

# Preface

We are pleased to present the proceedings of the 7th International Conference of Protective Structures “ICPS7”, which was successfully held from 12 to 15 May 2025 in Abu Dhabi. Abu Dhabi is an emerging global hub for innovation and education with cutting-edge research facilities, prestigious academic institutions, and a vibrant cityscape, offering a perfect setting for the ICPS7 conference. The first ICPS international conference on protective structures in this dynamically developing region provided a unique opportunity for many researchers from around the world to communicate and exchange insights.

ICPS originated in 2010 in Manchester, UK (1st ICPS). This global event has since traversed the globe, making impactful stops in Potsdam, Germany, in 2013 (2nd ICPS/ISIEMS), Newcastle, Australia, in 2015 (3rd ICPS), Beijing, China, in 2016 (4th ICPS), Poznan, Poland, in 2018 (5th ICPS) and Auburn, USA, in 2023 (6th ICPS). The organizing committee was pleased to present the conference program with four reputable keynote speakers in the field of material engineering. In addition, more than 150 presentations covered most domains in the field of material and impact loadings. Also, four sponsors and exhibitors from leading instrument-providing and cutting-edge technology companies in the field participated in the event.

This conference was organised by the Technology Innovation Institute (TII), a global research centre dedicated to pushing the frontiers of knowledge. Our teams of scientists, researchers, and engineers worked in an open, flexible, and agile environment to deliver discovery science and transformative technologies. Our work means we will not only be prepared for the future; we will create it. Working together, we were committed to inspiring innovation for a better tomorrow. TII is part of the Abu Dhabi Government’s Advanced Technology Research Council (ATRC), which oversees technology research in the emirate.

We hope this proceeding will be a valuable resource and inspiration for researchers.

Yours Sincerely  
The Organizing Committee

# Address of the Conference Chair

**Dr. Rafael Santiago**  
**Senior Director Technology**  
**Innovation Institute (TII)**



As the Conference Chair, I am delighted to introduce these proceedings, a collective testament to the exceptional research, ingenuity, and collaboration that define our field.

ICPS7 brings together a vibrant community of engineers, scientists, and innovators dedicated to advancing the science and application of protective structures. This proceeding reflects the dynamic exchange of ideas, the depth of exploration, and the global relevance of the work being presented. It offers a snapshot of where we stand today and, more importantly, where we are headed.

In an era defined by complex challenges and rapidly evolving threats, the role of protective structures has never been more critical. This conference provides a vital platform for sharing new findings, methodologies, and technologies to help shape safer and more resilient societies. The work represented in these abstracts highlights our community's commitment to advancing the frontiers of knowledge and delivering real-world impact.

I would like to extend my deepest appreciation to all the authors, organisers, reviewers, keynote speakers, sponsors, participants and staff for their dedication and support. Your efforts make ICPS7 a truly international and inspiring event.

I invite you to explore the pages ahead with curiosity and enthusiasm. May they spark new ideas, foster meaningful collaborations, and inspire continued excellence in our shared pursuit of innovation and safety.

Warm Regards,  
**Dr. Rafael Santiago**

## Acknowledgement

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