

CURRICULUM VITAE

Eng. Paolo ZAZZINI

ASSOCIATE PROFESSOR of TECHNICAL PHYSICS, SSD: I-IND/07B
c.f. ZZZPLA61B11G482F

- Born in Pescara on 11/02/1961, he is domiciled there, in Via Colle Marino, 22.

- **Qualifications:**

July 1979: Scientific high school diploma at the Leonardo da Vinci Scientific High School in Pescara with a grade of 60/60;

24 June 1987: Degree in Mechanical Engineering at the University of Ancona with the grade of 110/110 cum laude;

19 May 1988: Qualification to carry out the profession of Engineer and consequent registration in the Professional Register of Engineers of the Province of Pescara;

07 July 1993: PhD in Technical Physics.

- **Work assignments:**

November 1987 - November 1988: military service at the National Fire Brigade as an Auxiliary Volunteer Firefighter.

November 1988 - January 1990: engineer at "Pirelli Trasmissioni Industriali" in Chieti, in the Research and Development sector.

September 1993: winner of a competition for a position of Assistant Professor in Technical Physics at the Faculty of Engineering of the University of L'Aquila;

09/02/1994: appointment of Assistant Professor at the Department of Energy of the Faculty of Engineering of the University of L'Aquila

March 1997: title of Assistant Professor.

September 1997: transfer to the Department of Science, History of Architecture, Restoration and Representation (D. S. S. A. R. R.) of the Faculty of Architecture of Pescara, University "G. D'Annunzio" of Chieti-Pescara.

January 2003: winner of a competition for a position of Associate Professor in Environmental Technical Physics (SSD ING-IND 11) at the Faculty of Architecture of the University "G. D'Annunzio" of Chieti-Pescara;

31/01/03: appointment of Associate Professor (D.R. N. 511/03) and affiliation to the D S S A R R of the aforementioned Faculty.

January 2006: title of Confirmed Associate Professor.

2006 – 2012: Associate Professor in Building Physics at the Department DSSARR

May 2012: transfer to the Department of Engineering and Geology (INGEO) of the University "G. D'Annunzio" Chieti-Pescara.

• TEACHING ACTIVITY

The undersigned has carried out all his teaching activity in the field of disciplines related to Technical Physics.

March 1994 – September 1997:

At the Department of Energy of L'Aquila, he actively collaborated through cycles of exercises and seminars on various topics, in the following courses: * Technical Physics - degree course in Civil and Building Engineering;* Technical Systems - degree course in Building Engineering;* Technical Systems - University Diploma course in Infrastructure Engineering; and has also taken an active part in the related examination commissions.

Academic year 1995/96: free substitute teacher for the course of "Lighting, Acoustics and Air Conditioning in Construction" at the Faculty of Architecture of the "G. D'Annunzio" University of Chieti – Pescara.

September - October 1996: external teacher of "Industrial Hygiene" as part of the course for Technician responsible for the prevention and protection service n. 771, authorized by the Abruzzo Region, at the headquarters of the CNOS / FAP Association (National Center for Salesian Works / Professional Updating Training) in L'Aquila.

April 1997: lecturer in the training course on safety of technical-administrative staff and researchers (pursuant to articles 21 and 22 of Legislative Decree 626/94) of the University of L'Aquila, holding lectures entitled "Noise risk".

Since September 1997 at the D. S. S. A. R. R. of the Faculty of Architecture of Pescara: Active collaboration, with cycles of lessons and exercises, in the following courses:• Technical Physics;• Environmental Technical Physics;• Lighting, Acoustics and Air Conditioning in Construction; (remedial course AA 1999/2000)• Technical Physics and Systems. (remedial course AA 2000/2001) also being part of the related examination commissions.

Academic years 97/98, 98/99, 99/00: Technical Systems module (30 hours) of the "Laboratory of Architectural Construction" course. The activity carried out in this three-year period has found its completion in the publication of the volume [33], of which the undersigned is one of the authors.

Academic year 1999/2000: lecturer in "Environmental Technical Physics"

Academic years from 2000/01 to 2005/06: lecturer in "Technical Systems".

Academic years 1999/2000, 2001/2002: lectures on "Building Physics" within the post-graduate School of Specialization in "Restoration of Monuments".

Academic years: 2002/03 and 2003/04: lecturer in the module "Technological Services Projects", as part of the "Giovanni Ferracuti" Master's Degree entitled "Building Manager: design and management of maintenance and safety".

February – April 2004: lectures of the modules "Biological Plant Engineering and Sustainable Architecture", as part of the course "Expert in Bioarchitecture for Building Restoration and Recovery", organized by IAL CISL Abruzzo.

Academic year 2004/05: lecturer in Technical Physics I for the three-year degree in Building Techniques.

Academic Year 2005/2006: teacher of the training course "Noise pollution in the living environment and in the external environment" organized by the ARTA (Regional Agency for the Protection of the Environment) of the Abruzzo Region.

Academic years from 2005/06 to 2011/12: lecturer in Technical Physics I and Technical Physics II of the five-year single-cycle degree in Architecture.

Academic years 2010/11 and 2011/12: lecturer in Technical Physics for the three-year degree in Building Techniques.

Academic year 2011/12: lecturer in Environmental Control Techniques and Renewable Energy of the degree in Sustainable Urban Planning.

Academic years 2009/2010 and 2010/2011: teacher of two training courses for experts in Environmental Acoustics for the purpose of recognizing the figure of competent technician in environmental acoustics according to the scheme provided by the Abruzzo Region pursuant to Law 447/95 and the Prime Ministerial Decree 31/03/1998.

Academic year 2012/13: lecturer in Technical Physics of the Bachelor's Degree in Construction Engineering.

Academic year 2013/14: lecturer in Technical Systems for Construction of the Master's Degree in Construction Engineering.

From the academic year 2014/15 to 2019/20: lecturer in TECHNICAL Physics of the Bachelor's degree in Construction Engineering and in the course of Technical Systems for Building of the Master's degree in Construction Engineering.

From the academic year 2020/21 to date: holder of the TECHNICAL Physics course of the Bachelor's degree in Construction Engineering and of the degree in Architecture and of the Building Thermophysics module in the integrated course of Building Energy Design of the Master's degree in Construction Engineering.

- Several times member of the Degree Commissions of the Architecture Course for the areas of Technology of the Built Environment, Restoration, History of Architecture and Urban Planning and of the course of Construction Engineering. Supervisor or co-supervisor of numerous degree theses in Architecture on topics of Acoustics, Lighting and Thermal Behavior of the building. In particular, he was supervisor, in the academic year 2005/06, of the degree thesis in Architecture entitled: "*Natural lighting in the restoration of the marquis palace of Spinete (CB): an innovative system of daylight transport*", winner of the XVI edition of the AIDI (Italian Lighting Association) award for the "Research and innovation" section.

- Since the academic year 2013/14 he has been supervisor of over 120 bachelor's and 30 master's theses in Construction Engineering on various topics, such as "Natural light transport technologies in underground environments", "Energy behavior of buildings", "Architectural acoustics", "Passive air conditioning techniques of buildings".

In addition:

- February 2001: member of the Evaluation Commission for the achievement of the title of PhD in Technical Physics, XII Cycle, based in Palermo.
- May - July 2001: member of the Selection Committee of the Comparative Evaluation Procedure for a position of Assistant Professor at the Faculty of Engineering of the University of Rome "Tor Vergata" for the scientific disciplinary sector I05B (ING-IND/11 Environmental Technical Physics), announced by Rector's Decree of 13.10 2000 (ref. 0645) published in the Official Gazette no. 81 of 17/10/2000.
- January 2008: member of the Evaluation Commission for the achievement of the title of PhD in Energy at the Polytechnic University of Marche.
- February 2012: member of the Evaluation Commission for the achievement of the title of PhD in Energy, at the Polytechnic University of Marche.
- June-July 2009: teacher of the course for "Competent technicians in environmental acoustics" 1st edition 2009/2010 organized by the EMAS ARTA (Regional Agency for Environmental Protection) school of the Abruzzo Region.
- April-June 2010: teacher of the course for "Competent technicians in environmental acoustics" 2nd edition 2010/2011 organized by the EMAS ARTA (Regional Environmental Protection Agency) school of the Abruzzo Region.

• RESEARCH ACTIVITIES

The scientific research activity has been carried out by the undersigned in the following areas:

1. Heat Transfer and Thermodynamics of the Building-Plant System;
2. Applied acoustics;
3. Thermodynamic properties of refrigerants and their behaviour in heat transfer processes;
4. Lighting technology, natural light transport systems and passive solar systems;
5. Thermographic investigations in Architecture and Fluid Dynamics.

• RESEARCH PROJECTS

Currently Substitute Principal Investigator in the Research Project of Relevant National Interest (PRIN – PNRR) "*SoundSIRC*" (The Sound in the Digital Era: Spaces, Identity, Rights and Culture).

• PATENTS

European patent n° 10192117.9 entitled: "A multilayer structure frontally closing a transparent surface in a building for natural ventilation and lighting" (corresponding Italian patent application n° RM 2009000616).

- **INTERNAL ASSIGNMENTS**

Within the INGEO Department he currently holds the following roles:

Member of the Department Joint Committee as representative of the professors of the L23 degree course in Construction Engineering;

Member of the Teaching Committee of the Construction Engineering course;

Director of the "Building Physics and Energy Systems" Laboratory of the INGEO Department.

- **INTERNATIONAL JOURNAL REVIEWS**

2009: reviewer of the journal Applied Thermal Engineering;

2012: reviewer of the journal Solar Energy;

2013: reviewer of the journal Solar Energy;

2019: Computation Journal Reviewer (MDPI)

2019: Auditor of the journal Energies (MDPI)

2020: Journal of Daylighting magazine reviewer

2022: Journal of Daylighting magazine reviewer

- **LIST OF PUBLICATIONS**

(1) P. Principi, P. Zazzini, Analysis of some heat transfer phenomena in underground pipes, Quaderno FT-HT-5, Department of Energy, University of Ancona, March 1989. 2) C. Di Perna, M. Paroncini, R. Ricci, P. Zazzini, "Thermal diode" effect by natural convection in vertical non-rectangular cavities, VIII National Congress on Heat Transmission UIT, Ancona, 28-29 June 1990. (3) R. Paoloni, P. Zazzini, Determination of the unitary thermal conductance of a vertical wall in situ by the use of the technique of thermoflowmeters and IR thermography, Quaderno FT/HT-6, Department of Energetics, University of Ancona, April 1990. (4) C. Baroncini, E. Mattei, P. Principi, P. Zazzini, Acoustic characterization of two classrooms of the Faculty of Architecture of Chieti and proposals for acoustic remediation, Quaderno WP/A-3, Department of Energy, University of Ancona, December 1990.

(5) E. Grinzato, P.G. Bison, A. Mazzoldi, G. Cesini, R. Ricci, P. Zazzini, In situ Quality control of cold store by IR Thermography and Image processing, XVIII International Congress of Refrigeration, Montreal 10-17 August 1991.

(6) P. Principi, S. Meloni, E. Ruffini, P. Zazzini, Analysis of the thermal behaviour of radiant panels in false ceilings, 47th National Congress of the ATI, Parma, 15-18 September 1992. (7)

C. Baroncini, E. Mattei, P. Zazzini, Study and optimization of a reverberation chamber with a 1:10 variable geometry model, XX AIA National Conference, Rome, 8-10 April 1992. (8) E.

Mattei, G. Giuliani, P. Zazzini, C. Baroncini, Realizzazione ed ottimizzazione di una camera reverberante a piano irregular, XXII Convegno Nazionale AIA, Lecce, 13-15 April 1994

(9) E. Mattei, P. Zazzini, La camera reverberante nella misura della potenza sonora di fonti di

- rumore, Convegno DbA, Modena, 20-22 Ottobre 1994. (10) G. Giuliani, S. Kumar, F. Polonara, P. Zazzini, Experimental determination of vapour pressure of 1,1,1-Trifluoroethane (R143a), International Conference CFC's, THE DAY AFTER, Padova 21 - 23 September 1994. (11) L. Laurenti, F. Marcotullio, P. Zazzini, D. Di Sano, Acoustic correction of the Auditorium of the Spanish Fortress in L'Aquila by means of architectural restoration of the hall: comparison with the results of a previous survey, II International Conference of Acoustics and Musical Research CIARM 95, Ferrara 19-21 May 1995.
- (12) L. Laurenti, F. Marcotullio, P. Zazzini, Unsteady thermal analysis of residential spaces equipped with radiant panel systems, by means of the Z-Transfer Functions, 5th Conference of Science and Technology Building Physics in Theory and Practice, Lodz, Poland, 26-29 June 1995. (13) G. Giuliani, S. Kumar, F. Polonara, P. Zazzini, Vapour pressure and gas phase PvT data and correlation for 1,1,1 - Trifluoroethane (R143a), "Journal of Chemical and Engineering Data", July-August 1995.
- (14) L. Laurenti, P. Zazzini, D. Di Sano, Acoustic characterization of the Auditorium of the Non-Commissioned Officers School of the Guardia di Finanza "V. Giudice" in L'Aquila, XXIII AIA National Conference, Bologna, 12-14 September 1995.
- (15) C. Baroncini, G. Giuliani, S. Monosi, P. Zazzini, Experimental evaluation of the mechanical and thermophysical properties of new materials used in restoration of historical buildings, "Materials Engineering", vol. 7 n. 4 pp. 489-496, 1996, Ed. Chapman and Hall. 16) C. Baroncini, G. Giuliani, P. Zazzini, Correlations for the evaluation of some characteristic parameters of humid air, Quaderno FT/AU 1, Department of Sciences, History of Architecture and Restoration, University "G. D'Annunzio", Chieti, April 1996. (17) L. Laurenti, F. Marcotullio, P. Zazzini, Parametric study of the performance of radiant floor panels through the use of transfer functions in two-dimensional geometries, 37th AICARR Annual Conference - Milan 29-30 March 1996.
- (18) L. Laurenti, F. Marcotullio, P. Zazzini, Measurements of the heat transfer coefficient in flow boiling and condensation of new refrigerants, 4th World Conference on Experimental Heat Transfer, Fluid Mechanics and Thermodynamics, Brussels, June 2-6 1997. (19) L. Laurenti, F. Marcotullio, P. Zazzini, Influence of the temperature distribution of the supply water on the thermal performance of heating radiant panels by means of the Transfer Function Method, 6th Conference of Science and Technology Building Physics in Theory and Practice, Lodz, Poland, 17-21 June 1997.
- (20) L. Laurenti, F. Marcotullio, P. Zazzini, Characterization of thermal bridges by means of the technique of transfer functions, "Conditioning of Air", n. 2 February 1998. (21) B. Calcagni, A. Manni, M. Paroncini, P. Zazzini, Scale performance for Atria Building, Proceedings of World Renewable Energy Congress '99, Kuala Lumpur, Malaysia, June 1999.
- (22) B. Calcagni, A. Manni, M. Paroncini, P. Zazzini, Comparison of experimental measurements and numerical simulation in an atrium building, ISES 1999, Solar World Congress, Jerusalem, Israel, 4-9 July 1999.
- (23) B. Calcagni, M. Paroncini, P. Zazzini, Analysis and optimization of the lighting system of a motorway tunnel, 54th ATI National Congress, L'Aquila, 14-17 September 1999. (24) B. Calcagni, M. Paroncini, P. Zazzini, Study of the configuration of a bioclimatic atrium building: influences on daylight conditions, 54th ATI National Congress, L'Aquila, 14-17 September 1999.
- (25) S. Montelpare, M. Paroncini, R. Ricci, P. Zazzini, Flow visualization of the Laminar Separation Bubble phenomena by Infrared Thermography investigations, 5th International Workshop on Advanced Infrared Technology and Applications, Venice 29-30 September 1999.
- (26) M. Paroncini, P. Zazzini, Study of the propagation of daylight in atrium buildings by numerical analysis and experimentation on a scale model, AIDI Genoa Conference 25-26 November 99. (27) M. C. Forlani, P. Zazzini, Il suono nello spazio: origini e problemi dell'acustica architetto, in: "Spazi per lo spettacolo e riuso, una ipotesi di attrezzatura

territoriale", edited by M. C. Forlani, Gangemi Editore, pp. 115-122, December 1999. (28) P. Zazzini, Gli indice di qualità acustica delle sala, in: "Spazi per lo spettacolo e riuso, una ipotesi di attrezzatura territoriale", edited by M. C. Forlani, Gangemi Editore, pp. 135-146, December 1999. (29) P. Zazzini, Acoustic projects for the reconversion of spaces for the show, in: The indices of acoustic quality of the halls, in: "Spaces for the show and reuse, a hypothesis of territorial equipment", edited by M. C. Forlani, Gangemi Editore, pp. 147-162, December 1999. (30) S. Montelpare, R. Ricci, P. Zazzini, Laminar separation bubble visualization by I. R: Thermography, IX International Symposium on Flow Visualization, Edinburgh Scotland UK, 22-25 August 2000.

(31) C. Baroncini, M. Paroncini, P. Zazzini, The propagation of daylight inside atrium buildings: results of a numerical and experimental analysis on a scale model, 55th ATI National Congress, Bari-Matera, 15-18 September 2000.

(32) C. Baroncini, M. Paroncini, P. Zazzini, Experimental and Numerical Evaluation of Daylight in Atrium Building, IX Lux Europa, Reykjavik 18-20 June 2001.

(33) L. Laurenti, F. Marcotullio, P. Zazzini, Experimental Thermal behaviour of a Room Heated by a Radiant Panels System, CLIMA 2000 Naples 15-18 September 2001 (34) G. Cesini, S. Montelpare, R. Ricci, P. Zazzini, A thermographic method for the study of the laminar boundary layer separation phenomenon in bodies operating with a low Reynolds number, 56th ATI Congress, Naples 10-14 September 2001 (35) P. Zazzini, Topics of the Technical Plants module, in: "Construction and use of the land", edited by M. C. Forlani, Maggioli Editore, pp. 159-172, December 2001.

(36) L. Laurenti, F. Marcotullio, P. Zazzini, A Proposal for the Calculation of Panel Heating and Cooling System Based on the Transfer Function Method, Presented at the ASHRAE Winter Meeting 12-16 January 2002, Atlantic City, New Jersey, published in ASHRAE Transactions 2002, V. 108, Pt.1.

(37) G. Borrelli, S. Montelpare, R. Ricci, P. Zazzini, Evaluation of the phenomena of local separation of the boundary layer on aerodynamic bodies operating at low Reynolds numbers through the use of thermography, XX UIT National Congress, Maratea 27-29 June 2002. (38) C. Baroncini, A. Iannotti, E. Mattei, P. Zazzini, Study for the reuse of the cloister of S. Francesco alle Scale in Ancona as a multifunctional site for musical events, XXXI National Conference of the Italian Association of Acoustics, Venice 05-07 June 2004. (39) C. Baroncini, B. Calcagni, F. Chella, P. Zazzini, Experimental analysis of the performance obtainable with light tubes and comparison with traditional systems for capturing natural light, Congegno Nazionale AIDI, Genoa 15 – 17 November 2004. (40) C. Baroncini, F. Chella, A. Scarduzio, P. Zazzini, Natural light transport systems: experimental analysis in full and reduced scale and comparison between the results obtained, 60th National Congress of ATI, Rome 13-15 September 2005 (41) C. Baroncini, F. Chella, P. Zazzini, Internal propagation of natural light: Light from a large window and from two light tubes with fixed collector, Luce n°4, 2006, pp. 56-61 (42) F. Chella, P. Zazzini, G. Carta, Compared numerical and reduced scale experimental analysis on light pipes performances, 5th International Conference on Sustainable Energy Technologies SET 2006, Vicenza Italy 30 August-01 September 2006; (43) C. Baroncini, F. Chella, P. Zazzini, Experimental analysis of tubular light pipes performances: influence of the diffuser on inside distribution of light, 5th International Conference on Sustainable Energy Technologies SET 2006, Vicenza Italy 30 August-01 September 2006; (44) P. Zazzini, F. Chella, A. Scarduzio, Numerical and experimental analysis of light pipes' performances: comparison of the obtained results, PLEA 2006 – The 23rd Conference on Passive and Low Energy Architecture, Geneva, Switzerland 6-8 September 2006. (45) C. Baroncini, M. C. Forlani, A. Iannotti, E. Mattei, P. Zazzini, Il chiostro di S. Francesco alle Scale di Ancona: un possibile sito polifunzionale per eventi musicali, in: "Intersezioni Disegni", edited by C. Mezzetti/ Edizioni Kappa, Rome, pp. 17-26, March 2007; (46) C. Baroncini, M. Padroncini, P. Zazzini, La luce diurna negli edifici ad atrio: risultati di una analisi numerica e sperimentale su modello in scala, in: "Intersezioni

- Disegni", edited by C. Mezzetti/ Edizioni Kappa, Rome, pp. 27-34, March 2007; (47) F. Chella, E. Gentile, P. Zazzini, Natural light in new underground areas of a historical building: an example of application of double light pipes in preservation of the architectonic heritage, 6th International Conference on Sustainable Energy Technologies SET 2007, Santiago de Chile, 5-7 September 2007; (48) C. Baroncini, F. Chella, P. Zazzini, Numerical and experimental analysis on "Double Light Pipe", a new system for daylight distribution in interior spaces, 6th International Conference on Sustainable Energy Technologies SET 2007, Santiago de Chile, 5-7 September 2007, "International Journal of Low Carbon Technologies" vol. 3, Number 2, pp. 110-125, Manchester University Press, April 2008, ISSN 1748-1317; (49) P. Zazzini, Tecniche di climatizzazione passivi dell'architettura, in: "Recupero e riqualificazione del borgo di Castelbasso (TE), un'esperienza di progettazione ambientale", edited by M.C. Forlani and A. Basti, Alinea Editrice, pp. 151-159, June 2008; (50) O. Boccia, F. Chella, P. Zazzini, Energy savings obtainable in commercial areas through the installation of light tubes, "LUCCE", n. 4 – 2008, pp. 39-49.
- (51) C. Baroncini, O. Boccia, F. Chella, P. Zazzini, Double light pipe: experimental analysis on reduced scale models and comparison with numerical results, LUXEUROPA 2009, Istanbul, Turkey, 07-11 September 2009; (52) C. Baroncini, O. Boccia, F. Chella, P. Zazzini, The Double Light Pipe, an innovative daylight technological device, Solar Energy, 84 (2010), pp.296-307; (53) O. Boccia, F. Chella, P. Zazzini: Numerical analysis on daylight transmission and thermal comfort in the environments containing devices called "Double Light Pipes (DLP)", World Renewable Energy Congress 2011 – 8-11 May 2011, Linköping, Sweden. (54) O. Boccia, F. Chella, P. Zazzini: Ventilated Illuminating Wall (VIW): Natural ventilation experimental analysis on a 1:1 prototype scale model, World Renewable Energy Congress 2011 – 8-11 May 2011, Linköping, Sweden. (55) O. Boccia, F. Chella, P. Zazzini : Ventilated Illuminating Wall (VIW): Natural ventilation numerical analysis and comparison with experimental results, World Renewable Energy Congress 2011 – 8-11 May 2011, Linköping, Sweden. (56) O. Boccia, F. Chella, P. Zazzini : Innovative devices for Daylighting and Natural Ventilation in Architecture, in: "SOLAR RADIATION", edited by Elisha B. Babatunde, INTECH, Croatia, March 2012, ISBN 978-953-51-0384-4
- (57) O. Boccia, F. Marcotullio, P. Zazzini: The method of transfer functions: expressions of the coefficients ξ , η , ζ and Φ of homogeneous walls as a function of R and C, La Termotecnica, November 2012, pp. 61-67
- (58) O. Boccia; F. Chella; P.Zazzini: Natural light from a wall in buildings: experimental analysis of the ventilated illuminating wall performances, Solar Energy 108 (2014), pp.178-188, ISSN:0038-092X
- (59) O. Boccia, P. Zazzini: Daylight in buildings equipped with traditional or innovative sources: A critical analysis on the use of the scale model approach, Energy and Buildings 86 (2015), pp.376-393, DOI:10.1016/j.enbuild.2014.10.003.
- (60) F. Rizzo, P. Zazzini, Improving the acoustical properties of an elliptical plan space with a cable net membrane roof, ACOUSTICS AUSTRALIA 44(3) - (2016), pp.449-456. DOI:10.1007/s40857-016-0072-5.. In - ISSN:0814-6039
- (61) C. Pellegrino, P. Zazzini, Standard And Innovative Energy Improvement Strategies In School Buildings Through Numerical Analysis. A case study in Italy, Journal of Multidisciplinary Engineering Science and Technology, 3(5) - (2016), pp.4940-4953
- (62) P. Zazzini, S. Montelpare, A. Basti, Climate dependence of energy saving strategies in public buildings characterized by change of use: an original case study, Energy Efficiency 11(2) - (2017), pp.1-21, DOI:10.1007/s12053-017-9585-5, ISSN:1570-646X
- (63) F. Rizzo, P. Zazzini, Shape Dependence of Acoustic Performances of Buildings with a Hyperbolic Paraboloid Cable Net Membrane Roof, Acoustics Australia 45(2) - (2017), pp.421-443, DOI:10.1007/s40857-017-0092-9, ISSN:0814-6039

- (64) P. Zazzini, M. Capone, Energy efficiency improvements in historic buildings: analysis of a case study in central Italy, *Modelling, Measurement & Control B, Solid & Fluid Mechanics & Thermics, Mechanical Systems*, 87(3) – (2018), pp.135-142, DOI:10.18280/mmc-b.870304, ISSN:1259-5969
- (65) P. Zazzini, G. Grifa, Energy Performance Improvements in Historic Buildings by application of green walls: numerical analysis of an italian case study, *Energy Procedia*, 148 (2018), pp.1143-1150, DOI:10.1016/j.egypro.2018.08.028, ISSN:1876-6102.
- (66) F. Rizzo, P. Zazzini, S. Montelpare, A. Ricciutelli, Investigation of wind induced vibration and acoustic performance interactions for a flexible roof through multiphysics approach, *Journal Of Building Performance Simulation*, 13/5 (2020), pp. 555–582, doi.org/10.1080/19401493.2020.1809015
- (67) P.Zazzini, .A. Romano, A. Di Lorenzo, V. Portaluri, A. Di Crescenzo, Experimental Analysis of the Performance of Light Shelves in Different Geometrical Configurations Through the Scale Model Approach, *Journal of Daylighting* 7 (2020), pp. 37-56, doi:10.15627/jd.2020.4
- (68) F. Rizzo, P. Zazzini, A. Pasculli, A. Di Crescenzo, Statistical approach to compute a surrogate input for building physics CFD simulations through experimental measurements, *Journal of Computational Methods in Sciences and Engineering* 20 (2020), pp. 909–936 DOI 10.3233/JCM-204379
- (69) P. Zazzini, A. Di Crescenzo, R. Giammichele, Numerical analysis of the performance of an innovative daylighting system named Modified Double Light Pipe, 6th AIGE/IIETA International Conference and 15th AIGE 2021 Conference, Ancona (Italy), 8-9 July 2021
- (70) P. Zazzini, A. Di Crescenzo, R. Giammichele, Daylight performance of the Modified Double Light Pipe (MDLP) through experimental analysis on a reduced scale model. *Journal of Daylighting* 9 (2022), pp. 164-176
- (71) P. Zazzini, A. Di Crescenzo, L. P. Rossitti, R. Mirando, Experimental Analysis on a 1:2 Scale Model of the Modified Double Light Pipe. *Journal of Daylighting* 9 (2022), pp. 228-241.
- (72) P. Zazzini, Daylight performance of the Modified Double Light Pipe (MDLP) through yearly experimental tests on a scale model of the system, *Solar Energy* 266 (2023), pp. 1-19.



(Paolo ZAZZINI)

Pescara 19 March 2026