

1. Record Nr.	UNINA9911113923503321
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Titolo	4th International Conference on Structural Health Monitoring and Engineering Structures (SHM&ES 2025) : Advances in Sustainable Engineering and Management: Innovations for Reducing Energy Consumption and Carbon Footprint // edited by Le Thanh Cuong, Nicholas Fantuzzi, Roberto Capozucca, Vu Thi Bich Quyen, Samir Khatir
Pubbl/distr/stampa	Cham : , : Springer Nature Switzerland : , : Imprint : Springer, , 2026
ISBN	3-032-04645-9 9783032046451
Edizione	[1st ed. 2026.]
Descrizione fisica	1 online resource (1426 pages)
Collana	Lecture Notes in Civil Engineering, , 2366-2565 ; ; 747
Disciplina	690
Soggetti	Buildings - Design and construction Building materials Geotechnical engineering Building Construction and Design Structural Materials Geotechnical Engineering and Applied Earth Sciences Building Materials
Lingua di pubblicazione	Inglese
Formato	Materiale a stampa
Livello bibliografico	Monografia
Nota di contenuto	Structural Health Monitoring -- Enhancing vibration-based failure identification in beam structures using statistical features and machine learning -- Forecasting the Ultimate Load Capacity of Flat Slabs with Artificial Neural Networks -- Modal strain energy and convolutional neural network-based damage identification in plate-like structures -- Detecting multiple damages in I-section steel beams using an improved mode shape curvature change-based method -- Factors Affecting the Structural Health of French Colonial Architecture in Vietnam -- Compressed Sparse Regression for Anchored Design of Experiments and Sensor Placement in Structure Health Monitoring -- Predicting Building Energy Consumption Considering Climate Change using 6D BIM and Machine Learning -- Optimization of sensor locations for homogeneous beams in structural health monitoring using

isogeometric analysis and differential evolution -- An adaptive DNN-assisted metamodel for damage detection of steel frames based on incomplete frequencies and mode shapes with limited training datasets -- TPE-Optimized Neural Network Framework for Predicting Settlement of Nodular Pile Foundations -- Damage detection of trusses utilizing free vibration signals and Convolutional neural network relied on model order reduction -- Monitoring Column and Shear Wall Shortening in High-Rise Buildings.

Sommario/riassunto

This book features selected papers from the 4th International Conference on Structural Health Monitoring & Engineering Structures (SHM&ES), held in Nha Trang City, Vietnam, on August 7–8, 2025. It highlights recent advancements in structural health monitoring, damage detection and assessment, non-destructive testing, inverse problems, optimization, artificial neural networks, engineering management, and architectural innovations. Key topics include innovative structural designs aimed at reducing energy consumption and CO2 emissions, as well as emerging techniques for structural damage diagnosis. The conference also covers applications in industrial engineering, theoretical and analytical methods, numerical simulations, and experimental approaches. Moreover, discussions address management strategies for sustainable development, emphasizing the integration of sustainability into engineering practices to prioritize environmental and social responsibilities alongside technological innovation. The book is a valuable resource for researchers and professionals engaged in the health monitoring and sustainable development of engineering structures.
