

23-24 June 2025, London

ASRANet

London Croydon Aerodrome Hotel, London, Croydon, UK

6th International Conference on
Health Monitoring of Civil &
Maritime Structures
HeaMES 2025
Conference Program



GeoSIG
swiss made to measure



DEWESoft[®]
measurement innovation

06-03-2025

ASRANet

About the Conference

There is an urgent need for further progress in structural health monitoring (SHM) for both civil and maritime structures. Maximising the availability and productivity of onshore and offshore infrastructure and marine vessels, whilst operating them safely and with minimal impact on the environment, is of major concern to operators. Many such structures are unique, e.g. ships such as FPSOs have specific constraints, loading characteristics and damage consequences that make them different to other offshore installations and conventional ships, and often more challenging to maintain and operate. Market research shows that there is a need for efficient SHM which could facilitate structural, fatigue and corrosion analyses and underpin risk based inspections to address the structural integrity of onshore and offshore structures. Radical developments in the telecommunication, sensor and data processing technologies are transforming the way that asset management is conceived and carried out. Sensors and structural health monitoring systems are increasingly becoming an integral part of new and existing buildings, bridges, offshore structures and installations, and vessels. Sensing arrays can be permanently connected to distributed management networks so that owners, users, and in general, all those involved in the management process and connected via the Internet can query in real time condition and performance during construction and operation. Whereas today the structural engineer conceives the single building or bridge as a stand-alone project, in future it is likely that structures will be regarded as nodes of a complex infrastructure network. Design specifications, real-time operation, and any decision on maintenance, upgrading and reconstruction of the single node will reflect the management policy of the whole system, properly accounting for concepts such as cost, risk and sustainability and structural health monitoring will play a critical role in these transformed approaches. HeaMES 2025 provides an ideal platform for innovative industry and practitioners, leading researchers, technology developers, and supply chain partners to meet. Bringing the pioneering experts together, the conference aims to promote exchange of ideas.

CONFERENCE THEMES

- Performance and condition monitoring
- Quantitative SHM-based reliability, safety and performance assessment
- Modelling and dealing with uncertainty in SHM data
- Economic analysis of SHM strategies and benefits
- Management of structures exceeding design life
- Damage control, repair and strengthening
- Damage detection
- Modelling of operational and environmental influences
- Digital twin/SHM integration
- SHM-based design
- Validation and certification
- Design guidelines and codes
- Signal processing
- Big data in SHM
- Real time monitoring
- Standardization of SHM systems
- Sensors and actuators for infrastructure instrumentation
- Sensor networks
- Remote monitoring systems
- Global system integration
- Smart structures and materials
- Field applications and case studies
- Critical issues in SHM
- Visionary, disruptive and transformational concepts

Organising Committee

Professor (redt.) Purnendu Das, *ASRANet Ltd, UK*

Dr Piotr Omenzetter, *University of Aberdeen, UK*

Prof Ying Wang, *Harbin Institute of Technology, China*

Technical Advisory Panel

Prof Dimitrios Aggelis, Vrije Universiteit Brussel, Belgium

Prof Tommy Chan, Queensland University of Technology, Australia

Prof Eleni Chatzi ETH Zurich, Switzerland

Prof. Hua Peng Chen, University of Greenwich, UK

Prof Matthew DeJong, University of California, USA

Prof Monsséf Drissi-Habti, University Gustave Eiffel, France

Prof Michael Faber, Lusofona University, Portugal

Prof Eloi J.F. Figueiredo, Lusofona University, Portugal

Prof Dora Foti Politecnico di Bari, Italy

Dr Reza Ghadim, GeoSIG, Switzerland

Dr David Garcia Cava, University of Edinburgh, UK

Prof Yuanfeng Duan, Zhejiang University China

Prof Carmelo Gentile, Politecnico di Milano, Italy

Prof Nenad Gucunski, Rutgers University, USA

Dr Donya Hajjalizadeh, University of Surrey, UK

Prof. Tian-Li Huang, Central South University, China

Mr. John Huxtable, DEWESoft, UK

Dr Abhishek Kundu, Cardiff University, UK

Prof Jun Li, Curtin University, Australia

Prof Maria Giuseppina Limongelli, Politecnico di Milano, Italy

Prof Kenneth Loh, University of California, San Diego, USA

Prof Yong Lu University of Edinburgh, UK

Dr Christian Meinhardt, GERB Vibration Contro,Germany

Dr Andy Nguyen , University of Southern Queensland, Australia

Prof Daniel V. Oliveira, University of Minho, Portugal

Dr Joshua Omer, Kingston University, UK

Dr Pooria Pahlavan , Delft University of Technology, Netherlands

Prof Jeom-Kee Paik, University College London, UK

Dr Carlo Rainieri, National Research Council of Italy, Italy

Prof Sudath C. Siriwardane, University of Stavanger, Norway

Prof Gangbing Song, University of Houston, USA

Prof Ying Wang, Harbin Institute of Technology, China

Prof Xiaojun Wei, Central South University, China

Dr Rongxin Zhou, Hefei University of Technology, China

Prof Daniele Zonta, University of Trento, Italy

CONFERENCE PROGRAMME DAY ONE: 23rd JUNE 2025

08:15 Registration

08:50-09:00 Welcome: Mr. John Huxtable, Business Development, Structural Health Monitoring
Dewesoft UK Ltd

Chairs:

09:00-09:25 Keynote Lecture “*Potentials and Challenges in Integrity Management of Offshore Wind Turbine Systems*”

Prof. Michael Havro Faber, Lusofona University, Lisbon Portugal & NIRAS, Copenhagen, Denmark

09:25-09:50 Keynote Lecture “*Smart composites for offshore applications instrumented by distributed fiber-optic sensors under quasi-static and fatigue loading*”

Prof. Monssef Drissi-Habti, French Institute of Transport, France

09:50-10:15 Keynote Lecture “*Multiscale in-service state evaluation of Jiujiang Bridge using monitored data*”

Prof. HP Chen, University of Greenwich, UK

10:15-10:45 Tea Break

10:45-11:05 Invited Paper “*Benefits of dynamic monitoring of bridges for structural health assessment*”

Mr. John Huxtable, Business Development, Structural Health Monitoring Dewesoft UK Ltd.

11:05-11:25 Invited Paper “*Local air temperature forecasting for civil infrastructure using deep learning-based downscaling*”

Dr. Peng Ni, The Hongkong Polytechnic University, China

11:25-11:50 Keynote Paper “*Museum Intelligent Construction Monitoring System Based on Machine Learning.*”

Prof. Lizhe Jia, Nanchang Institute of Technology, China.

11:50-12:15 Keynote Lecture “*SHIELD: Smart Health intelligence for Engineering Lifecycle Diagnostics*”

Dr. Basuraj Bhowmik, Indian Institute of Technology, Varanasi, India

12:15-12:35 Invited Paper “*GeoSMART: A Black Box Approach to Structural Health Monitoring*”

Dr. Reza Ghadim, GeoSIG, Switzerland

12:35-12:55 Invited Paper “*Wind Induced Vibrations at the Humen Bridge in China - Results of an ongoing monitoring campaign for assessing the effectiveness of mitigation measures*”

Prof. Christian Meinhardt, GERB, Germany

12:55-13:45 Lunch Break

13:45-14:10 Keynote Lecture “*Field Monitoring and Numerical Analysis of Global Temperature Behaviour of Long span Cable-stayed bridges*”

Prof. Yong Xia, The Hong Kong Polytechnic University, China

14:10-14:35 Keynote Lecture “*Time-varying Characteristics Analysis and Structural Damage Detection for Bridges Under a Moving Vehicle Using High-resolution Time-frequency Methods*”

Dr. Tianli Huang, Central South University, China

14:35-15:00 Keynote Lecture “*Human Performance Monitoring during Shipboard Emergency Response*”

Prof. Kenneth Loh, University of California San Diego, USA.

15:00-15:30 Tea Break

15:30-15:50 Invited Paper “*Full-scale Fatigue Testing of Composite Marine Propellers*”

Prof. A.J. Huijter, Prof. C. Kassapoglou, Prof. L. Pahlavan, TU Delft, Netherlands.

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15:50-16:10 Invited Paper “*Considerations for Acoustic Emission Monitoring of Maritime Structures*”

Prof. C. Saccone, Prof. L. Pahlavan, TU Delft, Netherlands.

16:10-16:30 Invited Paper “*Feasibility of Acoustic Emission Monitoring of Corrosion Damage in Ship Structures*”

Prof. R. Habiyaremye, Prof. H. Seyffert, Prof. L. Pahlavan, TU Delft, Netherlands.

16:30-16:50 Invited Paper “*Acoustic Emission Monitoring of Subsea Mooring Systems*”

Prof. F. Riccioli, Prof. L. Pahlavan, TU Delft, Netherlands.

16:50-17:10 Invited Paper “*Exact solution for structural health monitoring of smart structures using electromechanical impedance method*”

Prof. Nilanjan Mallik, Indian Institute of Technology, Varanasi, India

CONFERENCE PROGRAMME DAY TWO: 24TH June 2025

Chairs:

09:00-09:25 Keynote Lecture “*Structural Performance Digital Twin Model for Cable-stayed Bridges.*”

Prof. Ying Wang, Harbin University of Technology , China

09:25-09:50 Keynote Lecture “*Application of Laboratory test data and finite element method to simulate the integrity of a tunnel support system*”

Dr. Joshua Omer, Kingston University London, UK

09:50-10:15 Keynote Lecture “*Monitoring of bolted connection using piezoceramic transducers.*”

Prof. Gangbing Song, University of Houston, UK

10:15-10:45 Tea Break

10:45-11:05 Invited Paper “*Identification of Damage Modes in Fiber-reinforced Composites using Acoustic Emission Monitoring and X-ray Computed Tomography*”

L. Hohaus, A. Huijjer, C. Kassapoglou, L. Pahlavan, TU Delft, Netherlands.

11:05-11:25 Invited Paper “*Quantification of Stresses in the Concrete Specimens Using Ultrasonic Pulse Velocity Test Method*”

Prof. Rama Shankar, National Institute of Technology , Allahabad, India

11:25-11:45 Invited Paper “*Structural Health Monitoring in the Digital Era: A Scientometric Analysis of Trends, Technologies, and Future Directions*”

Dr. Tahreer Fayyad, Prof. Su Taylor, Queen’s University Belfast, UK

Kun Feng, Anglia Ruskin University, UK

11:45-12:10 Keynote Lecture “*Autonomous acousto-ultrasonic monitoring of thin-walled composites*”

Dr. Abhishek Kundu, University of Cardiff, UK.

12:10-12:35 Keynote Lecture “*FE model updating of structures with partial damage using a novel GA based approach*”

Prof. Young Lu, University of Edinburgh, UK

12:35-13:00 Keynote Lecture “*Study on Ultrasonic Guided Waves and Phased Array Technology for Structural Health Monitoring of Underwater Pipelines*”

Prof. Wentao Wang, Harbin Institute of Technology, Shenzhen, China

13:00-14:00 Lunch

14:00-14:25 Keynote Lecture “*Field Monitoring and Numerical Analysis of Global Temperature Behaviour of Long span Cable-stayed bridges*”

Prof. Yuanfeng Duan, Zhejiang University , China

14:25-14:50 Keynote Lecture “*Structural health monitoring by IoT sensing and edge computing techniques*”

Dr. Jun Li, Curtin University , Australia

14:50-15:15 Keynote Lecture “*Transformer-Based Semantic Segmentation for Enhanced Damage and Component Detection in Civil Infrastructure Inspection*”

Dr. Jothi Sarvanan, Indian Institute of Technology , Bhubaneswar, India

15:15-15:45 Tea Break

15:45-16:05 Invited Paper “*Evaluation and Assessing of Blast-Induced Ground Vibrations*”

Dr. Manoj Khandelwal, Federation University Australia, Australia.

16:05-16:25 Invited Paper “*Health monitoring and remaining life assessment of ageing railway bridges*”

Prof. Sudath C. Siriwardane , University of Stavanger, Norway.

16:25-16:50 Keynote Lecture “*Improving Bridge Deck Performance Using UHPC and LMC Overlays*”

Prof. Nenad Gucunski, Rutgers University, USA

16:50 -17:10 Invited Paper “*Smart Modelling and Response tracking in multi-DOF systems via Physics-Informed Neural networks*”

Anshu Sharma, Prof. Basuraj Bhowmik , Indian Institute of Technology, Varanasi, India .

CLOSURE :- **Dr. Piotr Omenzetter**, University of Aberdeen, UK

CONFERENCE PROGRAMME DAY TWO PARALLEL SESSION: 24TH JUNE 2025

Chairs:

09:00-09:25 Keynote Lecture “*Roll of structural Health Monitoring in South Asia*”

Prof. Suresh Bhalla, Indian Institute of Technology , Delhi, India

09:25-09:50 Keynote Lecture “*Development and Application of Advanced Ultrasonic Guided Wave Nondestructive Testing and Integrated Robotic Intelligent Sensing Technology for Pipeline Integrity*”

Dr. Xudong Niu, China Academy of Sciences , China

09:50-10:10 Invited Paper “*Seismic Response and Analysis of Multi-Storey Building using base isolation technique in Nepal Earthquake*”

Sharukh Ali, Sonakshi Jain, Prof. Krishna Kant Pathak, Prof. Basuraj Bhowmik , Indian Institute of Technology, Varanasi, India .

10:15-10:45 Tea Break

10:45-11:10 Keynote Lecture “*Automated extraction of bridge component profiles from laser scanning data*”

Prof. Xiaojun Wei, School of Civil Engineering, Central South University, China

11:10-11:30 Invited Paper “*Fatigue Assesment of OSD Welds Integrating 27-year Monitoring Data and Sub-modelling Technique*”

Dr. Tian Lu, The Hongkong Polytechnic University , China

11:30-11:50 Invited Paper “*Structural Health Monitoring of concrete Filled Steel Tubes: Methods, Challenges and Future Use*”

Janhavi Singh, Prof. Krishna Kanth Pathak, Prof. Basuraj Bhowmik , Indian Institute of Technology, Varanasi, India .

11:50-12:10 Invited Paper “*Model-informed reconstruction of experimental guided wave modes with uncertainty quantification for damage signature establishment using a cyberphysical framework*”

Anirudh Gullapalli, Carol Featherston, Rhys Pullin, Dr. Abhishek Kundu , University of Cardiff, UK

12:10-12:30 Invited Paper “*Evaluating shifting factor in open-hole composite laminates using strain and acousto-ultrasonic measurements*”

Yuxin Yao, Carol Featherston, Dr. Abhishek Kundu, University of Cardiff, UK

12:30-12:50 Invited paper “ *Real Time Shipboard Firefighter Activity Classification using Integrated Multi-Sensor System*”

Taylor Pierce, Shih-Chao Huang, Kenneth J. Loh , University of California, San Diego, USA

13:00-14:00 Lunch Break

14:00-14:20 Invited Paper “ *Advancing Resilience of Aging Floating-Type Offshore Wind Turbines in Storm Conditions through Digital Health Engineering: A Comprehensive Review* ”

Mr. George Alex Vanaraja, Prof. Jeom Paik, Prof. Giles Thomas, University College London, UK

Prof. Purnendu Das, ASRAnet, UK

14:20-14:40 Invited Paper “ *Enhancing Highway Bridge Sustainability in Kuwait: Challenges and Opportunities in Structural Health Monitoring*”

Dr. Shaikha Abdulattef Mubarak AlSanad , Kuwait Institute for Scientific Research, Kuwait

14:40-15:00 Invited Paper “ *Automatic Defect Detection in Concrete Using Laser Ultrasonic Visualization Testing and CycleGAN* ”

Prof. Takahiro Saitho, Gunma University, Japan.

15:00-15:30 Tea Break

