



8th International Conference on Structural Integrity and Durability (ICSID2025)

Preface

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1. Preface

The 8th International Conference on Structural Integrity and Durability, ICSID 2025, was organized by the Faculty of Mechanical Engineering and Naval Architecture, University of Zagreb, and the Croatian National Group of the European Structural Integrity Society (ESIS), in Dubrovnik in Croatia from September 16 to 19, 2025.

ICSID 2025 was organized as the Hybrid Conference i.e, a combination of on-site and online participation to provide convenience for participants. The Conference was held in the Centre for Advanced Academic Studies (CAAS) of the University of Zagreb, in the city of Dubrovnik. The magnificent old building of CAAS is situated in the center of Dubrovnik on the Croatian Adriatic Coast, in the vicinity of the most prominent historical places of the Old Town (<https://icsid2025.fsb.unizg.hr/>). Online presentations were held using a commercial meeting platform. In total 88 on-site and online presentations were given, including six plenary lectures. Eleven posters were also presented.

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The objective of the ICSID 2025 Conference was to bring together scientists, researchers, and engineers from around the world to discuss how to analyze, predict and assess the fatigue and fracture of structural materials and components. The Conference provided a forum for discussion of contemporary and future trends in experimental, analytical, and numerical fracture mechanics, fatigue, failure analysis, structural integrity assessment, and other important issues in the field.

A wide range of topics was covered such as: Failure investigation and analysis; Structural integrity assessment; Analytical Models; Advanced testing and evaluation techniques; Applications to components and structures; Non-destructive evaluation (NDE); Fatigue and fracture simulation and testing at all length scales; Fracture and failure criteria; Multiscale materials modeling; Mixed-mode and multiaxial fatigue and fracture; Durability and life extension of structures and components; 3D-printed materials and structures; Models, criteria and methods in fracture mechanics; Finite element methods and their applications; Residual stress effects; Fatigue and fracture of weldments, welded components, joints and adhesives; Corrosion, environmentally enhanced degradation and cracking, corrosion fatigue; Fracture and damage of cementitious materials; Fatigue and fracture of polymers, elastomers, composites and biomaterials; and others.

Prior to the ICSID 2025 Conference a two-day Summer School with the topic “Fatigue and fracture modelling and analysis” was organized for graduate students, researchers, and engineers from industry. Those participants who came to Dubrovnik, besides the excellent technical program, had the opportunity to enjoy their stay in Dubrovnik, one of the most famous Mediterranean cities, world celebrated symbol of historical heritage and beauty, which has found its place in the UNESCO World Heritage List.

As the Guest Editors of this Conference Proceedings, we wish to thank all authors for their contributions.

Guest Editors of the Procedia Structural Integrity ICSID 2025 Conference Proceedings:

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