

EXHIBITION CATALOG

INTERNATIONAL ITINERANT EXHIBITION "RESEARCH IN BUILDING ENGINEERING EXCO'25"

INTERNATIONAL ITINERANT EXHIBITION EXCO 2025
ETS DE INGENIERÍA DE EDIFICACIÓN
UNIVERSITAT POLITÈCNICA DE VALÈNCIA
Camino de Vera S/N, 46022 Valencia – Spain

Location:

GDAŃSK UNIVERSITY OF TECHNOLOGY
FACULTY OF CIVIL AND ENVIRONMENTAL ENGINEERING

From 15th to 22nd december, 2025

Gabriela Narutowicza 11/12, 80-233 GDAŃSK, POLONIA

Curators of Exhibition:

Dr. Patryk ZIÓŁKOWSKI (Local Curator)

Dr. José Ramón ALBIOL IBÁÑEZ (International Curator)

Exhibition

XXXIX INTERNATIONAL SHOWROOM OF CONSTRUCTION TECHNOLOGIES - EXCO 2025 ©

INTERNATIONAL ITINERANT EXHIBITION "Research in Building Engineering - EXCO'25"



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WSTĘP – EXCO 2025

Gdańsku, Wydziale Inżynierii Lądowej Politechniki Gdańskiej odbyła się pierwsza konferencja naukowa EXCO25 Research in Building Engineering – International Research Exhibition". Wydarzenie odbyło się w dniach od 15 do 30 grudnia 2025 roku. Inicjatorami i opiekunami tego naukowo-badawczego wydarzenia między Politechniką Gdańską a Politechniką Walencką byli dr Patryk Ziółkowski i dr José Ramón Albiol Ibáñez. Konferencja była wyjątkową okazją dla naukowców, profesorów i studentów do zaprezentowania nowatorskich rozwiązań dedykowanych branży budowlanej. Uczestnicy zawarli nowe współpracy i partnerstwa, a także wymienili się pomysłami i odkryciami z szerszą publicznością. Gdańska konferencja była kolejnym potwierdzeniem silnej więzi obu politechnik. Współpraca ta umożliwia wymianę wiedzy i doświadczenia, pomaga w promowaniu najnowszych osiągnięć badawczych oraz jest świadectwem zaangażowania Politechniki Gdańskiej i Politechniki w Walencji w promowanie i wspieranie internacjonalizacji szkolnictwa wyższego.

Dr. Patryk Ziółkowski

Dr. José Ramón Albiol Ibáñez

PROLOGUE – EXCO 2025

The first EXCO'25 Research in Building Engineering – International Itinerant Exhibition, held from December 15th to December 30th, 2025, in Gdańsk at the Faculty of Civil and Environmental Engineering, was a significant milestone. The initiators and curators of this scientific event were Dr Patryk Ziółkowski and Dr José Ramón Albiol Ibáñez. The exhibition provided a unique opportunity for researchers, professors, and students to showcase their cutting-edge research in the construction industry. It was a platform for participants to share their ideas, innovations, and discoveries with a broader audience and to establish new collaborations and partnerships. This event reflects the solid academic and research collaborations between the Gdańsk University of Technology and the Technical University of Valencia. These collaborations have enabled the exchange of knowledge and expertise, helped promote the latest research developments, and are a testimony to the commitment of the Gdańsk University of Technology and the Technical University of Valencia to promoting and supporting the internationalization of higher education.

Dr. Patryk Ziółkowski

Dr. José Ramón Albiol Ibáñez

PROLOGUE DIRECTOR EXCO'25

The Faculty of Building Engineering of the UNIVERSITAT POLITÈCNICA DE VALÈNCIA - SPAIN, organized on February 24th to 28th, 2025, "The XXXIX Construction Technology Exhibition" EXCO'25 and the International Itinerant Exhibition "Research in Building Engineering" along year, at CEVISAMA - International Fair of Valencia - SPAIN.

Conferences are scheduled in UNIVERSITAT POLITÈCNICA DE VALÈNCIA - SPAIN, the speakers are national and international of recognized prestige from Europe, Asia and America. These conferences are aimed at professionals and students of the UPV to broaden their knowledge and experiences.

EXCO'25 promotes the entrepreneurship of the young UPV generations, participation in conferences.

The International Itinerant Research Exhibition EXCO'25 has the collaboration of 63 Universities from America, Europe, Africa, Asia and Oceania. Promoting collaboration between institutions and professors at the international level.

It fosters interdisciplinary collaboration of the professor staff within the UPV with 63 International Universities; It has the participation of 9 departments and 8 research institutes of the UPV in EXCO'25.

The participating entities are:

1. Universitat Politècnica de València, España.
2. Politecnico di Milano, Italia.
3. Mimar Sinan Fines Arts University, Istanbul, Turkey.
4. Nottingham Business School, England.
5. Vilnius Gediminas Technical University, Vilnius, Lithuania.
6. Universidad de Costa Rica
7. Università degli Studi di Basilicata, Matera, Italia.
8. Universidad Tecnológica de La Habana José Antonio Echeverría, Cuba.
9. Università degli Studi Firenze, Italia
10. Università di Pavia, Italia.
11. Odessa State Academy of Civil Engineering & Architecture, Odessa, Ukraine
12. Università di Salerno, Italia.
13. Silesian University of Technology, Politechnika Śląska, Gliwice, Poland.
14. University of British Columbia, Vancouver, Canada.
15. Universidad de Alcalá de Henares, Madrid, España.
16. Florida A&M University, Florida, USA.
17. Universidad Mayor de San Andrés, La Paz, Bolivia.
18. Universidad de la República (UdelaR) de Uruguay.
19. Universidad John F. Kennedy, Argentina.
20. Universidad de Castilla-La Mancha, España.

21. Universidad de Granada, España.
22. Università degli Studi della Campania "Luigi Vanvitelli", Napoli.
23. Politecnico di Bari, Italia.
24. Università degli Studi di Roma "Tor Vergata", Italia.
25. Hanze University of Applied Sciences, Groningen. Nederland.
26. Jade Hochschule Wilhelmshaven/Oldenburg, Germany.
27. New York University, Tandon School of Engineering. USA.
28. McGill University, Canada
29. Nanyang Technological University, Singapore.
30. University of New South Wales, Sydney, Australia.
31. Università di Pisa, Italia.
32. Universidad de Ibagué, Colombia.
33. Beijing Yong Shan Media Co., Ltd. Pekin
34. Università degli Studi dell'Aquila, Italia.
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36. University of Applied Sciences and Arts of Southern Switzerland
37. Institut für Bau- und Infrastrukturmanagement /ETH Zürich
38. University North, Varaždin, Croacia
39. South Ukrainian National Pedagogical University, Odessa, Ukraine.
40. Kharkiv National University of Civil Engineering and Architecture, Ukraine.
41. Universitat de València, Spain.
42. Perm National Research Polytechnic University, Perm, Russia
43. University of Cape Town, South Africa.
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54. Universidad Católica de Valencia. España.
55. Universidad UTE. Quito. Ecuador.
56. Universidad de Napoles Federico II, Napoles, Italy.
57. Telematic University Pegaso, Italy.
58. University of Guanajuato, México.
59. University of La Salle Bajío, México
60. Universidad Jesuita de Guadalajara, ITESO, México

61. Tecnológico de Monterrey. México.
62. MIT Massachusetts Institute of Technology. USA.
63. Gdańsk University of Technology, Poland.

Thank you all for making EXCO possible.

All the best for EXCO'26!

Best Regards

Dr. José R. Albiol-Ibáñez

Vice Dean Digital Transformation, Business Cathedra &

Entrepreneurship Director EXCO'25

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CHAPTER 1: ECONOMY

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J. Fuentes-del-Burgo / E. Navarro-Astor

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Fernando Cos-Gayón López / Ángel Martín Furones / Igor
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Kevin Alexander Echeverry Bucurú

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Quiteria Angulo-Ibáñez / Aitana Puig-Rocher

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Quiteria Angulo-Ibáñez / Miriam Hernández-García

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María Oliver-Sanz / Alicia Llorca-Ponce

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De-Juan-Ripoll, C. / Calabuig Montesinos, V. / Martínez Beltrán, E. / Palmero Iglesias, L. / Rodrigo Catalán, P. / Tordera Llisterrí, L.

7.7-DANA OCTOBER 2024. TRIBUTE TO COLLECTIVE RESILIENCE AND SOLIDARITY IN THE FACE OF POLITICAL INCOMPETENCE.

Palmero Iglesias, L. / Calabuig Montesinos, V. / De-Juan-Ripoll, C. / Martínez Beltrán, E. / Rodrigo Catalán, P. / Tordera Llisterrí, L.

7.8-THE AUTHOUR'S SOCIAL HOUSING FROM THE STUDY OF THE ORIGINAL DESIGN TO THE ENERGY REQUALIFICATION.

Giuseppe Angileri / Graziella Bernardo / Giuseppina Currò / Giovanni Francesco Russo / Luis Palmero Iglesias

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Fabiola Colmenero Fonseca / Amparo Borrell / Rut Benavente Martínez / Andrés Salas Montoya / Ramiro Rodríguez Pérez

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