

ICSS-14

14th International Conference on Sandwich Structures



Genova, Italy, 16-18 June 2025

University of Genova, Polytechnic School

<https://icss14.unige.it/>

CONFERENCE PROGRAM



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Prof. Christian **Berggreen** (Denmark)
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Conference Chairs

Prof. Roberta **Massabò**,
Dept. of Civil, Chemical & Env. Engineering
University of Genova, Genova, Italy
Prof. Christian **Berggreen**,
Dept. of Civil and Mechanical Engineering
Technical University of Denmark, Kgs. Lyngby,
Denmark
Prof. Leif **Carlsson**,
Dept. of Ocean and Mechanical Engineering
Florida Atlantic University, Boca Raton, Florida,
USA

Local Organizing Committee

Prof. Roberta **Massabò**
Prof. Ilaria **Monetto**
Ms. Serena **Scelza**, MSc Civil Engrg.
Ms. Laila **Srikant**

A big thank you to our sponsors for their collaboration. We are also grateful for their active involvement, valuable contributions and the generous support of the 14th International Conference on Sandwich Structures in Genova (Italy), 2025



PROGRAM OVERVIEW

Monday 16 June	Tuesday 17 June	Wednesday 18 June
8:00 - 17:30 Conference Registration	8:30 - 17:30 Conference Registration	8:30 - 13:00 Conference Registration
8:30 - 9:00 Opening session		
9:00 - 9:45 General lecture Prof. Leif Carlsson	9:00 - 9:45 General lecture Prof. Jian Xiong	9:00 - 9:45 General lecture Dr. Matteo Pasi
9:45 - 10:45 Session: <i>Extreme Loadings</i> Chair: Prof. D. Penumadu	9:45 - 10:45 Session: <i>Mechanics</i> Chair: Prof. M.S. Hoo Fatt	9:45 - 11:05 Session: <i>Core Material Design and Characterization</i> Chair: Dr. A. Di Renzo
10:45 - 11:15 Coffee Break	10:45 - 11:15 Coffee Break	11:05 - 11:35 Coffee Break
11:15 - 12:55 Session: <i>Design and Manufacturing</i> Chair: Prof. D. Wowk	11:15 - 12:55 Session: <i>Delamination/Disbond</i> Chair: Dr. J. Hohe	11:35 - 12:55 Session: <i>Design</i> Chair: Dr. A. Gomez
12:55 - 14:00 Lunch	12:55 - 14:00 Lunch	12:55 - 13:25
14:00 - 14:45 General lecture Dr. F. Hähnel and Dr. R. Schäuble	14:00 - 14:45 General lecture Prof. Laura Galuppi	Closing Session
14:45 - 16:05 Session: <i>Thermoplastic Sandwich Structures</i> Chair: Prof. P. Casari	14:45 - 16:05 Session: <i>Applications</i> Chair: Prof. Prof. C. Berggreen	
16:05 - 16:35 Coffee Break	16:05 - 16:35 Coffee Break	
16:35 - 17:55 Session: <i>Delamination/Debond</i> Chair: Dr. Schäuble	16:35 - 17:15 Session: <i>Thermal and Environmental Effects</i> Chair: Prof. I. Monetto	
19:30 Welcome Cocktail at the Blu Marlin Passeggiata Anita Garibaldi 12r, Genova Nervi Outbound trip (bus transfer): Pick-Up Time: 18.45; Meeting Point Piazza De Ferrari. Return trip (by train)	17:30 ICSS International Scientific Committee Meeting 20:00 Banquet at Palazzo Pallavicino Piazza delle Fontane Marose 2	

PROGRAM

Monday 16 June

8:00 - 17:30	Conference Registration
8:30 - 9:00	Opening Session
9:00 - 9:45	General lecture In Search of Good Sandwich <i>Prof. Leif Carlsson, Florida Atlantic University</i>
	Session Extreme Loadings <i>Chair: Prof. D. Penumadu</i>
9:45 - 10:05	RESPONSE OF FLAT AND CURVED SANDWICH COMPOSITE PANELS SUBJECTED TO A NEAR-FIELD UNDERWATER EXPLOSION <i>A. Shukla, S. Jain, A. Pandey</i>
10:05 - 10:25	BEHAVIOR OF PVC FOAMS UNDER A WIDE ENVIRONMENTAL TEMPERATURE RANGE <i>M.S. Hoo Fatt, A.R. Vedire</i>
10:25 - 10:45	INVESTIGATING STATIC COMPRESSION PRELOADS ON THE IMPACT BEHAVIOUR OF HONEYCOMB SANDWICH STRUCTURES <i>C. Fischer, F. Hähnel, K. Wolf, J. Markmiller</i>
10:45 - 11:15	Coffee Break
	Session Design and Manufacturing <i>Chair: Prof. D. Wowk</i>
11:15 - 11:35	PEI HONEYCOMB CORES WITH WAVY CELL WALL GEOMETRY <i>J. Pflug, F. Zerling, G. Kravchenko, W. Winant</i>
11:35 - 11:55	METHODS FOR THE DESIGN AND MANUFACTURING OF TAILORED HONEYCOMB CORES (THC) <i>P. Engel, C. Fischer, F. Hähnel, J. Markmiller</i>
11:55 - 12:15	DESIGN AND SIMULATION OF A FOLDED SANDWICH CORE STRUCTURE FOR NEAR-SURFACE FLUID TRANSPORT IN AIRCRAFT SKIN HEAT EXCHANGERS <i>S. Thissen, P. Middendorf</i>
12:15 - 12:35	SURFACE MATCHING DESIGN AND SHAPE-FORMING DAMAGE ANALYSIS OF CARBON FIBER COMPOSITE HONEYCOMB <i>X. Wei, J. Xiong</i>
12:35 - 12:55	INNOVATIVE DESIGN STRATEGIES FOR RECYCLING OF SANDWICH STRUCTURES <i>H. Eggenschwiler, S. Laffranchini, J. Vioria</i>
12:55 - 14:00	Lunch
14:00 - 14:45	General lecture Sandwich Disbond - Fracture Mechanics Model and Micromechanics of Damage <i>Dr. F. Hähnel, TU Dresden, Dr. R. Schäuble, Fraunhofer IMWS</i>

Session Thermoplastic Sandwich Structures <i>Chair: Prof. P. Casari</i>	
14:45 - 15:05	SANDWICH STRUCTURES CONSIDERING INFUSIBLE THERMOPLASTICS D. Penumadu, Z. Arwood
15:05 - 15:25	THERMOFORMING OF NOVEL HONEYCOMB CORE SANDWICH STRUCTURES BASED ON HIGH PERFORMANCE THERMOPLASTICS B. Borowitz, R. Schäuble, R. Schlimper, F. Zerling, J. Pflug, M. Feldmann
15:25 - 15:45	TEMPERATURE-DEPENDENT FAILURE MECHANISM OF THERMOPLASTIC HONEYCOMB SANDWICHES UNDER SHEAR DOMINATED 4-POINT BENDING LOAD A. Horn, C. Berggreen, A. Gomez, B. Legarth
15:45 - 16:05	MECHANICAL PROPERTIES AND FABRICATION OF RECOVERABLE THERMOPLASTIC SANDWICH STRUCTURES WITH CIRCULAR HONEYCOMB CORES USING A CONTINUOUS APPROACH Q. Fu, J. Xiong
16:05 - 16:35	Coffee Break
Session Delamination/Debond <i>Chair: Dr. R. Schäuble</i>	
16:35 - 16:55	COMPUTATIONAL INVESTIGATION OF DISBOND PROPAGATION IN HONEYCOMB-CORE SANDWICH PANELS UNDER GROUND-AIR-GROUND PRESSURIZATION AND COMPLEX IN-PLANE LOADING A. Gomez, C. Berggreen
16:55 - 17:15	EXPERIMENTAL ANALYSIS OF DISBOND GROWTH IN SANDWICH PANELS SUBJECTED TO GROUND-AIR-GROUND PRESSURIZATION S. Chava, A. Gomez, C. Berggreen
17:15 - 17:35	A FATIGUE FRACTURE TEST METHODOLOGY USING THE SANDWICH DCB-UBM TEST SPECIMEN M. Manouchehr, C. Berggreen, E.A.G. Meisel
17:35 - 17:55	FRACTURE BEHAVIOR AND DAMAGE PROPAGATION IN IMPACTED AEROSPACE SANDWICH PANELS: A NUMERICAL AND EXPERIMENTAL INVESTIGATION C. Berggreen, A. Gomez
19:30	Welcome Cocktail Passeggiata Anita Garibaldi 12r, Genova Nervi Outbound trip (bus transfer): Pick-Up Time: 18.45; Meeting Point Piazza De Ferrari. Return trip (by train)

Tuesday 17 June

8:30 - 17:30	Conference Registration
9:00 - 9:45	General Lecture Mechanics of Carbon Fiber Composite Sandwich Materials and Structures <i>Prof. Jian Xiong, Harbin Institute of Technology</i>
	Session Mechanics <i>Chair: Prof. M.S. Hoo Fatt</i>
9:45 - 10:05	UNCERTAINTY IN THE RESPONSE OF ALL-ALUMINUM SANDWICH BEAMS LOADED IN BENDING AND SHEAR MODES – AN EXPERIMENTAL INVESTIGATION <i>J. Hohe, C. Beckmann</i>
10:05 - 10:25	FAILURE ANALYSIS IN BENDING OF SINGLE-FACE HONEYCOMB CORE SANDWICH BEAMS <i>L.A. Carlsson, M.O. Ayanoglu</i>
10:25 - 10:45	T-STRESSES IN END-LOADED BIMATERIAL ISOTROPIC STRIPS <i>I. Monetto, K. Ustinov, R. Massabò</i>
10:45 - 11:15	Coffee Break
	Session Delamination/Disbond <i>Chair: Dr. J. Hohe</i>
11:15 - 11:35	FATIGUE DISBOND GROWTH RATE OF SANDWICH MATERIAL WITH VERY THIN FACESHEETS – COMPARISON OF EXPERIMENTAL APPROACHES <i>R. Schäuble, N. Falke, M. John</i>
11:35 - 11:55	CRACK KINKING PREDICTION IN CARBON FIBER/PMI FOAM SANDWICH STRUCTURES <i>C. Contaldi, C. Berggreen, B.N. Legarth, R. Massabò</i>
11:55 - 12:15	NUMERICAL MODELLING OF INTERFACE DELAMINATION IN SANDWICH COMPOSITE STRUCTURES <i>M. Schiera, C. Bisagni</i>
12:15 - 12:35	ASSESSMENT OF ONE-DIMENSIONAL MODELS FOR THE EVALUATION OF BOUNDARY EFFECTS IN SANDWICH FRACTURE SPECIMENS <i>S. Scelza, R. Massabò</i>
12:35 - 12:55	MODELING DELAMINATION AND KINKING IN SANDWICH SPECIMENS <i>R. Massabò</i>
12:55 - 14:00	Lunch

14:00 - 14:45	General Lecture Structural Analysis and Design of Composite Glass Elements: Analytical Methods and Engineering Applications <i>Prof. Laura Galuppi, University of Parma</i>
	Session Applications <i>Chair: Prof. C. Berggreen</i>
14:45 - 15:05	TESTING FOR EFFECTS OF EDGE PROXIMITY IN DENTED HONEYCOMB SANDWICH PANELS D. Wowk, P. Wheeler
15:05 - 15:25	DESIGN AND ANALYSIS OF PULL-OUT TESTS FOR INSERTS IN THERMOPLASTIC COMPOSITE SANDWICH PANELS M. Hojjati, S. Mandegarian, A. Yeganeh, H. Moghaddar
15:25 - 15:45	A SANDWICH STRUCTURE APPROACH TO STABILITY ANALYSIS OF ORTHODONTIC BRACKETS B. Azarov, O. Rabinovitch
15:45 - 16:05	DETERMINATION OF THE TORSIONAL AND WARPING STIFFNESS OF SANDWICH STRUCTURES BASED ON EQUIVALENT CROSS-SECTIONS E.M. Pradhan, F. Rädcl, J. Lange
16:05 - 16:35	Coffee Break
	Session Thermal and Environmental Effects <i>Chair: Prof. I. Monetto</i>
16:35 - 16:55	CHARACTERIZATION OF CYCLIC HYGROTHERMAL SWELLING AND SHRINKAGE BEHAVIOR OF BALSA WOOD AND GFRP-BALSA SANDWICH STRUCTURES P. Casari, Y. Wu, J. Fajoui, S. Fréour, M. Bouziane
16:55 - 17:15	FACE DELAMINATIONS AND BLISTERING IN PIR-CORE SANDWICH PANELS: INFLUENCE OF TIME, TEMPERATURE AND PRODUCTION PARAMETERS A. Schardt, F. Rädcl, J. Lange
17:30	ICSS International Scientific Committee Meeting
20:00	Banquet at Palazzo Pallavicino Piazza delle Fontane Marose 2

Wednesday 18 June

8:30 - 13:00	Conference Registration
9:00 - 9:45	General Lecture Sandwich panels in LHD structures Matteo Pasi , MSc, Leonardo Helicopter Division
Session Core Material Design and Characterization Chair: Dr. A. Di Renzo	
9:45 - 10:05	EFFECT OF SANDWICH CONFIGURATION ON THE LATERAL STABILITY OF SANDWICH BEAMS WITH INNER SUPPORTS A. Wurf , Y. Frostig, O. Rabinovitch
10:05 - 10:25	FATIGUE PROPERTIES OF NOMEX® HONEYCOMB CELL WALL MATERIAL F. Hähnel , S. Gebhardt, C. Fischer, J. Markmiller
10:25 - 10:45	LOCAL AND GLOBAL BUCKLING OF SANDWICH CELL WALLS IN HIERARCHICAL SANDWICH HONEYCOMB CORES N. Michel , F. Zerling, G. Kravchenko, J. Pflug, H. Georges, C. Mittelstedt
10:45 - 11:05	THERMOPLASTIC HONEYCOMB CORES WITH COEXTRUDED SANDWICH CELL WALLS R. Zarnekow , F. Zerling, G. Kravchenko, J. Pflug
11:05 - 11:35	Coffee Break
Session Design Chair: Dr. A. Gomez	
11:35 - 11:55	DEVELOPMENT OF SUSTAINABLE AIRCRAFT FLOOR PANELS MADE OF FOAM/CORK CORE AND rCF-NON-CRIMP-FABRICS A. Dimassi , R. Emmerich, C. Klemm, D. May
11:55 - 12:15	BONE-INSPIRED DESIGN FOR DAMAGE MITIGATION N. Bahrami Novin , A. Stagni, L. Musenich, F. Caronna, F. Libonati
12:15 - 12:35	MULTI-MATERIAL FUSED FILAMENT FABRICATION PRINTING FOR LIGHTWEIGHT SANDWICH STRUCTURES P.R. Barnett , I. Mellinger, M. Vranes, V. Chawla
12:35 - 12:55	NUMERICAL EVALUATION OF SANDWICH MECHANICAL METAMATERIALS STRUCTURES E.E. Theotokoglou , P.N. Lympieropoulos
12:55 - 13:25	Closing Session

CONFERENCE VENUE

Location

The 14th International Conference on Sandwich Structures, ICSS-14, will be hosted at:

Department of Architecture and Design
University of Genoa
Stradone di San'Agostino 37
16137, Genova, Italy

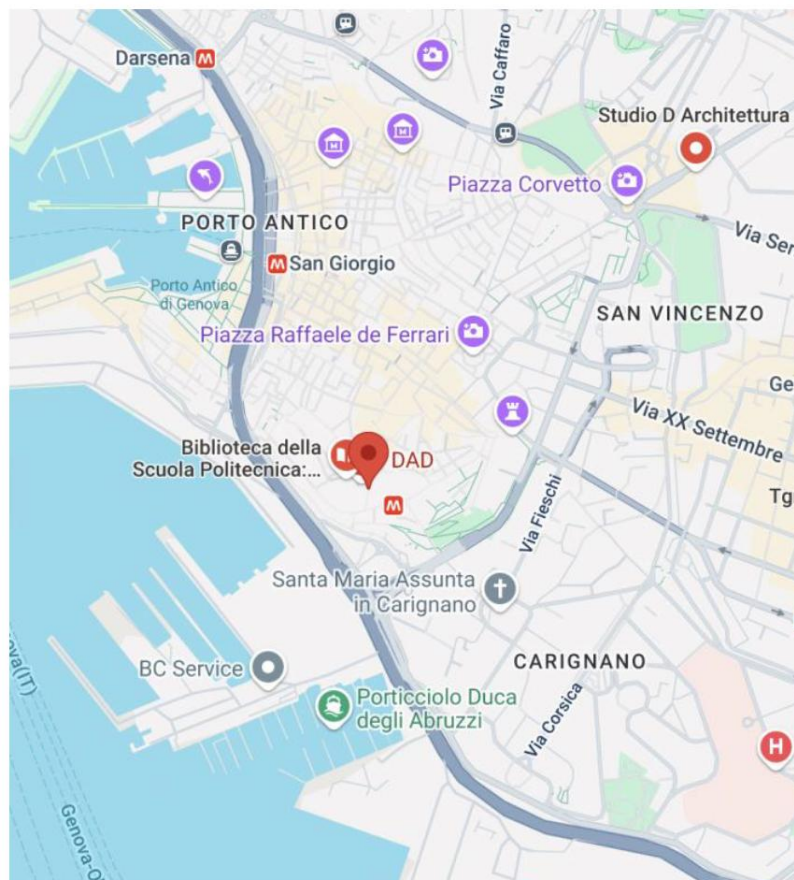
How to reach:

- walking from Piazza De Ferrari (7 minutes)
- Subway Station Sarzano/Sant'Agostino

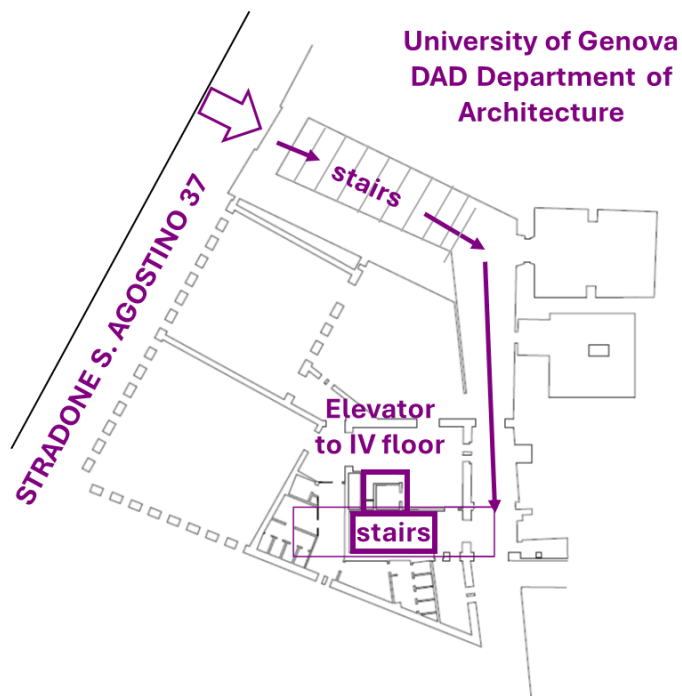
Where to park:

- [Marina Park](#) (walk to Subway Station Sarzano/Sant'Agostino, 1 minute)
- [Parcheggio Piazza Carignano](#) (walk to ICSS-14, 6 minutes)

[Link to Google Maps](#)



GROUND FLOOR



FOURTH FLOOR

