimental Characterization and Environmental Impact of Different Grades of CRM-Modified	219	11:30
4	Parea R. Rangan, MiswarTumpu, YohansSunarno and	Stone Dust as Replacement for Fine Aggregate in Cellular Lightweight Concrete (CLC): Volume	2780	11:45
5	Ahmed Tafraoui, AbdelhafidSadok and Abdelkadir Makani	Elaboration and physico-chemical characterization of self-compating concretes based on local	4629	12:00
6	Mohammad Ahmad Alsheyab and Mohammad Ali Khasawneh	Fatigue Life Evaluation of Asphalt Mixtures Containing Natural River Sands and Designed by	2737	12:15

Track 11-B: **Advanced Construction Materials in Geotechnical Applications, Structures and Foundation Engineering - II**

Session Chair(s) : **Dr. Tahar Ayadat and Dr. Mousa Bani Baker**

Link to join the session in Microsoft Team: https://teams.microsoft.com/l/meetup-join/19%3ameeting_ZjRmZGFjNjMtMjcjZS00NGE3LTg3NTgtMWJlZjdmNGNiNmU2%40thread.v2/0?context=%7b%22Tid%22%3a%22c5c41c44-a4e4-416c-a206-825c4456d196%22%2c%22Oid%22%3a%22acb8db82-d1df-4a8e-9000-39e493f991f7%22%7d

1	Layal Jradi, Bassel Seif El Dine, Tahar Ayadat, Saidur	Effect of Shearing Conditions and Initial Aggregates' State on the Mechanical Behavior of Cellular	547	14:30
2	MousaBani Baker, Adel Hanna, Maria Elektorowicz, Tahar	Investigating the Influence of Alternative Fuels on the Properties of Sand-Bentonite Liners	7813	14:45
3	ZaouiMiloud, Tafraoui Ahmed and BekkarAzzidine (Algeria)	Physico-Chemical Characterization And Exploitation Of A Local Ultra Fine In Mortars	9047	15:00
4	Tahar Ayadat, HocineLefkir, Zahar Said Haddad, Danish	Contemporary Conceptual Models for Predicting Carrying Capacity of Multi Helices Screw Piles	2906	15:15
5	Batool Al-Shorman, MousaBani Baker and Tahar Ayadat	Comprehensive Review of Soil Stabilization Agents	1056	15:30
6	Arun Kumar Parashar, Nakul Gupta, Kuldeep Kumar Saxena	An Investigation on the Strength and Durability Properties of Calcined Clay and GGBS Based	3257	15:45
7	Amar Mezidi and Ratiba Kettab (Algeria)	Influence of Rubber Crumb on Concrete Sand Characteristics	119	16:00
8	Muhammad Kashif Shehzad, John P. Forth, Nikolaos Nikitas,	Investigation of the Influence of External Edge Restraint on Reinforced Concrete Walls	6852	16:15

Day 2: Monday March 13th, 2023

Room: Lecture Hall

Track 6-A: **Nonlinear structure mechanics and failure analysis I**

Session Chair(s): Dr. Alfonso Pagani, Dr. Mario Rui Arruda, Dr. Chao Zang and Dr. Gunjin Yun

Link to join the session in Microsoft Team: https://teams.microsoft.com/l/meetup-join/19%3ameeting_N2Y5NTUyY2UtZDkyMS00MDQ0LWI0OGUyYjM1M2ZHYWU4ZWY0%40thread.v2/0?context=%7b%22Tid%22%3a%22c5c41c44-a4e4-416c-a206-825c4456d196%22%2c%22Oid%22%3a%22acb8db82-d1df-4a8e-9000-39e493f991f7%22%7d

#	Author(s)	Paper Title	Paper ID#	Timeslot (15mins)
1	Alfonso Pagani, Piero Chiaia, Matteo Filippi and Maria Cinefra	Unified hexahedral finite elements for large strains analysis of compressible and nearly	2584	11:00
2	Riccardo Vescovini and Mohammad Reza Najafian Zadeh	Progressive Failure Analysis of Postbuckled Plates via Mixed Formulation	220	11:15
3	Alfonso Pagani, Marco Enea and Erasmo Carrera	Global/local and coupled FE-PD models for progressive failure analysis	3956	11:30
4	Yu Xiong, Haiyang Yang, Xinyu Li, Hongshuai Lei and Guoxing	Crashworthy optimization of thin-walled circular FRP tubes filled with composite skeletons based	2118	11:45
5	Taeri Kim, Dongwon Ha and Gun Jin Yun	Post-impact Fatigue Simulation of Composite Laminate using Puck's Failure Criteria	6400	12:00
6	Dr. Guannan Wang, Dr. Yulin Huang, Dr. Weijian Wang	Mechanics of Multiphase Media under Hypergravity Conditions	123	12:15

Track 6-B: **Nonlinear structure mechanics and failure analysis II**

Session Chair(s): Dr. Alfonso Pagani, Dr. Mario Rui Arruda, Dr. Chao Zang and Dr. Gunjin Yun

Link to join the session in Microsoft Team: https://teams.microsoft.com/l/meetup-join/19%3ameeting_N2Y5NTUyY2UtZDkyMS00MDQ0LWI0OGUyYjM1M2ZHYWU4ZWY0%40thread.v2/0?context=%7b%22Tid%22%3a%22c5c41c44-a4e4-416c-a206-825c4456d196%22%2c%22Oid%22%3a%22acb8db82-d1df-4a8e-9000-39e493f991f7%22%7d

1	Yakubu Kasimu Galadima, Selda Oterkus, Erkan Oterkus, Islam	Effect of Phase Contrast on the Effective Instantaneous and Equilibrium Response of Viscoelastic	116	14:30
2	Riccardo Augello and Erasmo Carrera	Modeling of stiffened plates using refined 2D finite elements	4355	14:45
3	Riccardo Augello, Alfonso Pagani and Erasmo Carrera	Effect of different material on the folding of composite ultrathin tape spring hinges via unified 2D	9315	15:00
4	Jiahui Shen, Mario Rui Arruda, Alfonso Pagani and Erasmo	A regularized higher-order beam element for the flexural analysis of reinforced concrete	5365	15:15
5	Haitham Abdullah Khamis Aladwani and Khadersab Adamsab	Non-Linear Analysis of Cold-Worked Austenitic Stainless-Steel Reinforcing Bar Post-Fire Material	6829	15:30
6	Hashim Al Mahmud, Sagar Patil, Matthew Radue and Gregory	Molecular Dynamics Modeling to Probe the Effect of Surface Functionalization on the Interfacial	5266	15:45
7	Ali Alhammadi	Qualificatory Static and Dynamic Numerical Analysis of a Lunar Regolith Collection System	3426	16:00

Day 2: Monday March 13th, 2023

Room: : Prince TURKI Center

Track 12-A: Future Sustainable Infrastructure and Construction Materials - I

Session Chair(s): Dr. Andi Asiz and Dr. Zhongwei Guan

Link to join the session in Microsoft Team: https://teams.microsoft.com/l/meetup-join/19%3ameeting_MTIiYmUyNmMtYTAOMi00NDA5LWlwMzAtNDIxMWY1Y2FkNjU0%40thread.v2/0?context=%7b%22Tid%22%3a%22c5c41c44-a4e4-416c-a206-825c4456d196%22%2c%22Oid%22%3a%22acb8db82-d1df-4a8e-9000-39e493f991f7%22%7d

#	Author(s)	Paper Title	Paper ID#	Timeslot (15mins)
1	Dr Saidur Chowdhury (Saudi Arabia)	Recycled Ni smelter Slag as a Engineering Material - Opportunity and Sustainability	2230	11:00
2	LakhdarAzzouz, SaadChaib and	Influence of recycled gravel type on the rheological properties of self-compacting concrete in	1403	11:15
3	Danish Ahmed, Samar Dernayka, Saidur Chowdhury, Andi Asiz	Sustainable Timber Construction for Building in the LINE of NEOM	9615	11:30
4	Musa Adamu, Tejas D Doshi, Veerendrakumar C. Khed and	Effect of Steel Fibres on the mechanical Strengths of fly ash/GGBS based Geopolymer concrete	4379	11:45
5	MiswarTumpu, YohansSunarno and PareaRusanRangan	Carbon nanotubes (CNTs) and superplasticizer type F (StF) in high performance concrete (HPC):	8201	12:00
6	MeriemBayah and FaridDebieb (Algeria)	Performance Of Self-Compacting Concrete Based On Fine Recycled Concrete Aggregate	1530	12:15

Track 12-B: Future Sustainable Infrastructure and Construction Materials - II

Session Chair(s): Dr. Andi Asiz and Dr. Khaled Galal

Link to join the session in Microsoft Team: https://teams.microsoft.com/l/meetup-join/19%3ameeting_MTIiYmUyNmMtYTAOMi00NDA5LWlwMzAtNDIxMWY1Y2FkNjU0%40thread.v2/0?context=%7b%22Tid%22%3a%22c5c41c44-a4e4-416c-a206-825c4456d196%22%2c%22Oid%22%3a%22acb8db82-d1df-4a8e-9000-39e493f991f7%22%7d

1	YohansSunarno (Indonesia)	Ultrasonic Pulse Velocity (UPV) and Initial Rate of Water Absorption (IRA) of Foam Concrete	6414	14:30
2	Muhammad Nasir, Khalid Alotaibi, A.B. M. Saiful Islam, Walid	Enhancement of workability and strength characteristics of sustainable mortar utilizing Arabic	3594	14:45
3	WasiuOlabamijiAjagbe, Robert OjonugwaOkpanachi,	Strength Properties of Self-Compacting Concrete Incorporating Iron Ore Tailings	4578	15:00
4	Agha Noureddine, Makani Abdelkadir and Tafraoui Ahmed	Valorization of inert waste from demolition concrete in the manufacture of new materials	9058	15:15
5	Dr.HeshamAbouElmal and Prof. HossamSallam (Saudi Arabia,	Strengthened RC Beams By Advanced Materials	7566	15:30
6	Rohit Sinha and B N Rao (India)	High Dimensional Model Representation for The Probabilistic Assessment of Seismic Pounding	262	15:45
7	Seba Mohamed Rida and Kebdani Said (Algeria)	Predictive model based on artificial neural network for sound effect analysis on sandwich	6177	16:00
8	Marah Alrashed, DeemahAlsaud, Layal Jradi and Deema	Structural and Geotechnical Design and Analysis of Green Cubes Tower in Alkhobar	6998	16:15

Day 2: Monday March 13th, 2023

Room: G-029

Track 9A: **Mechanics of materials and structures produced by additive manufacturing technologies - I**

Session Chair(s): Dr. Muhammad Asad and Dr. Kuldeep Saxena

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#	Author(s)	Paper Title	Paper ID#	Timeslot (15mins)
1	Hussein Mohammed Ibraheem	A Comparative Study on the Use of Laser Beam and Abrasive Water Jet in Hole Making Process	2459	11:00
2	Ali Alhajeri, Mosa Almutahhar, Jafar Albinmoussa and Usman	Statistical Analysis of Fatigue Behavior in Additively Manufactured Steels	7830	11:15
3	Maroua Ferhat, Hocine Djemai, Adnane Labeled and Fatah	The physico-mechanical characteristics of the Date Palm Leaflet	7857	11:30
4	Asim Asghar Yaseen, Amanullah Turkman, Muhammad Asad,	Compressive Performance of Bouligand Structure derived from Arapaima Gigas	5161	11:45
5	Amrinder Mehta, Hitesh Vasudev, Gaurav Prashar, Kuldeep K.	An in-depth analysis of bio-nanomaterials for medical implants and feasibility studies for additive	9528	12:00
6	Yassar Mukhrish, Muhammad Asad, Muhammad Khan and	Experimental investigations on Wire Arc Additive Manufacturing process using an Inconel 625	2165	12:15

Track 9-B: **Mechanics of materials and structures produced by additive manufacturing technologies - II**

Session Chair(s): Dr. Muhammad Asad and Dr. Prakash Chander

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1	Abdessamad Nouari, Ahmed Taфраoui, Salima Taфраoui and	Design of brake pads from economical materials	6103	14:30
2	Mohammed Mallem, Ahmed Taфраoui, Miloud Zaoui,	The search for new light and rigid materials for the manufacture of aeronautical and automotive	6487	14:45
3	K.V. Sharma, Lingala Syam Sundar, P. Haseena Bee, P.H.V.	Effect of SiO ₂ Nanocoolant in End Milling of Al 6061 and its Influence on Work Piece Morphology	6153	15:00
4	Zaoui Miloud and Taфраoui Ahmed (Algeria)	Exploitation of dune sand in the manufacture of stamping tools	8794	15:15
5	M. Amin Mir, Kim Andrews, M. Waqar Ashraf and Lingala	A Critical Review on Reduced Graphene Oxide-based Materials	2627	15:30
6	Amrinder Mehta, Hitesh Vasudev, Gaurav Prashar, Chander	Novel Material Used in 3D Printing Applications: a review	7405	15:45
7	Omar Yahya, Gharam Yahya, Faramarz Djavanrood and	The State of 3D Printing Technologies: A Review	9726	16:00
8	Saleh Alaboudi, Muhammad Azhar Ali Khan, Muhammad	The Innovation in Wire Arc Additive Manufacturing (WAAM): A Review	5943	16:15
9	Meshal Alsaari, Mushtaq Khan and Faramarz Djavanroodi	Manufacturing Strategy for Additive Manufacturing of a Piping Component for Oil and Gas	9843	16:30

Day 2: Monday March 13th, 2023

Room: : Room G027

Track 11-C: Advanced Construction Materials in Geotechnical Applications, Structures and Foundation Engineering - III

Session Chair(s): Dr. Mohammad Khasawneh and Dr. Mohammad Ali Kadampur

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#	Author(s)	Paper Title	Paper ID#	Timeslot (15mins)
1	AbolfazlBaghbani, FirasDaghistani, Hasan Baghbani,	Artificial Intelligence-Based Prediction of Geotechnical Impacts of Polyethylene Bottles and	8447	11:00
2	AbolfazlBaghbani, FirasDaghistani, KatayoonKiany and	AI-Based Prediction of Strength and Tensile Properties of Expansive Soil Stabilized with Recycled	1257	11:15
3	Islam Elsayed Nagy, AlirezaAsadian and Khaled Galal (Canada)	Fatigue of Glass Fibre-Reinforced Polymer Rebar: A Review	3297	11:30
4	RekiaZouini, Abdelkadir Makani and Ahmed Tafraoui (Algeria)	The effect of aggressive environment on the mechanical properties of high performance	7187	11:45
5	Islam Elsayed Nagy, AlirezaAsadian and Khaled Galal (Canada)	Low-Cyclic Tension-Tension Fatigue Behaviour of GFRP Reinforcing Bars	3798	12:00
6	Zeinah Elnassar, Farid Abed, Wael Abuzaid and Yazan Alhoubi	Response of GFRP Bars at Different Temperatures	117	12:15

Track 11-D: Advanced Construction Materials in Geotechnical Applications, Structures and Foundation Engineering - IV

Session Chair(s): Dr. Mohammad Khasawneh and Dr. Hesham Abou ElMal

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1	Farzana Iqbal and Malavika Varma (India)	A Numerical Study On The Effect Of Basement Excavation And Fibre Reinforced Concrete As	3599	14:30
2	Ashish Shukla, Nakul Gupta, Kuldeep Kumar Saxena and	Influence of Megaterium Bacteria on the Durability & Mechanical Properties of Concrete	3371	14:45
3	SalimaTafraoui, Ahmed Tafraoui and Naima Seghouani	Recycling Of Machining Waste Fibers In The Formulation Of New Concrete	6324	15:00
4	AkshayaGomathi K and AmirthamRajagopal (India)	Blast analysis of concrete structure using the rate-sensitive damage model	828	15:15
5	Mohamed Aymen Dali and AhcèneBenamghar (Algeria)	Assessment of recent methods for determination of soil final settlement using field data	594	15:30
6	R. Laureano, J. Yarasca and J. L. Mantari (Peru)	Construction of Best Theory Diagrams for clamped metallic and laminated beams using the	122	15:45

Day 2: Monday March 13th, 2023

Room: G-025

Track 13-A: Fluid-Structure Interaction - I

Session Chair(s): Dr. Esam Jassim and Dr Mouhamad El Hassan

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#	Author(s)	Paper Title	Paper ID#	Timeslot (15mins)
1	Marwan Alkheir, Hassan Assoum, Nour Eldin Afyouni, Bilal El	Interaction of a rectangular jet with a slotted plate in presence of a control mechanism:	6706	11:00
2	Fadodun, O.G., & Kaood, A.	Investigation of Heat Transfer Performance and Entropy Production Rate of Hybrid Nano Fluid	103	11:15
3	Rahaf Almutairi, Feroz Shaik and Lingala Syam Sundar	Ionanofluids: A Review on The Properties and Thermal Applications	3813	11:30
4	Nikolay Bukharin, Mal Farrokhzad and Mouhammad El Hassan	A comprehensive analysis of the erosion corrosion in a carbon steel boiler tube elbow through	8828	11:45
5	Esam Jassim, Muhammad Asad and Bashar Jasem	Numerical Simulation of High-pressure Gas-Jet Impingement on the Adjacent Equipment	6334	12:00
6	Esam Jassim and Bashar Jasem	Comparison study of performance and Heat leak factor of three types of Heat exchangers	6428	12:15

Track 13-B: Fluid-Structure Interaction - II

Session Chair(s): Dr. Esam Jassim and Dr Mouhamad El Hassan

Link to join the session in Microsoft Team: https://teams.microsoft.com/l/meetup-join/19%3ameeting_YWRlZGExOTctMTc5OC00YzU3LWE3ODEtZDUyOGMwOWNjOTM5%40thread.v2/0?context=%7b%22Tid%22%3a%22c5c41c44-a4e4-416c-a206-825c4456d196%22%2c%22Oid%22%3a%22acb8db82-d1df-4a8e-9000-39e493f991f7%22%7d

1	Mahdjour Abdelkader, Seba Mohamed Rida and Aboshighiba	Analysis of the Thrust Pad Bearings' Turbulent Fluid Model	6184	14:30
2	Hicham Aboshighiba, Seba Mohamed Rida and Mahdjour	Efficient modeling of a hydrostatic thrust bearing with variable lubricating film thickness	6360	14:45
3	R.M.R. Panduro, J. Yarasca and J.L. Mantari	Neural networks approach on the hygro-thermo-mechanical behavior of composite plates	120	15:00
4	Lujain Abdullatif Alshuhail, Alanood Mahmoud Almoaikel,	Pool Boiling Heat Transfer Characteristics of Using Nanofluids	7691	15:15
5	Gauri Patki, Phanendra Kumar Attada and Dineshkumar	Influence of Canard Geometrical Configuration on the Radar Cross Section	2604	15:30
6	Omar Yahya, Gharam Yahya Yahya, Emad Yahya, Esam Jassim	Aeroponic Tower Garden Solar Powered Vertical Farm	3134	15:45
7	Ananya Tomar, Sankalp Kaushal, Shalini Chahar and	MPPT with PMSG Wind Energy Conversion System	8564	16:00
8	Bashar Jasem and Esam Jassim	Numerical study on the effect of Real gas model on the flow structure and shock location of	7762	16:15

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Room: G-029

Track 5: **Mechanics of functional materials**

Track 14: **Modelling and Optimization of Materials Manufacturing Processes**

Session Chair(s): **Dr. Li Xiangyu** and **Dr. Kuldeep Saxena**

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#	Author(s)	Paper Title	Paper ID#	Timeslot (15mins)
1	J. Yarasca J. C. Monge, J. L. Mantari and M. A. Hinostrroza	Analysis of functionally graded plates using a novel parametric higher order two-dimensional	121	11:00
2	Rupali Tamnar and Atteshamuddin Sayyad	Static Response of Functionally Graded Porous Spherical Shells Using Trigonometric Shear	581	11:15
3	Lei Zhang and Guannan Wang	Bending and Vibration of Floating Functionally Graded Porous Beams with a Multiscale Model	7638	11:30
4	Umut çalışkan, çağlar Sevim and Munise Didem Demirbaş	Tensile Behavior of Functionally Graded Sandwich PLA-ABS Produced via Fused Filament	8417	11:45
5	Nadeem Qaiser and Vincent Tung	Mechanics of flexible and wearable electronic energy systems	815	12:00
6	Sumit Kolapkar and Atteshamuddin Sayyad	Static Response of FGM Shell Using Refined Higher-Order Shear and Normal Deformation Theory	1070	12:15
7	Marina V. Shitikova, V.V. Kandu	Analysis of Free Non-Linear Vibrations of a Fractionally Damped Cylindrical Shell with Initial	118	12:30
8	Tomas Profant, Jan Sladek and Vladimir Sladek	The Flexoelectric Effect for Interface Cracks Between Two Dissimilar Materials	610	12:45
9	Zekiye Erdoğan and Munise Didem Demirbaş	Experimental investigations on the thermo-mechanical properties of carbon-basalt-	3901	13:00
10	Xiaoya Zhai, Yundong Gai, Liuchao Jin, Wei-Hsin Liao, Falai	Isogeometric topology optimization of auxetic materials based on moving morphable method	2089	13:15
11	Umair Arif	Modelling the effect of tool material on Material removal rate in electric discharge machining.	4964	13:30

Day 3: Tuesday March 14th, 2023

Room: G-027

Track 16: **Special Contributions to The Conference Topic**

Session Chair(s): **Dr. Feroz Shaik** and **Yousef Alshammari**

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#	Author(s)	Paper Title	Paper ID#	Timeslot (15mins)
1	Sansabilla Bouchareb and Rachid Tigrine	Structure, electronic properties of AIs using first-principles calculations	2345	11:00
2	Mustapha Sadouki	Low-frequency ultrasound physical parameters impact on the first and second waves reflected	6947	11:15
3	Arjun K S, Jipin Prakash, Nice Menachery and Deepanraj B	Mechanical and Tribological Characterization of Aluminium Metal Matrix Composites Reinforced	9154	11:30
4	A. Venkata Ramayya, B Bekalo and Lingala Syam Sundar	Analysis of Telescopic Paraboloidal Solar Concentrator: Dual Receiver	5796	11:45
5	Mahdi Alnasser, Hassan Alghazal, Amjad Almeihan, Mounir	Design of a Solar PV Power Plant at KFU Premises	3888	12:00
6	Mohammed Al-Khaldi, Bader Bashmail, Nasser Al-Jafar, Saad	Design of an Automated Cleaning System for Solar Panels	4388	12:15
7	Jaanvi Garg, Akshay Jain, Avadhoot Abaso Mohite, Bhaskor	CRITICAL REVIEW ON ETHANOL PRODUCING FEEDSTOCK AND METHODS	3906	12:30
8	Megdi Eltayeb	Preparation and characterization of nanoparticles for encapsulation and delivery vehicles	1731	12:45
9	Megdi Eltayeb	Biomechanical Model for musculoskeletal Simulation	2164	13:00
10	Omar D. Mohammed, Qatralnada Mahmood	Using powder metal gears in industrial applications- a review	3230	13:15
11	Ankit Chakravarti, R. S. Soundharya, Sitesh Kumar Singh,	Evaluation of Groundwater potential Zones using RS and GIS Application in Malattar watershed,	1124	13:30

Day 3: Tuesday March 14th, 2023

Room: G-025

Track 10: Numerical modelling and experimental testing of materials and structures

Session Chair(s): Dr. Muhammad Azhar Khan and Dr Megdi El Tayeb

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#	Author(s)	Paper Title	Paper ID#	Timeslot (15mins)
1	Daniele Scano and Erasmo Carrera	Finite elements based on Jacobi shape functions for the dynamic analysis of beams, plates, and	7020	11:00
2	Abdul Mateen Mohammed, Jaya Kanda Samy, Bhavani	Von Mises Stress Distribution along the Cruciform Specimen under Biaxial Loading: Geometric	4335	11:15
3	Ugur Can and Ibrahim Guven	Peridynamic Investigation of Brittle Material Response Under Dynamic Loading	9102	11:30
4	Erdogan Madenci and Cody Mitts	Peridynamics with Strain Gradient for Modeling Carbon Nanotube under Static and Dynamic	9258	11:45
5	Mohamed Farouk	Three-Dimensional Dynamic Numerical Simulation of The Holy Mosque Area	8917	12:00
6	Malomo, B.O.	A Homogenized Finite Element Analysis of the Deformation of Multicellular Thin-walled	105	12:15
7	Zarak Khan, Mushtaq Khan, Faramarz Djevanroodi and Abdul	Analyzing electromagnetic forming of SS304 sheet using AA6061-T6 sheet as driver using a fully	9808	12:30
8	Mohammed Aldossary, Yousuf Alsuliman, Abdul Aziz Afzal,	Modeling and simulation of Modular Agricultural Robot flexible production systems	7636	12:45
9	Vishal Mothabhau Birari and B N Rao	Investigation of Blast Resistance of Cladding with Square Dome-shaped Kirigami Folded	4055	13:00
10	Arhum Hassan and Farid Abed	Constitutive Modeling of Dynamic Strain Aging in Niobium	1225	13:15
11	Yanyan Lu, Yuchen Zhang and Wenzhi Wang	Mechanical Properties of ZrNiSn-based Half-Heusler Material under Thermo-mechanical	4014	13:30

Day 3: Tuesday March 14th, 2023

Room: Lecture Hall

Track 15: **Composite Material**

Session Chair(s): **Dr. Bouchaib Zazoum** and **Dr Parakash Chander**

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#	Author(s)	Paper Title	Paper ID#	Timeslot (15mins)
1	P. R. Manu, M. Sharma, P. M. Anilkumar and B. N. Rao	Stability characteristics of multistable series-connected variable stiffness composite laminates	381	11:00
2	Sagar Shah and Marianna Maiaru	Analytical Model for Transverse Tensile Strength Prediction of Thermoset Composites	1751	11:15
3	Yueran Zhao, Jian Zang and Wenzhi Wang	Tensile behaviors of hybrid metal-composite joints with different protrusion densities	4965	11:30
4	B. Danish, P. M. Anilkumar, A. Haldar and B. N. Rao	Dynamic snap-through of bistable cross-ply laminates using MFC actuators under oscillating	6191	11:45
5	Salim Belouettar and Borek Patzak	Physics Informed machine learning for stress-strain curve prediction of composites materials	7306	12:00
6	Amina Assouli	Diagnosing Mechanical Characteristics of Sewn Sandwich Plate Under Impact of Various Energies	8193	12:15
7	Ajim Shaikh and Atteshamuddin Sayyad	Static Analysis of Laminated Sandwich Shells Considering Effects of Transverse Normal Strain	310	12:30
8	Anuja Jape and Atteshamuddin Sayyad	Static Analysis of Cross-Ply Laminated Spherical Shells using a New Hyperbolic Shear	8488	12:45
9	Faez Qahtani	Review of methods to determine Adhesion Strength of Thermal Spray Coatings on aluminum	1409	13:00
10	Abdul Mateen Mohammed, Tajuddin Mohammed, Ravi	Bi-Axial Behavior Of Glass/Epoxy Pipe Subjected To Internal Pressure	5084	13:15
11	A.V.S.S.K.S. Gupta, V.V. Venu Madhav, Ch. Sri Chaitanya, P.	Influence of Thermo-Mechanical Loading on the Fracture properties of a Composite laminate	5350	13:30

Day 3: Tuesday March 14th, 2023

Room: : Prince TURKI Center

Track 12-C: Future Sustainable Infrastructure and Construction Materials - III

Session Chair(s): Dr. Saidur Chowdhury and Dr. Walid Abubaker Al-Kutti

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#	Author(s)	Paper Title	Paper ID#	Timeslot (15mins)
1	Mounir Bouzguenda, Abdelrahman Shawki, Abdulaziz	Technical and economical feasibility of using solar PV system supported by energy storage	5966	11:00
2	Abolfazl Baghbani, Firas Daghistani, Hasan Baghbani and	Predicting the Strength of Recycled Glass Powder-based Geopolymers for Improving Mechanical	7194	11:15
3	Valmik Mahajan and Amit Sharma (India)	On the deformation of layered composite arches using exponential shear and normal	7958	11:30
4	Grit Ngowtanasuwan (Thailand)	Confirmatory Factor Analysis of Service Quality of Thai Small-Medium Enterprise Contractors in	5951	11:45
5	Omar Elmeligy, Belal Abdelrahman and Khaled Galal (Canada)	Seismic Performance Of Flanged Flexural-Dominated Partially Grouted Reinforced Masonry	2316	12:00
6	MajdAlyami, Fatima Alshakwan, FahdahAlsaoud and	Design of Sustainable Medical College and Smart Parking in Al-Aziziya	1199	12:15
7	Omar Al-Yahya, Ahmed Al Rumaih, Ali Alkhatem, Awab Hassan	Sustainable & Eco-Friendly Wastewater Treatment Plant (WWTP) in the "The Line", NEOM	7472	12:30
8	Maryam Alnajrani, Rayan Alawami, ShahdAlkhabaz,	Sustainable Re-design of 32 km Section at Abu-Hadria Highway	5891	12:45
9	RajawiAljamaan, SitaAnoaimo, MohraAlhababi and	Design of Sustainable Students Residence Building nearby PMU Medical School	3512	13:00