

## DAY 1: Tuesday 10 June - Opening Ceremony

**09.30-10.00** [Building Kjølv Egeland's \(ground floor\)](#) - Registration

**10.00-10.30** [Room "KE E-101"](#) - Opening of the 2<sup>nd</sup> Olympiad in Engineering Science by

**Klaus Mohn, Rector of the University of Stavanger**

**Merete Madland, Vice-Rector for Research, University of Stavanger**

**10.30-11.00** [Room "KE E-101"](#) - Welcome by the members of the International Olympiad Committee:

**Prof. Dimitrios Pavlou**, University of Stavanger, Norway, (Chairman of the committee)

**Prof. Hojjat Adeli**, Ohio State University, USA, (Honorary chairman of the committee)

**Prof. Niels Deen**, Eindhoven University of Technology, The Netherlands


**Prof. Anatoly Zagorodny**, President National Academy of Sciences of Ukraine

**Prof. Juan Manuel Corchado**, Rector / Professor, University of Salamanca, Spain

**11.00-11.45** [Room "KE E-101"](#) - **Opening Keynote Speech:**

**Professor Hojjat Adeli:** "Machine Learning: Innovations, Societal Impact, and Pitfalls"

**12.00-14.00** [Welcome Reception: Standing cocktail including meal package.](#)

**14.00-15.00** [Room "KE E-101"](#) **Special Session**  **HEXAGON**

**14.00-14.30 Erik Josefssons** (R-Evolution part of Hexagon): Computational Engineering can save our planet!

**14.30-15.00 Yanni Pappás** (Hexagon): The Role of Asset Performance Management in Navigating Big Data Complexities

## **DAY 2: Wednesday 11 June – “Archimedes Medal Award”, and Sessions 1-9**

**9.30-10.00**      [Room “KE E-102”](#) - “Archimedes Medal Award”

**10.00-10.30**      Coffee Break

**10.30-12.30**      Three parallel sessions 1-3

## Session 1-Room “KE E-101”: Machine Learning I

ID		Session Chairs: Sudath C Siriwardane
10:30-10:50	2	<p><a href="#">Evaluation of an AI-EEG based Photo-Paroxysmal Response solution on healthy subjects: when false positive really matters</a></p> <p><b>Authors:</b> Ana Isabel Gómez-Menéndez (Burgos University Hospital) Marcos Ornia (University of Oviedo) Moncada Martins Fernando (Computer Science Dpt., University of Oviedo) Víctor Gonzalez (Automation Dpt., University of Oviedo ) José R. Villar (Computer Science Dpt., University of Oviedo) Gutierrez María Antonia (Cabueñes Hospital) Calvo Calleja Pablo (Cabueñes Hospital) Urdiales Sánchez Sara (Cabueñes Hospital) Díaz Pérez Ricardo (Cabueñes Hospital) Dalla-Porta Acosta Aline (Cabueñes Hospital) Beatriz García-López (Burgos University Hospital)</p> <p><b>Speaker:</b> José R. Villar (Computer Science Dpt., University of Oviedo)</p>
10:50-11:10	131	<p><b>Numerical Investigation of Temperature Effects on MEMS and Mitigation by Unsupervised Learning</b></p> <p><b>Alireza Entezami</b></p> <p>Department of Civil and Environmental Engineering, Politecnico di Milano, Milan, Italy</p>
11:10-11:30	7	<p><a href="#">Intelligent Analysis of Software Team Performance: An Agentic Approach Using Time-Delta Metrics and Qualitative Insights</a></p> <p><b>Authors/Speakers:</b> Vincil Bishop (Colorado State University) Lucas Krause (Colorado State University)</p>
11:30-11:50	8	<p><a href="#">Predictive Method for Track Quality Index Based on Multi-Scale Causal Convolutional Neural Networks</a></p> <p><b>Authors:</b> Xiaolin Li (Beijing Jiaotong University) Yuanjie Tang (Beijing Jiaotong University) Lifen Yuan (Beijing Jiaotong University) Yong Zhuang (Beijing Jiaotong University)</p> <p><b>Speaker:</b> Xiaolin Li (Beijing Jiaotong University)</p>

## Session 2-Room “KE E-102”: Special Session on AI in Biomedical Applications I

ID	Session Chairs: Pang-jo Chun	
10:30-10:50	10	<p><u>Comparative Analysis of Deep Learning Techniques for Breast Tumor Segmentation in DW-MRI Images</u></p> <p><b>Authors:</b> Angel del Rio Alvarez (Computer Science Department, University of Oviedo) Sara Fernández Arias (Computer Science Department, University of Oviedo) Pablo García Marcos (Computer Science Department, University of Oviedo) Hector Gonez (Purdue Center for Cancer Research, Purdue University) Victor M. González (Electrical Engineering Department, University of Oviedo) Guillermo Lorenzo (Health Research Institute of Santiago de Compostela) Rebeca Oliveira Suárez (Electrical Engineering Department, University of Oviedo) Paula Puerta González (Electrical Engineering Department, University of Oviedo) Jose R. Villar (Computer Science Department, University of Oviedo)</p> <p><b>Speaker:</b> Pablo García Marcos (Computer Science Department, University of Oviedo)</p>
10:50-11:10	15	<p><u>Analyzing the Impact of Image Preprocessing on Tumor Detection and Classification in Mammograms</u></p> <p><b>Authors:</b> Enol García González (University of Oviedo) Madalina Dicu (Babes-Bolyai University) José R. Villar (Computer Science Dpt., University of Oviedo) Camelia Chira (Babes-Bolyai University)</p> <p><b>Speaker:</b> Enol García González (University of Oviedo)</p>
11:10-11:30	17	<p><u>Early Detection of Bipolar Disorder through fMRI Analysis employing Machine Learning Algorithms: A Comparative Study</u></p> <p><b>Authors:</b> Camelia Chira (Babes-Bolyai University) Iulia-Andreea Ion (Researcher (PhD student))</p> <p><b>Speaker:</b> Iulia-Andreea Ion (Researcher (PhD student))</p>

## Session 3-Room “KE E-166”: Structural Health Monitoring I

ID		Session Chairs: Cornelia Baera
10:30-10:50	3	<p><a href="#">Large Vision Model for Structural Damage Diagnosis</a></p> <p><b>Authors:</b>            Yang XU (Harbin Institute of Technology)            Hui LI (Harbin Institute of Technology)</p> <p><b>Speaker:</b>            Yang XU (Harbin Institute of Technology)</p>
10:50-11:10	127	<p><u>A Fully Customized Vehicle Scanning System: Field Trials on Two Large-Scale Bridges</u></p> <p>M. Makki Alamdari, A. Calderon Hurtado, J. Xu, D. Dias-da-Costa, R. Salleh</p> <ul style="list-style-type: none"> <li>- Centre for Infrastructure Engineering and Safety, School of Civil and Environmental Engineering, University of New South Wales, Sydney, NSW 2052, Australia</li> <li>- School of Civil Engineering, The University of Sydney, NSW 2006, Australia</li> <li>- School of Computer Science and Engineering, University of New South Wales, Sydney, NSW 2052, Australia</li> </ul>
11:10-11:30	139	<p><u>Statistical Indicators for Structural Damage Localiza-tion by Autoregressive-Extracted Time Series Features</u></p> <p>Ali Ramezani, Soroush Safakhah, Soheila Goli</p> <p>Department of Civil Engineering, Semnan Branch, Islamic Azad University, Semnan, Iran            Department of Civil and Environmental Engineering, Politecnico di Milano, Milan, Italy</p>
11:30-11:50	140	<p><u>Enhancement of Time Series-Based Feature Extrac-tion for Structural Health Monitoring</u></p> <p>Ali Ramezani, Soroush Safakhah, Soheila Goli</p> <p>Department of Civil Engineering, Semnan Branch, Islamic Azad University, Semnan, Iran            Department of Civil and Environmental Engineering, Politecnico di Milano, Milan, Italy</p>
11:50-12:10	28	<p><u>Extended Reality for tunnel Inspection using BIM</u></p> <p><b>Authors:</b>            Nicola Rimella (Politecnico di Torino Department of Structural, Geotechnical and Building Engineering)            Pang-jo Chun (The University of Tokyo)</p> <p><b>Speaker:</b> Nicola Rimella (Politecnico di Torino Department of Structural, Geotechnical and Building Engineering)</p>

**12.30-13.30:** Lunch in [Café Optimisten](#)

**13.30-15.30** Three parallel sessions 4-6

## Session 4- Room “KE E-101”: Machine Learning II

	ID	Session Chairs: Konstantinos Fotopoulos
13.30-13.50	24	<u>Extreme compression of LES flow data</u> <b>Authors:</b> Omar A. Mures (University of A Coruña) Miguel Cid Montoya (Clemson University) Sumit Verma (Clemson University) <b>Speaker:</b> Miguel Cid Montoya (Clemson University)
13.50-14.10	42	<u>Artificial intelligence (AI)-driven optimization of 3D printed parts using fused deposition modeling (FDM) polymer materials.</u> <b>Authors:</b> Adugna D Akessa Wakshum M Tucho (UiS) Chao Ren (UiS) <b>Speaker:</b> Chao Ren (UiS)
14.10-14.30	56	<u>Binarization of degraded documents using a hybrid model between a classical method and a deep learning approach</u> <b>Authors:</b> Milan Ćurković Andrijana Ćurković (University of Split, Faculty of Science) <b>Speaker:</b> Milan Ćurković
14.30-14.50	63	<u>A Study on Positional Embeddings for Transformer-Based Bridge Deterioration Prediction Considering Component and Damage Locations</u> <b>Authors:</b> Shogo Inadomi (The University of Tokyo) Pang-jo Chun (The University of Tokyo) <b>Speaker:</b> Shogo Inadomi (The University of Tokyo)
14.50-15.10	72	<u>Exploring the Most Effective Deep Learning Algorithm for Remaining Useful Life Forecasting: A Case Study on High-Speed Bearings in Wind Turbines</u> <b>Authors:</b> Waqar Ali (University of Stavanger) Idriss El-Thalji Knut Erik Teigen Giljarhus (University of Stavanger) Makafui Kwam Botsoe (University of Stavanger) <b>Speaker:</b> Makafui Kwam Botsoe (University of Stavanger)

## Session 5- Room “KE E-102”: Special Session on AI in Biomedical Applications II

ID		Session Chairs: Maria Tzamtzi and Cornelia Baera
13.30-13.50	31	<p><u>Finite Element Analysis of Lag Screw insertion procedure for basicervical hip fractures and simulation of robotic arm procedure</u> <b>(online speech)</b></p> <p><b>Authors:</b>  Filippos Vrontakis (Machine Design Laboratory, Department of Mechanical Engineering and Aeronautics, University of Patras)  PANTELIS NIKOLAKOPOULOS (MACHINE DESIGN LABORATORY, DEPT. OF MECHANICAL ENGINEERING AND AERONAUTICS UNIVERSITY OF PATRAS, GREECE)  Panagiotis Koustoubardis (Robotics Group, Mechanical Engineering and Aeronautics, University of Patras, Greece)  Antonios Kouzelis (Department of Orthopaedics, University Hospital of Patras, Hellas Rion, Patras GREECE)  Antonios Sakellarios (Laboratory of Biomechanics and Biomedical Engineering, Department of Mechanical Engineering and Aeronautics, University of Patras, Greece)</p> <p><b>Speaker:</b>  Filippos Vrontakis (Machine Design Laboratory, Department of Mechanical Engineering and Aeronautics, University of Patras)</p>
13:50-14:10	96	<p><u>Correlating Primary Progressive Aphasia Spanish Speakers and Cognitive Tasks through Shallow Learning and Acoustic Features eGeMAPS</u></p> <p><b>Authors:</b>  Jimuel Jr. Celeste (Computing Dpt., University of Alberta)  Mashrura Tasnim (Computing Dpt., University of Alberta)  Amable J. Valdés (Computer Science Dpt, University of Oviedo)  Elena Herrera (Psychology Department, University of Oviedo)  Eleni Stroulia (Computing Dpt., University of Alberta)  ENRIQUE ANTONIO DE LA CAL MARIN (Computer Science Dpt, UNIVERSITY OF OVIEDO)</p> <p><b>Speaker:</b>  ENRIQUE ANTONIO DE LA CAL MARIN (Computer Science Dpt, UNIVERSITY OF OVIEDO)</p>
14:10-14:30	120	<p><u>Early Alzheimer’s Detection in Norwegian via NLP and Transformer Models</u></p> <p><b>Authors:</b>  Nourin Mohammad Haider Ali Biswas (University of Stavanger)  Tahoura Morovati  Mina Farmanbar  Arezo Shakeri</p> <p><b>Speaker:</b>  Nourin Mohammad Haider Ali Biswas (University of Stavanger)</p>



## Session 6- Room “KE E-166”: Structural Health Monitoring III

	ID	Session Chairs; Christos Sakaris, Yipeng Liu
13.30-13.50	34	<p><u>Robust</u> 3D reconstruction and rut localization for asphalt pavements using multi-sensor RGB-D vision</p> <p><b>Authors:</b>  Yipeng Liu (Shandong University)  Jianqing Wu (Shandong University)  Xiuguang Song (Shandong University)  Hongbo Zhang (Shandong University)  <b>Speaker:</b> Yipeng Liu (Shandong University)</p>
13:50-14:10	124	<p><u>Cold Climate Effects on Bridge Dynamics: A Hybrid Unsupervised Learning Approach for Robust Structural Health Monitoring</u></p> <p>Soheila Goli, Alireza Entezami, Alberto Corigliano  Department of Civil and Environmental Engineering, Politecnico di Milano, Milan, Italy</p>
14:10-14:30	41	<p><u>Computer Vision-based CNN Model Automated Defect Detection in Concrete Images Taken Through Portable Cellphone Camera</u></p> <p><b>Authors:</b>  Afaq Ahmad (Oslo Met)  Mir Junaid (UET Taxila)  Vagelis Plevris  <b>Speaker:</b> Afaq Ahmad (Oslo Met)</p>
14:30-14:50	47	<p><u>Damage detection and magnitude estimation in the tower-base connection of a floating wind turbine under varying sea and wind conditions</u></p> <p><b>Authors:</b>  Christos Sakaris (Norwegian Research Centre – NORCE AS)  John Sakellariou (University of Patras)  Yang Yang (Ningbo University)  Musa Bashir (Liverpool University)  Rune Schlanbusch (Norwegian Research Centre – NORCE AS)  <b>Speaker:</b> Christos Sakaris (Norwegian Research Centre – NORCE AS)</p>
14:50-15:10	125	<p><u>Dynamic Monitoring of Bridge Structures under Seasonal Temperature Variability by Reconstruction Error-based Density Clustering for Anomaly Detection</u></p> <p>Mohammad Omid Mamaghani, Alireza Entezami, Alberto Corigliano  Department of Thermal and Fluid Engineering, University of Twente, The Netherlands  Department of Civil and Environmental Engineering, Politecnico di Milano, Milan, Italy</p>

## 15.10-15.30 Coffee Break

## 15.30-17.30 Three parallel sessions 7-9

### Session 7- Room “KE E-101”: Machine Learning III

	ID	Session Chairs; Yosef Wakjira Adugna
15.30-15.50	80	<u>A LiDAR-based 3D Human Pose Estimation Network for Worker-Robot Collaboration on Construction Sites</u> <b>Authors:</b> Yizhi Jia (The Hong Kong Polytechnic University), Jiawen Zhang, Mingyu Zhang (The Hong Kong Polytechnic University), Shuai Han (The Hong Kong Polytechnic University), Yinong Hu (The Hong Kong Polytechnic University), Lei Wang (The Hong Kong Polytechnic University) <b>Speakers:</b> Jiawen Zhang (The Hong Kong Polytechnic University), Shuai Han (The Hong Kong Polytechnic University)
15:50-16:10	138	<u>Mitigating Variability in Bridge Displacement Re-sponses through Synergistic Use of Supervised and Unsupervised Artificial Neural Networks</u> Alireza Entezami, Zheng-Han Chen, Yazhou Xie, Bahareh Behkamal, and Carlo De Michele Department of Civil and Environmental Engineering, Politecnico di Milano, Milano, Italy Mitacs, Montréal, QC, Canada Department of Civil Engineering, McGill University, Montréal, QC, H3A0C3, Canada
16:10-16:30	83	<u>DA-RF based multi-class signal recognition method for water supply pipes</u> <b>Authors:</b> Niannian Wang (zheng zhou university), kuankuan zhang (zheng zhou university) <b>Speaker:</b> kuankuan zhang (zheng zhou university)
16:30-16:50	113	<u>Role of Parietal Cortex's Alpha Wave in Numerosity</u> <b>Authors:</b> Mehran Ahmadi (Group leader), Khodabakhsh Ahmadi, Esfandiar Azad-Marzabadi, Nazila Ahmadi, Majid Rezazade <b>Speaker:</b> Mehran Ahmadi (Group leader)
16:50-17:10	122	<u>Dataset Optimisation for Enhanced Auto-mated Sewer Damage Detection</u> Kamil ALTINAY (University of Birmingham), Jelena Ninic (University of Birmingham)

## Session 8- Room “KE E-102”: Special session on Advances in 3D Data Acquisition and Processing for Civil Engineering

	ID	Session Chairs; Pang-jo Chun
15.30-15.50	54	<u>Crack detection and location registration using image and point cloud data fusion</u> <b>Authors:</b> Chao Lin (the University of Tokyo) Yu Chen (The University of Tokyo) Pang-jo Chun (The University of Tokyo) Kenta Itakura (ImVisionLabs Inc.) <b>Speaker:</b> Chao Lin (the University of Tokyo)
15:50-16:10	62	<u>Predicting structural data of bridge utilizing Large Language Models.</u> <b>Authors:</b> Shreejan Maharjan (The University of Tokyo) Pang-jo Chun (The University of Tokyo) <b>Speaker:</b> Shreejan Maharjan (The University of Tokyo)
16:10-16:30	66	<u>Multi-scale Spatial Position Encoding for Enhanced Feature Learning in Bridge Point Cloud Semantic Segmentation</u> <b>Authors:</b> Yu Chen (The University of Tokyo), Chao Lin (The University of Tokyo), Shiori Kubo (Kagawa University) Tatsuro Yamane (National Institute of Technology, Tokuyama College), Wakana Asano (Nihon University) Ichiro Iwaki (Nihon University), Pang-jo Chun (The University of Tokyo) <b>Speaker:</b> Yu Chen (The University of Tokyo)
16:30-16:50	67	<u>Automated 3D Bridge Modeling from Non-Layered Drawings Using Transformer-Based Deep Learning</u> <b>Authors:</b> Keitaro Taniguchi (National Institute of Technology, Tokuyama College) Tatsuro Yamane (National Institute of Technology, Tokuyama College) <b>Speaker:</b> Keitaro Taniguchi (National Institute of Technology, Tokuyama College)
16:50-17:10	129	<u>Satellite-Based Damage Identification by Distributed Displacement Responses from SAR Images</u> Alireza Entezami, Wen Gao, Bahareh Behkamal, Yazhou Xie, and Carlo De Michele <ul style="list-style-type: none"> <li>- Department of Civil and Environmental Engineering, Politecnico di Milano, Milano, Italy</li> <li>- Mitacs, Montréal, QC, Canada</li> <li>- Department of Civil Engineering, McGill University, Montréal, QC, H3A0C3, Canada</li> </ul>

## Session 9-Room “KE E-166”: Structural Health Monitoring IV

	ID	Session Chairs; Tiago Ferradosa
15.30-15.50	50	<u>Intelligent Infrastructure Monitoring: Applications of VLMs and LLMs in Structural Health Monitoring</u> <b>Authors:</b> Yingchao Zhang (City University of Hong Kong) Cheng Liu (City University of Hong Kong) <b>Speaker:</b> Yingchao Zhang (City University of Hong Kong)
15.50-16:10	130	<u>Experimental Investigation of Smartphone MEMS Accelerometers Under Simulated Temperature and Humidity Changes for Long-Term SHM Programs</u> Alireza Entezami Department of Civil and Environmental Engineering, Politecnico di Milano, Milan, Italy
16:10-16:30	65	<u>Assessment of Epoxy-Based Repairs in Cementitious Specimens by nondestructive evaluation techniques</u> <b>Authors:</b> Adamantis Zapis (Laboratory of Reinforced Concrete and Seismic Design of Structures, Department of Civil Engineering, School of Engineering, Democritus University of Thrace (DUTH), 67100 Xanthi, Greece) Violetta Kytinou (Vilnius Gediminas Technical University (VILNIUS TECH)) Ioannis Xynopoulos (Laboratory of Reinforced Concrete and Seismic Design of Structures, Department of Civil Engineering, School of Engineering, Democritus University of Thrace (DUTH), 67100 Xanthi, Greece) Viktor Gribniak (Vilnius Gediminas Technical University) Anastasios Mpalaskas (Laboratory of Reinforced Concrete and Seismic Design of Structures, Department of Civil Engineering, School of Engineering, Democritus University of Thrace (DUTH), 67100 Xanthi, Greece) <b>Speaker:</b> Violetta Kytinou (Vilnius Gediminas Technical University (VILNIUS TECH))
16:30-16:50	82	<u>A Study of Denoising Method of GPR Data based on Denoising Convolutional Neural Network</u> <b>Authors:</b> haobang hu, niannian wang, ziqiao gao <b>Speaker:</b> haobang hu
16:50-17:10	88	<u>Cloud-Based Strain Monitoring Using Micro Image Strain Sensing Method</u> <b>Authors:</b> Xuefeng Zhao, Bo Lu, Bingchuan Bai, Weijie Li <b>Speaker:</b> Xuefeng Zhao

## **DAY 3: Thursday 12 June – “Timoshenko Medal”, “Olympiad Medals”, and Sessions 10-16**

**9.30-9.50**    [Room “KE E-102”](#): Anatoly Zagorodny, President National Academy of Sciences of Ukraine

Title of Speech: “Stephen Timoshenko: The life and work of the father of modern mechanics”

**9.50-10.10**    [Room “KE E-102”](#): “Olympiad Medals” award to the authors of the five best papers

**10.10-10.30**    Coffee Break

**10.30-12.50**    Three parallel sessions 10-12

**Session 10-Room “KE E-101”: “Special Session in Fluid Dynamics” – Session dedicated to Professor Emeritus Bjørn Helge Hjertager**

10.30-10.50	<b>Special Speech</b>	<b>Speech dedicated to Professor Emeritus Bjørn Helge Hjertager</b> <b>Speaker: Niels Deen, Eindhoven University of Technology</b>
	<b>ID</b>	<b>Session Chairs; Knut Erik Giljarhus</b>
10:50-11:10	36	<u>How to tame bubbles in electrolysis</u> <b>Authors:</b> Niels Deen (Eindhoven University of Technology), Aled Meulenbroek (Eindhoven University of Technology) Faeze Khalighi (Eindhoven University of Technology), Bert Vreman (Eindhoven University of Technology) <b>Speaker:</b> Niels Deen (Eindhoven University of Technology)
11:10-11:30	48	<u>Viscous Fingering and Perturbation Growth Rates of Power-Law Fluids in Hele-Shaw Cells</u> <b>Authors:</b> Yao Zhang, Hans Joakim Skadsem (University of Stavanger), Knut Erik Teigen Giljarhus (University of Stavanger) Benjamin Barrouillet (Well ID AS) <b>Speaker:</b> Yao Zhang
11:30-11:50	55	<u>Gas Slip Modelling for Bullheading Applications</u> <b>Authors:</b> Farhan Rasheed (university of Stavanger), Kjell Kåre Fjelde (University of Stavanger), Magnus Fosnes Ramstad (Aker Bp), Andrianifaliana Herimonja Rabenjafimanantsoa (University of Stavanger) <b>Speaker:</b> Farhan Rasheed (university of Stavanger)
11:50-12:10	69	<u>45 YEARS OF MODELLING GAS EXPLOSIONS WITH THE PDR CONCEPT – CURRENT STATUS AND FUTURE PROSPECTS</u> <b>Authors:</b> Helene Hisker, Anand Zambare (Indian Institute of Technology Madras), Anish A. Pophale (Indian Institute of Technology Madras), Vagesh D. Narasimhamurthy (IIT Madras), Kees van Wingerden, Trygve Skjold (University of Bergen), Bjørn Arntzen, Melodia Lucas (University of Bergen and Gexcon) <b>Speaker:</b> Helene Hisker
12.10-12.30	77	<u>Numerical modelling of hydrogen deflagrations using EXSIM</u> <b>Authors:</b> Jamie Thompson (DNV), Bjørn Erling Vembe <b>Speaker:</b> Bjørn Erling Vembe

## Session 11-Room “KE E-102”: Concrete Structures

	ID	Session Chair; Konstantinos Fotopoulos
10:30-10:50	29	<p>IMPROVING THE PREDICTIONS ON CONCRETE STRENGTH VIA ULTRASONIC PULSE VELOCITY</p> <p><b>Authors:</b> Bogdan Bolborea, Aurelian Gruin (NIRD URBAN INCERC), Cornelia Baera (Politehnica University of Timisoara, NIRD URBAN INCERC Timisoara Branch,)</p> <p>Alexandra Marina Barbu (INCD URBAN-INCERC), Ana Cristina Vasile (INCD URBAN-INCERC)</p> <p><b>Speakers:</b> Bogdan Bolborea, Cornelia Baera (Politehnica University of Timisoara, NIRD URBAN INCERC Timisoara Branch,)</p>
10:50-11:10	78	<p><u>Module construction of multistory buildings in Norway-A comparative study on limitations, structural performance, cost and serviceability</u></p> <p><b>Author:</b> Marius Ree, Nirosha D Adasooriya</p> <p><b>Speaker:</b> Marius Ree</p>
11.10-11.30	128	<p><u>Structural Performance and Load-Carrying Capacity of Cross Laminated Timber-Concrete Composite Slabs: Influence of Shear Fasteners</u></p> <p>Maria Bergfjord, Sudath C. Siriwardane and Lars Henning Krokengen</p> <ul style="list-style-type: none"> <li>- Multiconsult AS, Oslo, Norway</li> <li>- University of Stavanger, 4036 Stavanger, P.O. box 8600, Norway</li> <li>- COWI AS, Trondheim, Norway</li> </ul>
11.30-11.50	106	<p><u>Simulating the behavior of planar concrete members using layered Voronoi-cell lattice models.</u></p> <p><b>Authors:</b> John Bolander (University of California, Davis), Qiwei Zhang (University of California, Davis)</p> <p><b>Speaker:</b> John Bolander (University of California, Davis)</p>
11.50-12.10	110	<p><u>Assessing the Sustainability and Reuse Potential of Prefabricated Hollow Core Slabs: A Feasibility Study</u></p> <p><b>Authors:</b> Nirosha D Adasooriya, Abhiram Sivapalakumar</p> <p><b>Speaker:</b> Abhiram Sivapalakumar</p>
12.10-12.30	112	<p><u>Non-destructive characterization of steel fiber distribution in concrete: CT-scanning vs inductive method</u></p> <p><b>Authors:</b></p> <p>Álvaro Mena-Alonso (University of Burgos (UBU))</p> <p>Guillem Rojas (Norwegian University of Science and Technology (NTNU))</p> <p>Álvaro Muñoz (Stratum Reservoir AS)</p> <p>Terje Kanstad (Norwegian University of Science and Technology (NTNU))</p> <p>Miguel A. Vicente (University of Burgos (UBU))</p> <p><b>Speaker:</b></p> <p>Álvaro Mena-Alonso (University of Burgos (UBU))</p>

## Session 12-Room “KE E-166”: Structural Health Monitoring IV

		ID	Session Chairs; Alireza Entezami and Erdem Aktosun
10:30-10:50	89	<u>Piezoelectric impedance intelligent sensing method and monitoring technology for corrosion of steel structures</u> <b>Authors:</b> Weijie Li (Dalian University of Technology), Si Yanpeng (Dalian University of Technology) Zhao Xuefeng (Dalian University of Technology), <b>Speaker:</b> Weijie Li (Dalian University of Technology)	
10:50-11:10	91	<u>New steel coupons for magnetic stress calibration (online presentation)</u> <b>Authors:</b> Eleni Aivazoglou (National TU of Athens), Spyridon Angelopoulos (National TU of Athens), Evangelos Hristoforou (National Technical University of Athens) <b>Speaker:</b> Evangelos Hristoforou (National Technical University of Athens)	
11.10-11.30	104	<u>DGN: A DWT-Guided Frequency-Spatial Dual-Domain Dehazing Network for Sewer Inspection Images</u> <b>Authors:</b> Gang Pan (Tianjin University), Zhijie Sui, Zixia Xia, Chao Kang, Di Sun <b>Speaker:</b> Gang Pan (Tianjin University)	
11.30-11.50	111	<u>Automated Damage Report Generation via Panoptic Segmentation of Ultra-High-Resolution Tunnel Images</u> <b>Authors:</b> Zehao Ye (University of Birmingham), Qi Li (Fuzhou University), Giuseppe Desiderio (Politecnico di Torino) Wenxi Liu (Fuzhou University), Jelena Ninic (University of Birmingham), Valentina Villa (Politecnico di Torino) <b>Speaker:</b> Zehao Ye (University of Birmingham)	
11.50-12.10	115	<u>Kernel-Enhanced Deep Anomaly Detection for Robust Dynamic Monitoring of Bridges under Freezing Impacts</u> <b>Authors:</b> Zheng-Han Chen (Department of Civil and Environmental Engineering, Politecnico di Milano, Milan, Italy ) Wen Gao (Department of Civil and Environmental Engineering, Politecnico di Milano, Milan, Italy ) Alireza Entezami (Department of Civil and Environmental Engineering, Politecnico di Milano, Milan, Italy) Zhao-Dong Xu (Scholar of Civil Engineering, Southeast University, Nanjing, China) Hassan Sarmadi (Department of Civil Engineering, Ferdowsi University of Mashhad, Mashhad, Iran) Bahareh Behkamal (Department of Civil and Environmental Engineering, Politecnico di Milano, Milan, Italy) <b>Speaker:</b> Alireza Entezami (Department of Civil and Environmental Engineering, Politecnico di Milano, Milan, Italy)	



**12.50-13.30:** Lunch in [Café Optimisten](#)

**13.50-15.30** Three parallel sessions 13-15

**Session 13-**[Room “KE E-101”](#): “Dynamics and vibration”

ID		Session Chairs; <b>Alireza Entezami</b> , <b>Christos Sakaris</b> ,
13:50-14:10	126	<u>Unsupervised Damage Detection in Bridges Using Outlier-Contaminated Vibration Data</u> Wen Gao, Masoud Salar, Hassan Sarmadi, and Alireza Entezami <ul style="list-style-type: none"><li>- Department of Civil and Environmental Engineering, Politecnico di Milano, Milan, Italy</li><li>- Research and Development Director, IPESFP Startup Company, Mashhad, Iran</li></ul>
14:10-14:30	27	<u>Amplification of impact loading</u> <b>Author and Speaker:</b> Ove Tobias Gudmestad (University of Stavanger, Norway)
14:30-14:50	70	<u>Performance Analysis of a Drilling System for Lunar Resource Extraction Mounted on a Lunar Exploration Rover</u> <b>Authors:</b> Heechan Jang, Young-Jun Lee (Inha University), Joo-Hyung Kim (Inha University) <b>Speaker:</b> Heechan Jang
14:50-15:10	100	<u>A cantilever beam in mass impacting metamaterial for effective vibration control</u> <b>Authors:</b> Muskaan Sethi (Indian Institute of Technology, Delhi), Arnab Banerjee (Indian Institute of Technology, Delhi) Bappaditya Manna (Indian Institute of Technology, Delhi) <b>Speaker:</b> Muskaan Sethi (Indian Institute of Technology, Delhi)
15.10-15.30	58	<u>PSHA incorporating near-fault effects for a soil site with embedded lava layers in South Iceland</u> <b>Authors:</b> Victor Moises Hernandez Aguirre (Earthquake Engineering Research Center - University of Iceland) Rajesh Rupakhety (Earthquake Engineering Research Center - University of Iceland) <b>Speaker:</b> Victor Moises Hernandez Aguirre (Earthquake Engineering Research Center - University of Iceland)

## Session 14-Room “KE E-102”: Fatigue and Structural Integrity

	ID	Session Chairs; Pang-jo Chun and Alireza Entezami
13.30-13.50	37	<p><u>Structural Integrity Issues at Repurposing Gas Pipelines for Hydrogen Service</u></p> <p><b>Authors:</b> Viacheslav BOGDANOV (S.P. Timoshenko Institute of Mechanics of the NAS of Ukraine)  Zinoviy NAZARCHUK (Karpenko Physico-Mechanical Institute of the NAS of Ukraine)  Olha ZVIRKO (Karpenko Physico-Mechanical Institute of the National Academy of Sciences of Ukraine)  <b>Speaker:</b> Olha ZVIRKO (Karpenko Physico-Mechanical Institute of the National Academy of Sciences of Ukraine)</p>
13.50-14.10	133	<p><u>Hybrid Clustering-Based Anomaly Detection for Damage Detection in Civil Structures Subjected to Environmental Changes</u></p> <p>Mohammad Omid Mamaghani, Alireza Entezami, Alberto Corigliano</p> <ul style="list-style-type: none"> <li>- Department of Thermal and Fluid Engineering, University of Twente, The Netherlands</li> <li>- Department of Civil and Environmental Engineering, Politecnico di Milano, Milan, Italy</li> </ul>
14.10-14.30	71	<p><u>Wind induced fatigue of flare booms: Evaluation of different methods and software alternatives</u></p> <p><b>Authors:</b> Nikolas Bentzen, Ahmed Adel Mohamed Radwan, Gunnar Gjerde, Ivar Holta, Sudath C Siriwardane (University of Stavanger)  <b>Speakers:</b> Nikolas Bentzen, Ahmed Adel Mohamed Radwan</p>
14.30-14.50	73	<p><u>Effect of Hydrogen Embrittlement on Structural Integrity of High Strength Steel - A State-of-the-art Review</u></p> <p><b>Authors:</b> Pasindu Erange Yaddehi Guruge  Nirosha D Adasooriya, Vidar Hansen (Department of Mechanical and Structural Engineering and Materials Science, University of Stavanger)  <b>Speaker:</b> Pasindu Erange Yaddehi Guruge</p>
14.50-15.10	79	<p><u>Evaluation of specimen geometry for accurate fatigue testing of girth welds fabricated at close proximity using numerical modelling</u></p> <p><b>Authors:</b> Even Englund, R. M. Chandima Ratnayake  <b>Speaker:</b> Even Englund</p>
15.10-15.30	84	<p><u>A numerical methodology for predicting damage in composite cryogenic hydrogen storage tanks</u></p> <p><b>Authors:</b> Konstantinos Fotopoulos (Mechanical Engineering &amp; Aeronautics Department, University of Patras),  George Lampeas (Mechanical Engineering &amp; Aeronautics Department, University of Patras)  <b>Speaker:</b> Konstantinos Fotopoulos (Mechanical Engineering &amp; Aeronautics Department, University of Patras)</p>

## Session 15-Room “KE E-166”: Structural Health Monitoring IV

	ID	Session Chairs; Pantelis Nikolakopoulos and Sudath Siriwardane
13.30-13.50	116	<p><u>A Novel Tree-Based Hybrid Kernelized Regressor for Predicting Modal Frequencies of Timber Buildings using Insufficient and Irrelevant Data</u>  <b>Authors:</b> Alireza Entezami (Politecnico di Milano, Milan, Italy), Carmen Amaddeo (Linnaeus University, 35251 Växjö, Sweden), Michael Dorn (Linnaeus University, 35251 Växjö, Sweden ), Maria Pina Limongelli (Politecnico Di Milano, Italy ), Luca Martinelli (Politecnico Di Milano, Italy )  <b>Speaker:</b> Alireza Entezami (Department of Civil and Environmental Engineering, Politecnico di Milano, Milan, Italy)</p>
13:50-14:10	117	<p><u>A Novel Data-Augmented Deep Learning Framework for Predicting Wind-Induced Vibrations in Long-Span Bridges under Small Sample Conditions</u>  <b>Authors:</b> Zheng-Han Chen (Politecnico di Milano, Milan, Italy), Wen Gao (Politecnico di Milano, Milan, Italy ), Alireza Entezami (Politecnico di Milano, Milan, Italy), Zhao-Dong Xu (Southeast University, Nanjing, China), Hassan Sarmadi (Ferdowsi University of Mashhad, Mashhad, Iran), Bahareh Behkamal (Politecnico di Milano, Milan, Italy)  <b>Speaker:</b> Alireza Entezami (Department of Civil and Environmental Engineering, Politecnico di Milano, Milan, Italy)</p>
14:10-14:30	118	<p><u>Unsupervised Bridge Anomaly Detection under Environmental Variability Using GAN-Enhanced Adaptive Affinity Propagation</u>  <b>Authors:</b> Bahareh Behkamal (Politecnico di Milano, Milan, Italy), Zheng-Han Chen (Politecnico di Milano, Milan, Italy ), Alireza Entezami (Politecnico di Milano, Milan, Italy), Wen Gao (Politecnico di Milano, Milan, Italy), Hassan Sarmadi (Ferdowsi University of Mashhad, Mashhad, Iran)  <b>Speaker:</b> Wen Gao (Department of Civil and Environmental Engineering, Politecnico di Milano, Milan, Italy)</p>
14:30-14:50	119	<p><u>Advanced Learning Techniques for Predicting Dynamic Responses by Neural Networks: Application to a Long-Span Bridge</u>  <b>Authors:</b> Ataollah Sadri Rad, Faeze Arami Shourabi (Department of Civil and Environmental Engineering, Politecnico di Milano, Milan, Italy), Hassan Sarmadi (Department of Civil Engineering, Ferdowsi University of Mashhad, Mashhad, Iran)  Alireza Entezami (Department of Civil and Environmental Engineering, Politecnico di Milano, Milan, Italy), Bahareh Behkamal (Department of Civil and Environmental Engineering, Politecnico di Milano, Milan, Italy )  <b>Speaker:</b> Ataollah Sadri Rad</p>
14:50-15:10	121	<p><u>An Unsupervised Hybrid Clustering Framework for Early Structural Damage Detection under Environmental Variations and Limited Monitoring Data</u>  <b>Authors:</b> Seyed Mojtaba Shapourian (Department of Civil and Environmental Engineering, Politecnico di Milano, Milan, Italy), Ataollah Sadri Rad Hassan Sarmadi (Department of Civil Engineering, Ferdowsi University of Mashhad, Mashhad, Iran), Alireza Entezami (Department of Civil and Environmental Engineering, Politecnico di Milano, Milan, Italy)  Bahareh Behkamal (Department of Civil and Environmental Engineering, Politecnico di Milano, Milan, Italy)  <b>Speaker:</b> Ataollah Sadri Rad</p>
15.10-15.30	123	<p>Structural Integrity of Flange Connection in Onshore Wind Turbine Towers  <b>Authors:</b> Elin Herredsvela (University of Stavanger, Student), Stig Roar Lyse Rødne (University of Stavanger, Student)  <b>Speakers:</b> Elin Herredsvela (University of Stavanger, Student)  Stig Roar Lyse Rødne (University of Stavanger, Student)</p>

**15.30-16.00 Coffee Break**

**16.00-17.40 Two parallel sessions 16-17**

**Session 16-Room “KE E-101”: Marine Technology**

ID	Session Chairs; Violetta Kytinou
16.00-16.20	9 <u>Modeling of Air-Fuel Mixture Flow in a Marine Four-Stroke Diesel Engine to Optimize Performance and Minimize Pollutant Emissions</u> <b>Authors:</b> Antonios Gavalas (University of Patras), Pantelis Nikolakopoulos (University of Patras) <b>Speaker:</b> Antonios Gavalas (University of Patras)
16.20-16.40	45 <u>Scour protection for offshore wind turbines co-located with aquaculture</u> <b>Authors:</b> Filipe Miranda (University of Porto), Tiago Fazerres-Ferradosa (University of Porto), Paulo Rosa-Santos (University of Porto), Francisco Taveira-Pinto (University of Porto) <b>Speaker:</b> Filipe Miranda (University of Porto)
16.40-17.00	43 HYBRID APPROACHES FOR PREDICTING NONLINEAR HYDRODYNAMIC FORCES IN HIGH-AMPLITUDE 2-DOF FORCED MOTION EXPERIMENTS <b>Authors:</b> Erdem Aktosun (Izmir Katip Celebi University), Nikolaos Xiros (University of New Orleans) <b>Speaker:</b> Erdem Aktosun (Izmir Katip Celebi University)
17.00-17.20	86 <u>Design and Modeling of Living Breakwaters: Integrating Hydrodynamic and Structural Analysis for Sustainable Coastal Protection</u> <b>Authors:</b> Konstantinos Fotopoulos (Department of Mechanical and Structural Engineering and Materials Science, University of Stavanger), Ioannis Kazakis (Department of Mechanical and Structural Engineering and Materials Science, University of Stavanger) Dimitrios Pavlou (Department of Mechanical and Structural Engineering and Materials Science, University of Stavanger) Sudath Siriwardane (Department of Mechanical and Structural Engineering and Materials Science, University of Stavanger) <b>Speaker:</b> Konstantinos Fotopoulos (Department of Mechanical and Structural Engineering and Materials Science, University of Stavanger)
17.20-17.40	94 <u>Direct production of hydrogen from seawater</u> <b>Authors:</b> Athanasia Chousou (National TU of Athens), Emmanouela Mangiorou (National TU of Athens) Evangelos Hristoforou (National Technical University of Athens) <b>Speaker:</b> Evangelos Hristoforou (National Technical University of Athens)

## Session 17-Room “KE E-102”: Materials Engineering - Additive Manufacturing I

ID		Session Chairs; Feng Guo and Nirosha Adasooriya
16.00-16.20	12	<u>Developing a Structurally Efficient Lattice Polymeric Core for Lightweight Hybrid Composite Profiles</u> <b>Authors:</b> Viktor Gribniak (Vilnius Gediminas Technical University), Ieva Misiūnaitė (Vilnius Gediminas Technical University) Arvydas Rimkus (Vilnius Gediminas Technical University) <b>Speaker:</b> Viktor Gribniak (Vilnius Gediminas Technical University)
16.20-16.40	13	<u>Laser Powder Bed Fusion of Cobalt-Chromium-Iron-Molybdenum alloy: Effect of Process Parameters on the Microstructure and Texture</u> <b>Authors:</b> Dena Khazeni (Department of Mechanical and Structural Engineering and Materials Science, University of Stavanger) Navid Sayyar (Department of Mechanical and Structural Engineering and Materials Science, University of Stavanger) Vidar Hansen (Department of Mechanical and Structural Engineering and Materials Science, University of Stavanger) <b>Speakers:</b> Dena Khazeni (Department of Mechanical and Structural Engineering and Materials Science, University of Stavanger) Navid Sayyar (Department of Mechanical and Structural Engineering and Materials Science, University of Stavanger)
16.40-17.00	75	<u>An experimental study on the material behavior of Polylactic Acid (PLA) blended with macro fibrillated cellulose (MFCs) for potential 4D printing applications</u> <b>Authors:</b> Yosef Wakjira Adugna (University Of Stavanger), Cristian Mauricio Garcia Medrano (UiS), Hirpa Lemu (University of Stavanger, Norway) <b>Speaker:</b> Yosef Wakjira Adugna (University Of Stavanger)
17.00-17.20	51	<u>Thermo-Mechanical Simulation of Material Extrusion-Based Additive Manufacturing Process</u> <b>Authors:</b> Mahmoud M. Farh (Vilnius Gediminas Technical University), Viktor Gribniak (Vilnius Gediminas Technical University) <b>Speaker:</b> Viktor Gribniak (Vilnius Gediminas Technical University)
17.20-17.40	136	<u>Low-Carbon Composite Mortar with high Cement Replacement Ratios Using Volcanic Pozzolan and Silicon Manganese Slag</u> Dileepa Hettiarachchi, Albert Gomez Meldahl, S.M Samindi M.K Samarakoon and Hassan Sharif Isaq Sharif Omar Department of Structural and Mechanical Engineering and Materials Science, University of Stavanger, Norway

**18.30-21.00**      **Conference Banquet, Sola Strand (bus transportation)**

## DAY 4: Friday 13 June

### 10.00-12.00 Session 18

#### Session 18-Room “KE E-101”: Asset Integrity Management I

	ID	Session Chairs; Jan Frick and Heechan Jang
10.00-10.20	18	<u>Modelling Reliability Centered Maintenance Program using Agent-based Simulation: A Case Study</u> <b>Authors:</b> Nader Tayebi, Idriss El-Thalji <b>Speaker:</b> Nader Tayebi
10.20-10.40	21	<u>Modelling System Availability under Series Configuration with Implicit Temporary Redundancy: Agent-based Simulation Approach</u> <b>Authors:</b> Yasmine Khattab (University of Stavanger), Idriss El-Thalji <b>Speakers:</b> Yasmine Khattab (University of Stavanger), Idriss El-Thalji
10.40-11.00	22	<u>Modelling System Availability of Unmanned Platform under Fixed Maintenance Intervals: Agent based Simulation Approach</u> <b>Authors:</b> Idriss El-Thalji (University of Stavanger), Taofik Sanusi (University of Stavanger) <b>Speakers:</b> Idriss El-Thalji (University of Stavanger), Taofik Sanusi (University of Stavanger)
11.00-11.20	74	<u>The Effect of the Technical Level on Availability Analysis: Comparison Case Study at Equipment and Component Levels.</u> <b>Authors:</b> Makafui Kwame Botsoe, Idriss El-Thalji <b>Speakers:</b> Idriss El-Thalji, Makafui Kwame Botsoe
11.20-11.40	39	<u>Integrating steel furnace slags (SFS) waste as aggregate substitution in cement-based materials and products for the construction industry,</u> <b>Authors:</b> Cornelia Baeră, Ana-Cristina Vasile, Aurelian Gruin, Bogdan Bolborea, Alexandru Ion <b>N.I.R.D. URBAN-INCERC, Timisoara Branch, Romania</b>
11.40-12.00	33	<u>Carlo Scarpa restorative concept applied to the pavement located in the piazza of Siena (Italy): a case study / a sustainable approach,</u> <b>Authors:</b> Luiza Varga, Cornelia Baeră, Aurelian Gruin, Bogdan Tofan, Tommaso Venturini <b>N.I.R.D. URBAN-INCERC, Timisoara Branch, Romania</b>

**12.00-13.00** Lunch in [Café Optimisten](#)

**13.00-15.00** Three parallel sessions 19-21

**Session 19-[Room “KE E-101”](#): Asset Integrity Management II, and Industrial Symbiosis**

	ID	Session Chairs; Alireza Entezami and <b>Selamawit Mamo Fufa</b>
13.00-13.20	26	<u>Repurposing ship steel for construction – challenges and the way forward</u> Authors: Selamawit Mamo Fufa Marianne Wiik (SINTEF Community) James Kallaos (SINTEF Community) Speakers: Selamawit Mamo Fufa (SINTEF Community)
13.20-13.40	40	<u>Integrating AI, Digitalization, and the European Product Passport for Sustainable Trade and Circular Economy</u> Author and Speaker: Jan Frick (University of Stavanger)
13.40-14.00	59	<u>Visual Programming Language for hydropower plants Facility Management</u> <b>Authors and Speakers:</b> Francesco Loddo (Politecnico di Torino) Anna Osello (Politecnico di Torino)
14.00-14.20	105	<u>Smart Digital Twin for Technical Safety Assessment and Asset Integrity Assurance: Categorizing Degree of Autonomation for Reducing Human Cognitive Fatigue</u> <b>Authors and Speakers:</b> Eleojo Samuel Ocheni and Ratnayake Chandima Ratnayake, University of Stavanger
14.20-14.40	134	<u>A statistical comparative analysis of fire resistance of reinforced concrete (RC) and concrete filled steel tubular (CFST) columns using deep learning</u> Muhammad Noman, Afaq Ahmed, Muhammad Salman, Muhammad Faizan - Civil and Coastal Engineering Department, University of Florida, Gainesville, USA. - Civil engineering department, Oslo Metropolitan University, Norway. - UET Taxila, Pakistan.
11.40-12.00	30	<u>Comprehensive study on Romanian Spent Garnet wastes as sand substitution in cementitious materials – an overview, Authors: Cornelia Baeră, Aurelian Gruin, Bogdan Bolborea, Ana-Cristina Vasile, Luiza Varga, Alexandra Marina Barbu; N.I.R.D. URBAN-INCERC, Timisoara Branch, Romania</u>

## Session 20-Room “KE E-102”: Structural Engineering

ID		Session Chairs; Alireza Entezami and Violetta Kytinou
13.00-13.20	132	<p><u>A Numerical Investigation into Freezing Impacts on Dynamic Behavior of Bridges</u>            Mohammad Omid Mamaghani, Alireza Entezami, Alberto Corigliano</p> <ul style="list-style-type: none"> <li>- Department of Thermal and Fluid Engineering, University of Twente, Drienerlolaan 5, 7522 NB Enschede, The Netherlands</li> <li>- Department of Civil and Environmental Engineering, Politecnico di Milano, Milan, Italy</li> </ul>
13.20-13.40	135	<p><u>Crack detection in structural elements using Haralick Features</u>            Arif Zafar, Mati ullah, Afaq Ahmad,</p> <ul style="list-style-type: none"> <li>- Department of Electrical Engineering, University of Engineering and Technology Taxila, Pakistan</li> <li>- Department of Civil and Environmental Engineering, Qatar University, Qatar</li> <li>- Department of Built Environment, Oslo Metropolitan University, Oslo, Norway</li> </ul>
13.40-14.00	103	<p><u>A versatile semi-Analytical micromechanical modelling of elasticity of cementitious composites</u>  <b>Authors:</b> Amit Kumar (Indian Institute of Technology, Delhi), Shashank Bishnoi (Indian Institute of Technology, Delhi)  <b>Speaker:</b> Amit Kumar (Indian Institute of Technology, Delhi)</p>
14.00-14.20	35	<p><b>Influence of high-volume cement replacement with silicon manganese slag on autogenous and drying shrinkage of composite mortar</b>  <b>Authors:</b> Dileepa Hettiarachchi (Department of Structural and Mechanical Engineering and Material science, University of Stavanger, Norway), S.M Samindi M.K. Samarakoon (Department of Structural and Mechanical Engineering and Material science, University of Stavanger, Norway), Kjell Tore Fosså (Department of Structural and Mechanical Engineering and Material science, University of Stavanger, Norway. )  <b>Speaker:</b> Dileepa Hettiarachchi (University of Stavanger, Norway)</p>
14.20-14.40	90	<p>Performance Assessment of EPS and XPS Waste in Cement Composites for Sustainable Construction Applications  <b>Authors:</b> Adamantis Zaprís (Democritus University of Thrace (DUTH), Greece), Violetta Kytinou (Vilnius Gediminas Technical University (VILNIUS TECH)), Ioannis Xynopoulos (DUTH, Greece), Viktor Gribniak (Vilnius Gediminas Technical University)  <b>Speaker:</b> Violetta Kytinou (Vilnius Gediminas Technical University (VILNIUS TECH))</p>



## Session 21-Room “KE E-166”: Special Session in Robotics Automatic Control and Electronic Sensors I

	ID	Session Chairs; Maria Tzamtzi and Amit Kumar
13.00-13.20	44	<p><u>DEVELOPMENT OF DYNAMICAL MODELS FOR GUIDANCE AND CONTROL OF OCEAN VEHICLES</u></p> <p><b>Authors:</b> Nikolaos Xiros (University of New Orleans), Miguel Trejos (University of New Orleans) Erdem Aktosun (Izmir Katip Celebi University)</p> <p><b>Speaker:</b> Erdem Aktosun (Izmir Katip Celebi University)</p>
13.20-13.40	98	<p><u>Supervisor Control in the presence of Actuator and Sensor Faults for a Water Distribution Network</u></p> <p><b>Authors:</b> Dimitrios Fragkoulis (Robotics, Automatic Control and Cyber-Physical Systems Laboratory, Department of Digital Industry Technologies, National &amp; Kapodistrian University of Athens) Fotis Koumboulis (Robotics, Automatic Control and Cyber-Physical Systems Laboratory, Department of Digital Industry Technologies, National &amp; Kapodistrian University of Athens) Nikolaos Kouvakas (Robotics, Automatic Control and Cyber-Physical Systems Laboratory, Department of Digital Industry Technologies, National &amp; Kapodistrian University of Athens) Maria Tzamtzi (Robotics, Automatic Control and Cyber-Physical Systems Laboratory, Department of Digital Industry Technologies, National &amp; Kapodistrian University of Athens)</p> <p><b>Speaker:</b> Maria Tzamtzi (Robotics, Automatic Control and Cyber-Physical Systems Laboratory, Department of Digital Industry Technologies, National &amp; Kapodistrian University of Athens)</p>
13.40-14.00	99	<p><u>Toward Design of Chlorine Soft Sensors via Stepwise Safe Switching Observers for a Primary Water Distribution Network</u></p> <p><b>Authors:</b> Fotis Koumboulis (Robotics, Automatic Control and Cyber-Physical Systems Laboratory, Department of Digital Industry Technologies, National &amp; Kapodistrian University of Athens) Nikolaos Kouvakas (Robotics, Automatic Control and Cyber-Physical Systems Laboratory, Department of Digital Industry Technologies, National &amp; Kapodistrian University of Athens) Dimitrios Fragkoulis (Robotics, Automatic Control and Cyber-Physical Systems Laboratory, Department of Digital Industry Technologies, National &amp; Kapodistrian University of Athens) Maria Tzamtzi (Robotics, Automatic Control and Cyber-Physical Systems Laboratory, Department of Digital Industry Technologies, National &amp; Kapodistrian University of Athens)</p> <p><b>Speaker:</b> Maria Tzamtzi (Robotics, Automatic Control and Cyber-Physical Systems Laboratory, Department of Digital Industry Technologies, National &amp; Kapodistrian University of Athens)</p>
14.00-14.20	102	<p><u>Design for Extremes: How can we respond before, during, and after an extreme event?</u></p> <p><b>Author:</b> Mariantonieta Gutierrez Soto (Penn State)</p> <p><b>Speaker:</b> Mariantonieta Gutierrez Soto (Penn State)</p>

**Coffee Break: 15.00-15.30**

**15.30-17.00      Session 22**

**Session 22-Room “KE E-102”: Special Session in Robotics Automatic Control and Electronic Sensors II**

		ID	Session Chairs; Nirosha Adasooriya, and Zehao Ye
15.30-15.50	60	<u>Autonomous Drone-based System for Precision, Non-contact Surface Finishing in Construction</u> <b>Authors:</b> Tianyu Ren, Xiayu Zhao, Houtan Jebelli <b>Speaker:</b> Tianyu Ren	
15.50-16.10	61	<u>A pneumatic, sensor-equipped hexapod landing gear and gripper system for gentle drone contact with building envelopes and energy assets</u> <b>Authors:</b> Xiayu Zhao, Tianyu Ren, Houtan Jebelli <b>Speaker:</b> Xiayu Zhao	
16.10-16.30	137	<u>Forecasting Torsional Responses of Suspension Bridges Subjected to Strong Wind Conditions: Dual Applications of Random Forests</u> Seyedsheil Kashfi, Ataollah Sadri Rad, Alireza Entezami, Alberto Corigliano Department of Civil and Environmental Engineering, Politecnico di Milano, Milan, Italy	
16.30-16.50	92	<u>A new portable fluorescence-absorbance-scattering spectrometer</u> <b>Authors:</b> Eleftheria Maliaritsi (National TU of Athens), George Violakis (National TU of Athens), Evangelos Hristoforou (National Technical University of Athens) <b>Speaker:</b> Evangelos Hristoforou (National Technical University of Athens)	

**Coffee Break: 16.30-17.00**

**17.00-17.30** Closing Ceremony, [Room “KE E-101”](#)

**Mona Minde,** Head of the department of Mechanical and Structural Engineering and Materials Science, University of Stavanger, and  
**Dimitrios Pavlou,** OES2025 chairman

## **DAY 5: Saturday 14 June**

**10.00-12.00** Building Kjølvs Egelands (ground floor- meeting in the entrance [“Inngang Vest”](#) at 10.00-10.05):

**Round Tables for Networking, Collaborations, and Synergies**