

Giovanni Pernigotto

UNIVERSITY ACADEMIC CURRICULUM VITAE

[1] Personal information

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[2] Education since leaving school

[2.1] 2007 - Bachelor Degree in Management Engineering at the University of Padova

Thesis title: “Analisi delle metodologie di calcolo delle prestazioni dei sistemi solari termici ai fini della certificazione energetica degli edifici” (English title: “Analysis of the calculation methodologies of the performance of the solar thermal systems for buildings energy certification”).

Final mark: 107/110.

Supervisors:

- (1) Prof. A. Gasparella (University of Padova, now Free University of Bozen-Bolzano),
- (2) Mr. M. Pagani (freelance professional).

[2.2] 2009 - Master Degree in Management Engineering - curriculum of Logistics and Production at the University of Padova

Thesis title: “Analisi del comportamento dinamico dell’involucro edilizio: metodologie di calcolo e determinazione delle prestazioni estive” (English title: “Analysis of the building envelope dynamic behaviour: calculation methodologies and summer performance evaluation”).

Final mark: 110/110 cum laude.

Supervisors:

- (1) Prof. A. Gasparella (University of Padova, now Free University of Bozen-Bolzano),
- (2) Prof. P. Baggio (University of Trento)
- (3) Prof. M. Baratieri (Free University of Bozen-Bolzano).

[2-3] **2013 - Doctor of Philosophy in Industrial Engineering Awarded with the “Doctor Europaeus” honour label at the University of Padova, Doctoral School in Industrial Engineering**

PhD Thesis title: "Evaluation of building envelope energy performance through extensive simulation and parametrical analysis".

Supervisors:

- (1) Prof. A. Gasparella (Free University of Bozen-Bolzano),
- (2) Prof. J.L.M. Hensen (Eindhoven University of Technology, Eindhoven, The Netherlands).

[3] Present position

Since 01/07/2020: Assistant Professor in Building Physics and Energy Systems (Senior researcher with a fixed-term contract RTD-B) at the Free University of Bozen-Bolzano (UNIBZ), Faculty of Science and Technology
(<https://webservices.scientificnet.org/rest/uisdata/api/v1/tenders/attachments/41941>)

Assistant Professor in Building Physics and Energy Systems (Junior researcher with a fixed-term contract RTD-A) at the Free University of Bozen-Bolzano (UNIBZ), Faculty of Science and Technology

Period: from 01/07/2017 to 30/06/2020.

Employer: Free University of Bozen-Bolzano, Faculty of Science and Technology.

Supervisor: Prof. A. Gasparella.

Description of current activities:

My research activity at the Free University of Bozen-Bolzano is related to the following main areas:

- the characterization of the dynamic behaviour of the opaque components, both numerically and through experimental laboratory tests, in particular assessing the impact of different moisture content in timber structures;
- the characterization of the thermal and visual behaviour of simple and complex fenestration systems through experimental campaigns in situ (e.g., UNIBZ living labs);
- the assessment via simulation of the energy performance of buildings and the analysis of the historical data of final uses of the existing building stock, with the aim of identifying reference cases and optimized energy efficiency measures in the framework of building refurbishment;
- building simulation at district / urban scale and definition of energy policies;
- the assessment of indoor environmental quality conditions, especially in school buildings, in particular related to thermal-hygrometric comfort, visual comfort and indoor air quality IAQ, as well as to the impact on occupants' performance and productivity;

- the study of climatic boundary conditions for building energy simulation analyses - modelling of solar irradiance, analysis of multi-year weather data series, climatic classification.

Participation to projects: [7.1-7.11] and [7.14-7.22].

Published and Developed Research: [11-20; 41-49; 72-78; 86,87].

[4] Academic Professional experience

List of all previous academic employments, starting from the most recent ones.

[4.1] Assistant Professor in Building Physics and Energy Systems (Junior Researcher with a fixed-term contract RTD-A without teaching appointment) at the Free University of Bozen-Bolzano, Faculty of Science and Technology

Period: from 15/02/2016 to 30/06/2017.

Employer: Free University of Bozen-Bolzano, Faculty of Science and Technology.

Supervisor: Prof. A. Gasparella.

Main activities:

- Development of the building physics research laboratories at the NOI Technology Park funded by the Autonomous Province of Bozen-Bolzano (section: Klimahouse and Energy Production, main coordinator: prof. A. Gasparella), specifically for:
 - the laboratory for the thermal physical characterization of building envelope components in transient conditions (LAB 1);
 - the laboratory for the study of handling and distribution of thermal fluids in air-conditioning systems (LAB 2);
 - and the external laboratory for the analysis of the response of the building systems under real climatic solicitations (LAB 3).
- Participation to projects: [7.12-7.13] and [7.22].

Published and Developed Research: [8-10; 39,40; 66-71].

[4.2] Research fellow at the University of Padova, Department of Management and Engineering

Period: from 15/02/2014 to 14/02/2016.

Employer: University of Padova, Department of Management and Engineering.

Supervisor: Prof. C. Zilio.

Activities:

- Main project: European Research Project TOICA - “Thermal Overall Integrated Conception of Aircraft” (project [7.29]).
- Participation to projects: [7.28] and [7.29].

Published and Developed Research: [6,7; 31-38; 63-65].

[4.3] **Research fellow at the Free University of Bozen-Bolzano, Faculty of Science and Technology**

Period: from 15/01/2013 till 14/01/2014.

Employer: Free University of Bozen-Bolzano, Faculty of Science and Technology.

Supervisor: prof. A. Gasparella.

Activities:

- Main project: Air-to-air heat recovery in HVAC systems (project [7.23]).
- Participation to projects: [7.23] and [7.24].
- Published and Developed Research: [4,5; 25-30; 61,62].

[4.4] **PhD Student at the University of Padova, Department of Management and Engineering**

Period: 3-year contract as PhD Student, from 01/01/2010 till 31/12/2012.

Employer: University of Padova, PhD School of Industrial Engineering.

Funded by: Fondazione Studi Universitari di Vicenza (FSU).

Supervisors: Prof. A. Gasparella, Prof. J.L.M. Hensen.

Activities:

- Main research topic: "Evaluation of building envelope energy performance through extensive simulation and parametrical analysis".
- Participation to projects: [7.25-7.27] and [7.30].
- Published and Developed Research: [1-3; 21-24; 50-60; 79-85; 88].

[4.5] **Guest PhD Student at TU/E (Eindhoven University of Technology), Department of the Built Environment, Research Group of Building Physics and Services**

Period: from 03/09/2012 till 21/12/2012.

Supervisor: Prof. J.L.M. Hensen.

Main topic: "Long term evaluation of building energy performance: comparison of the test reference year and historical data series in the North Italy climates".

Related research: [4; 25; 88].

[5]
Experience in
academic
teaching

Current teaching appointments at the Free University of Bozen-Bolzano (A.Y. 2019-2020):

- **Special Issues of Building Physics** (Lecture hours: **60 h**; Master Degree in Energy Engineering (LM-30), II yr, I semester; Language: English).
- **Applicazioni delle norme sull'efficienza energetica in edilizia / Application of technical standards for building energy efficiency** (Lecture hours: **25 h**; Bachelor in Industrial Mechanical Engineering (L-9), optional course, II semester; Language: Italian).
- **High-Performance Buildings: Comfort, Energy Efficiency** (Lecture hours: **10 h**; Bachelor in Wood Engineering (L-9), II semester; Language: English).

List of teaching experiences in previous academic years, starting from the most recent ones.

Academic Year: 2018 – 2019

[5.1] **Special Issues of Building Physics**

Lecture hours: **60 h**.

University: Free University of Bozen-Bolzano.

Degree: Master Degree in Energy Engineering (LM-30), II yr, I semester.

Language: English.

[5.2] **Applicazioni delle norme sull'efficienza energetica in edilizia / Application of technical standards for building energy efficiency**

Lecture hours: **25 h**.

University: Free University of Bozen-Bolzano.

Degree: Bachelor in Industrial Mechanical Engineering (L-9), optional course, II semester.

Language: Italian.

Academic Year: 2017 – 2018

[5.3] **Special Issues of Building Physics**

Lecture hours: **36 h**.

University: Free University of Bozen-Bolzano.

Degree: Master Degree in Energy Engineering (LM-30), II yr, I semester.

Language: English.

[5.4] **Applicazioni delle norme sull'efficienza energetica in edilizia / Application of technical standards for building energy efficiency**

Lecture hours: **25 h**.

University: Free University of Bozen-Bolzano.

Degree: Bachelor in Industrial Mechanical Engineering (L-9), optional course, II semester.

Language: Italian.

[5.5] **Comportamento dell'involucro edilizio (invernale ed estivo) / Winter and summer behavior of the building envelope**

Lecture hours: **8 h**.

University: Free University of Bozen-Bolzano.
Degree: II Level Master "BEE - Building, Energy and Environment.
CasaClima" (BEE).
Language: Italian.

[5.6] **Metodi di calcolo semplificati per la certificazione energetica della prestazione energetica / Simplified calculation methods for the energy performance certification**

Lecture hours: **8 h.**

University: Free University of Bozen-Bolzano.

Degree: II Level Master "BEE - Building, Energy and Environment.
CasaClima" (BEE).

Language: Italian.

[5.7] **Simulazione, monitoraggio e diagnosi energetica / Simulation, monitoring and energy auditing**

Lecture hours: **20 h.**

University: Free University of Bozen-Bolzano.

Degree: II Level Master "BEE - Building, Energy and Environment.
CasaClima" (BEE).

Language: Italian.

[5.8] **Bilancio energetico dell'edificio / Building energy balance**

Lecture hours: **12 h.**

University: IUAV of Venezia.

Degree: II level Master "BEAM" ("Master in Processi Costruttivi Sostenibili BEAM - Building Environmental Assessment and Modeling").

Language: Italian.

[5.9] **Simulazione energetica dinamica degli edifici / Dynamic building energy simulation**

Lecture hours: **46 h.**

University: IUAV of Venezia.

Degree: II level Master "BEAM" ("Master in Processi Costruttivi Sostenibili BEAM - Building Environmental Assessment and Modeling").

Language: Italian.

Academic Year: 2016 – 2017

[5.10] **Tools for empirical and numerical assessment of energy systems**

Lecture hours: **6 h.**

University: Free University of Bozen-Bolzano.

Degree: PhD Course in Sustainable Energy and Technologies.

Language: English.

Academic Year: 2015 – 2016

- [5.11] **Bilancio energetico dell'edificio / Building energy balance**
Contract Professor (“Professore a contratto”).
Lecture hours: **20 h**.
University: IUAV of Venezia.
Degree: II level Master “BEAM” (“Master in Processi Costruttivi Sostenibili BEAM - Building Environmental Assessment and Modeling”).
Language: Italian.
- [5.12] **Simulazione energetica dinamica degli edifici / Dynamic building energy simulation**
Contract Professor (“Professore a contratto”).
Lecture hours: **42 h**.
University: IUAV of Venezia.
Degree: II level Master “BEAM” (“Master in Processi Costruttivi Sostenibili BEAM - Building Environmental Assessment and Modeling”).
Language: Italian.

Academic Year: 2014 – 2015

- [5.13] **Comportamento dell'involucro edilizio (invernale ed estivo) / Winter and summer behavior of the building envelope**
Contract Professor (“Professore a contratto”).
Lecture hours: **24 h**.
University: Free University of Bozen-Bolzano.
Degree: II level Master “Casaclima” (“Master CasaClima – La prestazione energetica degli edifici. Progettazione, ottimizzazione e utilizzo”).
Language: Italian.
- [5.14] **Bilancio energetico dell'edificio / Building energy balance**
Contract Professor (“Professore a contratto”).
Lecture hours: **14 h**.
University: IUAV of Venezia.
Degree: II level Master “BEAM” (“Master in Processi Costruttivi Sostenibili BEAM - Building Environmental Assessment and Modeling”).
Language: Italian.
- [5.15] **Fisica tecnica / Technical Physics**
Teaching assistant.
Teaching assistance hours: **20 h**.
Class exercise hours: **20 h**.
University: University of Trento.
Degree: Bachelor in Civil Engineering (“Laurea Triennale in

Ingegneria Civile”) and Bachelor in Engineering for the Environment and the Territory (“Laurea Triennale in Ingegneria per l’Ambiente e il Territorio”).

Language: Italian.

[5.16] Tecnica del controllo ambientale / Environment control techniques

Teaching assistant.

Teaching assistance hours: **15 h.**

Class exercise hours: **15 h.**

University: University of Trento.

Degree: Master Degree in Civil Engineering (“Laurea Magistrale in Ingegneria Civile”).

Language: Italian.

Academic Year: 2011 – 2012

[5.17] Renewable energies

Teaching assistant.

Teaching assistance hours: **16 h.**

Class exercise hours: **20 h.**

University: Free University of Bozen-Bolzano.

Degree: Bachelor in Logistics and Production Engineering and Bachelor in Agricultural Science and Agricultural Technology.

Language: English.

Academic Year: 2010 – 2011

[5.18] Sistemi energetici / Energy systems

Teaching assistant.

Teaching assistance hours: **50 h.**

Class exercise hours: **30 h.**

University: Free University of Bozen-Bolzano.

Degree: Bachelor in Logistics and Production Engineering.

Language: Italian.

OTHER TEACHING ASSISTANCE ACTIVITIES PERFORMED WITHOUT OFFICIAL APPOINTMENT

Academic Years: 2014 – 2015, 2015 – 2016, 2016 - 2017

Assistance activity for the preparation of 2 exercise hours about finite elements numerical methods for heat transfer problems during the course “Scambio termico nelle apparecchiature elettroniche” (Heat transfer in electronic equipment; prof. G.A. Longo (2014-2015) and prof. C. Zilio (2015-2016; 2016-2017), Master Degree in Mechatronic Engineering, University of Padova).

Academic Year: 2012 - 2013

Assistance activity for the preparation of 6 lecture hours on solar radiation and heat transfer through the ground modelling during the course “Modelling

Methods for Applied Physics” (prof. A. Gasparella, Doctoral School in Sustainable Energy and Technologies, Free University of Bozen-Bolzano).

Assistance activity for the preparation of 4 lecture hours on dynamic simulation during the course “Advanced Applications of Building Physics” (prof. A. Gasparella, Master Degree in Energy Engineering, Free University of Bozen-Bolzano).

Academic Year: 2010 - 2011

Assistance activity for the preparation of 12 lecture hours on dynamic simulation during the II level Master “Casaclima”, Free University of Bozen-Bolzano (prof. A. Gasparella, Free University of Bozen-Bolzano).

Academic Year: 2009 - 2010

Assistance activity for the preparation of 6 exercises hours about finite difference numerical methods for the calculation of heat transfer problems during the course “Progetto e Verifica Termica” (“Thermal Design and Diagnosis”; prof. A. Gasparella, Bachelor in Mechanical Engineering, University of Padova).

THESIS AND INTERNSHIP TUTOR (45 defended theses)

Co-supervisor of 38 defended theses:

(1) **Free University of Bozen-Bolzano:**

- 1 PhD Thesis
Luca Zaniboni, thesis title: “Investigation on the indoor environmental comfort perceived by employees and patients of physiotherapy centers through experimental subjective and objective surveys”
- 2 II level Master theses
- 15 Master Degree theses
- 1 Bachelor Degree thesis

(2) **University of Padova:**

- 9 Master Degree theses
- 6 Bachelor Degree theses

(3) **University of Trento:**

- 1 Master Degree thesis

(4) **University IUAV of Venice:**

- 1 II level Master thesis
- 2 Master Degree theses

Supervisor of 7 defended theses:

(1) **Free University of Bozen-Bolzano:**

- 3 II level Master theses
- 2 Bachelor Degree theses

(2) **University IUAV of Venice:**

- 2 II level Master theses

Academic tutor of 4 internships (2 Bachelor Student and 2 Master Degree Student at the Free University of Bozen-Bolzano).

Current co-supervision of the following PhD Candidates at the PhD Programme in Sustainable Energy and Technologies at the Free University of Bozen-Bolzano:

- Fahad Haneef, cycle 33, topic “Technical and economic evaluation of RES integration in urban energy systems”;
- Maja Danovska, cycle 34, topic “Managing the humidity in buildings”;
- Riccardo Albertin, cycle 35, topic “Modeling Airflows and Infiltration Rates in Building Simulations”;
- Federico Battini, cycle 35, topic “Urban building energy modeling”.

PhD Examiner and reviewer:

- 27/03/2020, University of Udine, PhD in Environmental and Energy Engineering Science, member of the final examination committee.
- Founding member of IBPSA-Italy, the IBPSA Italian affiliate (International Building Performance Simulation Association; <http://www.ibpsa-italy.org/it/>).
- Member of the organizing committee of BSA 2015, BSA 2017 and BSA 2019 – II, III and IV IBPSA-Italy Congress (<http://bsa.events.unibz.it/>), and microCHP16 (<http://uchp.events.unibz.it/>).
- Member of the Students Tutoring Scientific Committee of BSA 2017 (<http://bsa.events.unibz.it/bsa-2017/committees/>) and BSA 2019 (<http://bsa.events.unibz.it/bsa-2019/committees/>).

**[6]
Membership**

**[7] Research
projects**

Projects at the Free University of Bozen-Bolzano (UNIBZ) since 2016, funded by external private or public companies, listed from the most recent.

[7.1] ProCasaClima: Consultancy activity for the validation of the ProCasaClima dynamic simulation module

Funded by: KlimaHaus Agentur / Agenzia CasaClima (Energy Agency for South Tyrol).

PI: prof. A. Gasparella.

CO-PI: Dr. G Pernigotto.

Budget: 20'000 EUR + VAT.

Period: 12.2019-07.2020 (status of the project: *ongoing*).

Topic and activities: Assessment of the EN ISO 52016-1 hourly method implemented in the software ProCasaClima by KlimaHaus Agentur for the calculation of building energy needs for space heating and cooling, validation according to the ANSI/ASHRAE 140 BESTEST method, and sensitivity analysis on the software inputs.

[7.2] Rotho-bridge: Analysis of thermal bridges for the connection between vertical walls and foundations in timber structures

Funded by: Rotho Blaas Srl.

PI: prof. A. Gasparella.

CO-PI: Dr. G Pernigotto.

Budget: 1'500 EUR + VAT.

Period: 10.2019-12.2019.

Topic and activities: Numerical assessment of the linear thermal transmittance according to the technical standard EN ISO 10211 and 2D FEM models for a set of construction details regarding the connection between vertical walls and foundations in timber buildings.

[7.3] ReBuild-BZ: Development of strategies for the energy retrofitting of the private building stock in the municipality of Bolzano

Funded by: Municipality of Bozen-Bolzano.

PI: prof. A. Gasparella.

Budget: 13'000 EUR + VAT.

Period: 08.2019-08.2020 (status of the project: *ongoing*).

Topic: Supporting the Municipality of Bolzano for the definition of a subsidization and communication strategy for the energy retrofitting of the private building stock, in particular the residential dwellings in the municipality territory.

Specific activities of the researcher: analysis of the current framework of public subsidizations for building energy refurbishment, interviews with the main local stakeholders, analysis of the findings and contribution to the definition of building renovation strategy for the Municipality of Bozen-Bolzano.

[7.4] IndAIR-QAES: Indoor Air Quality in Educational Buildings - QAES

Funded by: Landesagentur für Umwelt (Autonome Provinz Bozen Südtirol).

PI: prof. A. Gasparella.

CO-PI: Dr. G Pernigotto.

Budget: 5'980 EUR + VAT.

Period: 08.2019-05.2020.

Topic and activities: Supporting the Environmental Agency of the Autonomous Province of Bozen-Bolzano in IAQ monitoring activities in local schools, processing of the collected data and contribution for the preparation of a database about IAQ in schools in the framework of the INTERREG project QAES.

[7.5] Lambda-Finstral: Tests of apparent thermal conductivity

Funded by: Finstral SpA.

PI: prof. A. Gasparella.

Budget: 400 EUR + VAT.

Period: 08.2019-09.2019.

Topic: Measurement of thermal resistance and apparent thermal conductivity of two specimens, with experimental apparatus based on the heat flux meter HFM and according to the technical standards ISO 8301, EN 1946-3 and ASTM C518.

Specific activities of the researcher: tests of thermal conductivity with HFM of the specimens, preparation of reports for the company.

[7.6] Lambda-EURAC: Tests of apparent thermal conductivity

Funded by: Eurac.

PI: prof. A. Gasparella.

CO-PI: Dr. G Pernigotto.

Budget: 100 EUR + VAT.

Period: 03.2019-04.2019.

Topic: Measurement of thermal resistance and apparent thermal conductivity of two specimens, with experimental apparatus based on the heat flux meter HFM and according to the technical standards ISO 8301, EN 1946-3 and ASTM C518.

Specific activities of the researcher: tests of thermal conductivity with HFM of the specimens, preparation of reports for the client.

[7.7] Piron: Experimental and numerical characterization of the thermal behaviour of professional ovens in the framework of the development of a control model

Funded by: Piron srl.

PI: Dr. G. Pernigotto.

CO-PI: prof. A. Gasparella.

Budget: 15'000 EUR + VAT.

Period: 02.2019-10.2019.

Topic and activities: Experimental tests on a set of new professional ovens, development of CFD models and a 0D heat and energy balance model to support the product development and development of for a set of new professional ovens.

- [7.8] **LignaWalls: Thermal conductance and resistance tests on timber wall specimens**
- Funded by:* IDM Südtirol - Alto Adige.
PI: prof. A. Gasparella.
Budget: 6'000 EUR + VAT.
Period: 09.2018-02.2019.
- Topic:* Evaluation of thermal conductance and transmittance of opaque components by means of the hotbox methods with heat flux meter according to the technical standards EN 1934, EN 1946-3 and ASTM C518.
- Specific activities of the researcher:* steady state tests according to EN 1934 of two timber walls with hotbox test rig, analysis of the results and preparation of reports.
- [7.9] **DH-BZ: Technical and economic analysis of the district heating system in the Municipality of Bozen-Bolzano.**
- Funded by:* Municipality of Bozen-Bolzano.
PI: prof. A. Gasparella.
Budget: 4'000 EUR + VAT.
Period: 11.2017-10.2018.
- Topic:* Technical and economic analysis of scenario for the district heating system of the Municipality of Bozen-Bolzano supplied by the local incineration system.
- Specific activities of the researcher:* collection and analysis of energy consumption data for both buildings served by Bolzano district heating system and those with independent heating system, technical and economic analyses with different building refurbishment and subsidization scenarios, presentations to technical and political staff of the Municipality of Bolzano.
- [7.10] **Cables-ROV: Numerical simulations of thermal performances of the tethering cables for Saipem ROV - Remotely Operated Vehicles.**
- Funded by:* University of Padova.
PI: dr. G. Pernigotto.
CO-PI: prof. A. Gasparella.
Budget: 4'000 EUR + VAT.
Period: 02.2018-09.2018.
- Topic and activities:* Development of FEM numerical transient models for the study of the thermal behaviour of a tethering cable adopted to control Saipem underwater ROVs.

[7.11] **Lambda: Thermal Conductivity tests (Technology and investment solutions LLC).**

Funded by: Technology and investment solutions LLC.

PI: prof. A. Gasparella.

Budget: 500 EUR + VAT.

Period: 05.2018-06.2018.

Topic: Measurement of thermal resistance and apparent thermal conductivity of two specimens, with experimental apparatus based on the heat flux meter HFM, according to the technical standards ISO 8301, EN 1946-3 e ASTM C518.

Specific activities of the researcher: tests of thermal conductivity with HFM of the specimens, preparation of reports for the company.

[7.12] **MuSa: Building energy simulation of a refurbished historical building: the museum "MuSa" of Salò.**

Funded by: eng. Paolo Zilio (IngenioTec).

PI: prof. A. Gasparella.

Budget: 3'000 EUR + VAT.

Period: 12.2016-02.2017.

Topic: Development of a building energy model of the recently refurbished historical building of the museum "MuSa" in Salò (Brescia, Italy), analysis of the building energy needs through EnergyPlus dynamic simulations and characterization of the building envelope energy performance.

Specific activities of the researcher: development of the EnergyPlus model, analysis of the results and preparation of reports.

[7.13] **PlanWerkStadt: Steady and periodic thermal conductance tests on an experimental timber wall.**

Funded by: Holka Genossenschaft.

PI: prof. A. Gasparella.

Budget: 2'500 EUR + VAT

Period: 06.2016-09.2016.

Topic: Evaluation of thermal transmittance of opaque components by means of hotbox methods with heat flux meter according to the technical standards EN 1934, EN 1946-3 and ASTM C518 and evaluation of the periodic thermal transmittance and the timeshift of the opaque components through an experimental test in periodic steady state conditions.

Specific activities of the researcher: experimental laboratory activity, analysis of the results and preparation of the reports for the company.

Projects at the Free University of Bozen-Bolzano (UNIBZ) since 2016, funded by projects funded by Public Authorities or internal UNIBZ funds, listed from the most recent.

[7.14] GPP4Build: Green Public Procurement for Buildings (ITAT1079).

Type of Application: V INTERREG Italy-Austria 2014-2020.

Funded by: Call funded by European Union (85 %) and national funds (15 %).

Partners: Agenzia Casaclima (LP), Free University of Bozen-Bolzano, University of Padova, Fachhochschule Salzburg, Innovations- und Technologietransfer Salzburg, APE Friuli-Venezia Giulia.

PI (UNIBZ unit): prof. A. Gasparella.

Project Manager (UNIBZ unit): dr. G. Pernigotto.

Budget UNIBZ: 85'800 EUR (total budget: 749'856.93 EUR).

Duration: 10.2019-09.2021 (status of the project: *ongoing*).

Topic and activities: The project aims to design and set up a transnational network of competence centres and competence bearers on green public procurement for buildings and minimum environmental criteria, in order to support small and medium-sized enterprises (SMEs) and facilitate their participation to public tenders. In this framework, particular attention is paid to timber constructions, concrete constructions and window supply chains.

[7.15] BIGWOOD: Creating awareness and reduction of prejudices and barriers for high-volume wooden constructions (ITAT1081).

Type of Application: V INTERREG Italy-Austria 2014-2020.

Funded by: Call funded by European Union (75 %) and national funds (25 %).

Partners: Free University of Bozen-Bolzano (LP), proHolz Tirol, Centro Consorzi, University of Innsbruck.

PI (UNIBZ unit): prof. A. Gasparella.

Budget UNIBZ: 355'144 EUR (total budget: 883'831.28 EUR).

Duration: 10.2019-03.2022 (status of the project: *ongoing*).

Topic and activities: The project aims to develop an interregional network to enforce large-volume timber constructions and to reduce the existing barriers. In order to achieve such goal, in the framework of the project a network and a platform for stakeholders will be developed, new tools for information and education proposed, and timber mock-ups and prototypes built for research and development purposes.

[7.16] **SENSHOME: The SENSitive home: SENSors for special ENvironmentS: the HOME As normal as possible and as special as necessary (ITAT1088).**

Type of Application: V INTERREG Italy-Austria 2014-2020.

Funded by: Call funded by European Union (77.6 %) and national funds (22.4 %).

Partners: Free University of Bozen-Bolzano (LP), Carinthia University of Applied Sciences, University of Trieste, Eureka System.

PI (UNIBZ unit): prof. A. Gasparella.

Budget UNIBZ: 243'801 EUR (total budget: 982'422.96 EUR).

Duration: 10.2019-03.2022 (status of the project: *ongoing*).

Topic and activities: The project aims to develop new smart home designs and technologies for people with autism spectrum disorder and disabilities. Specifically, the new smart homes are designed according to a user-centred approach and will be able to recognize critical events and to perform indoor condition monitoring and controlling, as well as to enhance independent living for their occupants.

[7.17] **TESES-Urb: Techno-economic methodologies to investigate sustainable energy scenarios at urban level**

Type of Application: ID Call 2019 (UNIBZ internal research funds).

Funded by: Free University of Bozen-Bolzano.

PI: prof. M. Righetti.

Budget UNIBZ: 182'500 EUR.

Duration: 10.2019-09.2022 (status of the project: *ongoing*).

Topic: Development of an approach for the analysis of energy systems at urban level, providing future scenarios encompassing techno-economic developments along with climate and socio-demographic evolutions. Support to local Public Administrations in energy planning processes to optimize long-term investments for reducing greenhouse emission and increasing the share of renewable sources.

Specific activities of the researcher: Collecting and processing inputs and contributing in the development of a 100 % renewable and smart urban scenario for the Municipality of Bozen-Bolzano.

[7.18] E2I@NOI: Definition of a System of Laboratories for the development, characterization and the technology transfer for Smart Energy Buildings (FESR1095).

Type of Application: ERDF (EFRE/FESR) Call 2017 - Research and Innovation (3rd call) European Commission (research).

Funded by: Call funded by European Union (50 %), national funds (35 %) and provincial funds (15 %).

Partners: EURAC Research (LP), Free University of Bozen-Bolzano, Agenzia Casaclima.

PI (UNIBZ unit): prof. A. Gasparella.

Project Manager (UNIBZ unit): dr. G. Pernigotto.

Budget UNIBZ: 342'422.10 EUR (total budget: 934'572.18 EUR).

Duration: 07.2018-07.2021 (status of the project: *ongoing*).

Topic and activities: The project E2I@NOI deals with the development of laboratories and competences to analyse the interaction between indoor environmental quality IEQ, occupants' behaviour and energy efficiency in the framework of smart energy buildings. In the framework of the project, the applicant performed a review of the literature about building energy flexibility and smart readiness indicators, designed and organized experimental campaigns in the UNIBZ Living Labs for the study of occupants' behaviour and integrated global IEQ, and served as project manager for the UNIBZ unit.

[7.19] SOMNE: Bolzano Solar Irradiance Monitoring Network.

Type of application: CRC Call 2018 (UNIBZ internal research funds).

Funded by: Free University of Bozen-Bolzano.

PI: prof. A. Gasparella.

Budget: 70'000 EUR.

Duration: 01.2019–01.2022 (status of the project: *ongoing*).

Topic: The project aims to collect solar irradiance measurements integrating the current local network of meteorological stations with new ones, set up in different points of Bolzano. These data will be used to assess the capabilities of current solar irradiance models in the mountain environment and to develop new models for this territory.

Specific activities of the researcher: Design and construction of a new weather station for the NOI TechPark in Bolzano, assessment of the capabilities of different models in the literature for the processing of solar irradiance inputs.

[7.20] **IndAIR-Edu: Indoor Air Quality and Ventilation Effectiveness in Educational Buildings.**

Type of application: RTD Call 2018 (UNIBZ internal research funds).

Funded by: Free University of Bozen-Bolzano, Faculty of Science and Technology.

PI: dr. G. Pernigotto.

Budget: 10'500 EUR.

Duration: 07.2018-06.2020 (status of the project: *ongoing*).

Topic and activities: In the framework of this project, several monitoring campaigns have been performed in UNIBZ teaching environments and in different local schools in order to assess the IAQ as well as the adequacy and the effectiveness of ventilation. Results have been presented and discussed with the Municipality of Bozen-Bolzano and guidelines proposed to improve ventilation in educational buildings.

[7.21] **HUCED: Human-Centred Design of the Built Environment: definition of a methodology for the experimental assessment of the overall Indoor Environmental Quality.**

Type of application: CRC Call 2016 (UNIBZ internal research funds).

Funded by: Free University of Bozen-Bolzano.

PI: prof. A. Gasparella.

Budget: 70'000 EUR.

Duration: 03.2017-02.2020.

Topic: The project aimed at filling some gaps in the current state-of-the-art regarding the global assessment of the Indoor Environmental Quality. Specifically, while each environmental stimulus is commonly measured and evaluated independently of the other ones, occupants are actually solicited by several stressors at the same time. In this framework, the project provided an in-depth experimental investigation regarding correlations and interactions between the different environmental stimuli.

Specific activities of the researcher: Review of the experimental studies in controlled environment about the interaction between the different environmental stimuli on comfort perception and impact on occupants' performance. Experimental monitoring and survey about thermal and visual comfort and indoor air quality in the UNIBZ Living Labs.

[7.22] IBAS: Intelligent Building Automation System for optimization of energy consumptions and indoor environmental quality.

Type of application: CRC Call 2015 (UNIBZ internal research funds).

Funded by: Free University of Bozen-Bolzano.

PI: prof. A. Gasparella.

Budget: 50'000 EUR.

Duration: 01.2016 – 03.2018.

Topic: Development of an Intelligent Building Automation System (IBAS) integrated with the building monitoring system, able to give continuous feedback on the indoor conditions and, thanks to weather forecast, to define advanced control strategies (e.g., model predictive control MPC).

Specific activities of the researcher: short- and long-term experimental campaigns about thermal and visual comfort conditions in the Living Labs UNIBZ, data analysis, development and calibration of EnergyPlus and Radiance models. Experimental study of a complex fenestration system and of the performance of shading devices in collaboration with EURAC Research and the University of Innsbruck.

Previous projects on building physics topics, listed from the most recent.

[7.23] Air-to-air heat recovery in HVAC systems

Funded by: Free University of Bozen-Bolzano (Faculty of Science and Technology, TN5044 PIS UNIBZ).

PI: prof. A. Gasparella.

Participation Period: 12.2011-11.2014, including 1 year as research fellow at Free University of Bozen-Bolzano (01.2013-01.2014).

Topic: Designing and building a laboratory test facility to measure the recovery efficiency of heat exchangers. The focus was on membrane-based air-to-air cross-flow heat exchangers. The facility was designed not only to be able to operate in the conditions prescribed by the current technical standards for the assessment of the efficiency but also to work under different conditions (e.g., dynamic conditions), more representative of the actual operative ones.

Specific activities of the researcher: literature and technical standard review; CFD simulations, both for the evaluation of the air-to-air heat recovery system and for the design of the testing facility; selection and purchase of part of the testing facility components.

[7.24] TIMBEEST – “Timber building with enhanced energy and structural performance”

Funded by: Provincia Autonoma di Bozen-Bolzano L.P. 13.12.2006 N. 14 (TN2201 PIS UNIBZ).

Partners: Fraunhofer IEC (LP), Free University of Bozen-Bolzano (main investigators: prof. A. Gasparella, prof. M. Baratieri), Trees and Timber Institute CNR-IVALSA.

Participation Period: 04.2013-01.2014.

Topic: Improvement of the summer behaviour of timber buildings without worsening their structural and seismic qualities and identification of technologies optimizing the trade-off between economic results, indoor comfort, energy performance and seismic behaviour in different Italian climates.

Specific activities of the researcher: analysis of raw weather data and development of reference years according to EN ISO 15927-4:2005; development of a new procedure for the calculation of extreme years; definition of the set of simplified buildings, modelling and simulation.

[7.25] Prestazioni dinamiche delle strutture di involucro edilizio: progettazione di un sistema di controllo

Funded by: Free University of Bozen-Bolzano (Faculty of Science and Technology, TN5023 PIS UNIBZ).

PI: prof. A. Gasparella, prof. M. Baratieri.

Participation Period: 08.2011-01.2012.

Topic: Numerical analyses on the dynamic response of the building opaque elements to periodic solicitations, in order to extend the applicability and the meaning of EN ISO 13786:2007 dynamic parameters to non-sinusoidal forcing signals.

Specific activities of the researcher: Analysis and development of periodic sol-air temperatures representative of some Italian climates; simulation of the dynamic response of 15 opaque components with different insulation with CTF methods (TRNSYS and EnergyPlus); comparison with harmonic numerical methods and calculation of correction factors for EN ISO 13786:2007 dynamic parameters.

[7.26] Project χ 2

Funded by: Network "Chi Quadrato" (Condino, Trento) (TN5210 PIS UNIBZ).

PI: prof. A. Gasparella, prof. M. Baratieri.

Participation Period: 01.2011-08.2011.

Topic: Design of a new school building in Condino, Trento, with high energy performance and indoor environment quality, certifiable

with the LEED for Schools Protocol.

Specific activities of the researcher: The first part of the activity was aimed at the selection of the building simulation tool to use: the software proposed by project partners, Ecotect, was assessed with ANSI/ASHRAE 140 procedure and failed many tests. This led to the selection and the use of EnergyPlus (with the user-interface DesignBuilder) as alternative for the dynamic modelling of the whole building-system configuration.

[7.27] Ecodomus.vi

Funded by: Provincia di Vicenza, Vi.energia srl.

Main Partners: Prof. A. Gasparella (University of Padova, now Free University of Bozen-Bolzano), prof. P. Romagnoni (IUAV of Venezia), prof. F. Cappelletti (IUAV of Venezia), prof. P. Baggio (University of Trento), Vi.energia srl, Provincia di Vicenza

Participation Period: since 2008.

Topic: Started as one of the first steps in Italy within the framework of building energy labelling, the main objective of the project Ecodomus.vi was to define an energy labelling protocol in agreement with national and European technical standards and a procedure for the estimation and the assessment of building energy performance, the identification of weaknesses of energy designs and the selection of improved measures.

Specific activities of the researcher: Implementation of the calculation methods for solar thermal systems in Ecodomus.vi calculation spreadsheet and further upgrades according to the new technical standards; direct implementation and assistance to professionals for the implementation of the protocol Ecodomus.vi for the evaluation of the energy performance of residential buildings; analysis of the energy performances of existing schools in Schio (Vicenza) and Thiene (Vicenza); teaching activity for designers and building professionals within the 2nd level course of Ecodomus Lectures.

Other projects on applied physics, listed from the most recent.

[7.28] Angel - "Sviluppo e ottimizzazione del nuovo banco di refrigerazione Angel"

Funded by: De Rigo Refrigeration srl.

Partners: De Rigo Refrigeration srl, University of Padova (PI: prof. L. Doretti, prof. S. Mancin).

Participation Period: 05.2015-02.2016.

Topic: Development of an optimized refrigerator case through experimental tests and CFD simulations.

Specific activities of the researcher: CFD simulations of the

refrigerator case with a 2D approach in order to find inefficiencies in the air distribution and, consequently, the best modifications to optimize air path and velocity.

[7.29] TOICA – “Thermal Overall Integrated Conception of Aircraft”

Funded by: European Union, FP7-AAT-2013-RTD-1.

Main partners: 32 partners coordinated by Airbus, including University of Padova (main investigator: prof. C. Zilio).

Participation Period: 02.2014-06.2016.

Topic: The project focused on the aircraft thermal design and, in particular, its final aim was to develop an advanced multi-level and multi-disciplinary architecture able to conjugate the need of assessing the feasibility of new solutions in the early stages of aircraft conceptual design with the necessity of detailed simulation for accurate thermal analysis. Specifically, University of Padova was involved in the thermal characterization of the behaviour of fuel tank and fuselage during the cruise.

Specific activities of the researcher: Development of 3D models and CFD simulations, in particular for the fuel tank; analysis of the results and discussion of flammability risk; comparison with simplified 1D models to assess and improve their capabilities.

[7.30] ZEIWS - Zero Environmental Impact Washing System -"Sviluppo di nuova generazione di impianti di lavaggio mezzi a totale compatibilità ambientale"

Research program commissioned by Ceccato S.p.A. and admitted to the Regione Veneto financial support (Regional Law 18.05.2007 n.9).

Main Partners: University of Padova (main investigators: prof. C. Forza, prof. M. Quaresimin, prof. A. Gasparella), Ceccato srl.

Participation Period: 06.2010-10.2011.

Topic: Re-designing the car wash systems developed and produced by the company Ceccato - "Pegasus" line; in particular, the subtask related to the energy issues was focused on the reduction of the operational energy impact, the improvement of the energy efficiency and the evaluation of the feasibility of integration with renewable energy sources.

Specific activities of the researcher: analysis of the energy consumption of the car-washing system; CFD simulation of the air-drying system and calibration with experimental data; identification of the main issues of the "as is" configuration and suggestions for improved redesign; technical evaluation of feasibility of installation of thermal and PV solar collectors on the upper surface of the system.

List of publications

On peer-review international journals

- 1 Gasparella A., **Pernigotto G.**, Cappelletti F., Romagnoni P. and Baggio P., 2011. *Analysis and modeling of window and glazing systems energy performance for a well insulated residential building*, Energy and Buildings 43, April 2011, p. 1030-1037. Scopus citations: 103; WoS citations: 87. ISSN: 03787788; DOI: 10.1016/j.enbuild.2010.12.032
- 2 Gasparella A., **Pernigotto G.**, Baratieri M. and Baggio P., 2011. *Thermal dynamic transfer properties of the opaque envelope: analytical and numerical tools for the assessment of the response to summer outdoor conditions*, Energy and Buildings 43, September 2011, p. 2509-2517. Scopus citations: 42 / WoS citations: 36. ISSN: 03787788; DOI: 10.1016/j.enbuild.2011.06.004
- 3 **Pernigotto G.** and Gasparella A., 2013. *Extensive Comparative Analysis Of Building Energy Simulation Codes: Heating And Cooling Energy Needs and Peak Loads Calculation In TRNSYS And EnergyPlus For Southern Europe Climates*, HVAC&R Research 19(5), July 2013, p. 481-492. Scopus citations: 8 / WoS citations: 7. ISSN: 10789669; DOI: 10.1080/10789669.2013.794088
- 4 **Pernigotto G.**, Prada A., Cóstola D., Gasparella A. and Hensen J.L.M., 2014. *Multi-year and reference year weather data for building energy labelling in North Italy climates*, Energy and Buildings 72, April 2014, p. 62-72. Scopus citations: 28 / WoS citations: 24. ISSN: 03787788; DOI: 10.1016/j.enbuild.2013.12.012
- 5 **Pernigotto G.**, Prada A., Gasparella A. and Hensen J.L.M., 2014. *Analysis and improvement of the representativeness of EN ISO 15927-4 reference years for building energy simulation*, Journal of Building Performance Simulation 7(6), November 2014, p. 391-410. Scopus citations: 17 / WoS citations: 15. ISSN: 19401493; DOI: 10.1080/19401493.2013.853840
- 6 Prando D., Patuzzi F., **Pernigotto G.**, Gasparella A. and Baratieri M., 2014. *Biomass Gasification Systems For Residential Application: An Integrated Simulation Approach*, Applied Thermal Engineering 71(1), October 2014, p. 152–160. Scopus citations: 34 / WoS citations: 27. ISSN: 13594311; DOI: 10.1016/j.applthermaleng.2014.06.043
- 7 Arambula Lara R., **Pernigotto G.**, Cappelletti F., Romagnoni P. and Gasparella A., 2015. *Energy audit of schools by means of cluster analysis*, Energy and Buildings 95 - Special Issue: "Historic, historical and existing buildings: designing the retrofit. An overview from energy performances to indoor air quality", May 2015, p. 160–171. Scopus citations: 34 / WoS citations: 26. ISSN: 03787788; DOI: 10.1016/j.enbuild.2015.03.036

- 8 Pavlin B., **Pernigotto G.**, Cappelletti F., Bison P., Vidoni R. and Gasparella A., 2017. *Real-Time Monitoring of Occupants' Thermal Comfort through Infrared Imaging: A Preliminary Study*, Buildings 7, 2, February 2017, p. 10. Scopus citations: 10 / WoS citations: 9.
ISSN: 20755309; DOI: 11.3390/buildings7010010
Weblink: <http://www.mdpi.com/2075-5309/7/1/10>
- 9 Tafelmeier S., **Pernigotto G.** and Gasparella A., 2017. *Annual Performance of Sensible and Total Heat Recovery in Ventilation Systems: Humidity Control Constraints for European Climates*, Buildings 7, 2, March 2017, p. 28.
Scopus citations: 4 / WoS citations: 3.
ISSN: 20755309; DOI: 10.3390/buildings7020028
Weblink: <http://www.mdpi.com/2075-5309/7/2/28>
- 10 Tarantini M., **Pernigotto G.** and Gasparella A., 2017. *A Co-Citation Analysis on Thermal Comfort and Productivity Aspects in Production and Office Buildings*, Buildings 7, 2, May 2017, p. 36.
Scopus citations: 7 / WoS citations: 5.
ISSN: 20755309; DOI: 10.3390/buildings7020036
Weblink: <http://www.mdpi.com/2075-5309/7/2/36>
- 11 **Pernigotto G.**, Prada A., Cappelletti F. and Gasparella A., 2017. *Impact of Reference Years on the Outcome of Multi-Objective Optimization for Building Energy Refurbishment*, Energies, 10(11), p. 1925.
Scopus citations: 6 / WoS citations: 6. ISSN: 19961073; DOI: 10.3390/en10111925
Weblink: <http://www.mdpi.com/1996-1073/10/11/1925>
- 12 Prada A., **Pernigotto G.**, Baggio P. and Gasparella A., 2018. *Uncertainty propagation of material properties in energy simulation of existing residential buildings: The role of buildings features*, Building Simulation 11(3), p. 449-464.
Scopus citations: 8 / WoS citations: 9.
ISSN: 1996-8744; DOI: 10.1007/s12273-017-0418-4
- 13 Torresin S., **Pernigotto G.**, Cappelletti F. and Gasparella A., 2018. *Combined effects of environmental factors on human perception and objective performance: a review of experimental laboratory works*, Indoor Air 28(4), pp. 525-538.
Scopus citations: 24 / WoS citations: 18.
ISSN: 1600-0668; DOI: 10.1111/ina.12457
- 14 Luddeni G., Krarti M., **Pernigotto G.** and Gasparella A., 2018. *An analysis methodology for large-scale deep energy retrofits of existing building stocks: Case study of the Italian office building*, Sustainable Cities and Society 41, p. 296-311.
Scopus citations: 18 / WoS citations: 15.
ISSN: 2210-6707; DOI: 10.1016/j.scs.2018.05.038

- 15 Zilio C., Righetti G., **Pernigotto G.**, Longo GA., 2018. *Analysis of the freezing time of chicken breast finite cylinders [Analyse du temps de congélation des cylindres de poitrine poulet]*, International Journal of Refrigeration 95, p. 38-50. ISSN: 0140-7007; DOI: 10.1016/j.ijrefrig.2018.08.013
- 16 Pistore L., **Pernigotto G.**, Cappelletti F., Gasparella A. and Romagnoni P., 2019. *A stepwise approach integrating feature selection, regression techniques and cluster analysis to identify primary retrofit interventions on large stocks of buildings*, Sustainable Cities and Society 47. Scopus citations: 5 / WoS citations: 2. ISSN: 2210-6707; DOI: 10.1016/j.scs.2019.101438
- 17 **Pernigotto G.**, Prada A. and Gasparella A. 2020. *Extreme reference years for building energy performance simulation*, Journal of Building Performance Simulation 13 – Special Issues on “Microclimatic Boundary Conditions in Building Simulation Models”, p. 152-166. Scopus citations: 4 / WoS citations: 5. ISSN: 19401493; DOI: 10.1080/19401493.2019.1585477
- 18 Zaniboni L., **Pernigotto G.**, Toftum J., Gasparella A., Olesen B.W. 2020. *Subjective and objective assessment of thermal comfort in physiotherapy centers*, Building and Environment 176. ISSN: 0360-1323; DOI: 10.1016/j.buildenv.2020.106808
- 19 Vigna, I., Perneti, R., **Pernigotto, G.**, Gasparella, A. 2020. *Analysis of the building smart readiness indicator calculation: A comparative case-study with two panels of experts*, Energies 13(11), 2796. Scopus citations: 1. ISSN: 19961073; DOI: 10.3390/en13112796
Weblink: <https://www.mdpi.com/1996-1073/13/11/2796>
- 20 Menapace A., Thellufsen J.Z., **Pernigotto G.**, Roberti F., Gasparella A., Righetti M., Baratieri M., Lund H. 2020. *The design of 100 % renewable smart urban energy systems: The case of Bozen-Bolzano*, Energy 207. ISSN: 0360-5442; DOI: 10.1016/j.energy.2020.118198

Proceedings of international conferences (indexed on Scopus / WoS)

- 21 Cappelletti F., Gasparella A., **Pernigotto G.** and Romagnoni P., 2011. *Dynamic analysis of energy performance of different roof systems during the cooling season*, Building Simulation 2011, 12th Conference of IBPSA, Sydney, Australia, 14th -16th November 2011. ISBN: 9780646565101; Scopus citations: 2
Weblink: http://www.ibpsa.org/proceedings/BS2011/P_1648.pdf
- 22 Gasparella A., **Pernigotto G.** and Baratieri M., 2011. *Extension of the dynamic transfer characteristics under sinusoidal periodic boundary condition to real periodic solicitation conditions for the envelope opaque components*, Building Simulation 2011, 12th Conference of IBPSA, Sydney, Australia, 14th -16th November 2011. ISBN: 9780646565101; Scopus citations: 1

- Weblink: http://www.ibpsa.org/proceedings/BS2011/P_1635.pdf
- 23 Prada A., **Pernigotto G.**, Baggio P. and Gasparella A., 2011. *Summer load evaluation in the Italian climate: sensitivity of the loss utilization factor to the weather data*, Building Simulation 2011, 12th Conference of IBPSA, Sydney, Australia, 14th -16th November 2011. ISBN: 9780646565101; Scopus citations: 2
Weblink: http://www.ibpsa.org/proceedings/BS2011/P_1744.pdf
- 24 Gasparella A., Cappelletti F., **Pernigotto G.** and Romagnoni P., 2012. *Long-term evaluation of internal thermal comfort with different kinds of glazing systems and window sizes: from energetic considerations to users' comfort*, 2012 ASHRAE Annual Conference (ASHRAE Transactions, Volume 118, Part 2), San Antonio (Texas), U.S., 23rd -27th June 2012. ISSN: 00012505; ISBN: 9781936504350; Scopus / WoS Index
- 25 **Pernigotto G.**, Antonacci G., Baggio P., Gasparella A. and Hensen J.L.M., 2013. *Long term evaluation of building energy performance: comparison of the test reference year and historical data series in the North Italian climates*, Proceedings of Building Simulation Application 2013, Bolzano, Italy, 30th January - 1st February 2013. ISBN: 9788860460585; ISSN: 2531-6702; Scopus citations: 1 / WoS Index
Weblink:
<http://pro.unibz.it/library/bupress/publications/fulltext/9788860461056.pdf>
- 26 **Pernigotto G.** and Gasparella A., 2013. *Quasi-steady state and dynamic simulation approaches for the calculation of building energy needs: part 2 Thermal gains*, Proceedings of Building Simulation Application 2013, Bolzano, Italy, 30th January - 1st February 2013. ISBN: 9788860460585; ISSN: 2531-6702; Scopus citations: 2 / WoS citations: 1.
Weblink:
<http://pro.unibz.it/library/bupress/publications/fulltext/9788860461056.pdf>
- 27 **Pernigotto G.** and Gasparella A., 2013. *Quasi-steady state and dynamic simulation approaches for the calculation of building energy needs: part 1 Thermal losses*, Proceedings of Building Simulation Application 2013, Bolzano, Italy, 30th January - 1st February 2013. ISBN: 9788860460585; ISSN: 2531-6702; Scopus citations: 1 / WoS Index
Weblink:
<http://pro.unibz.it/library/bupress/publications/fulltext/9788860461056.pdf>
- 28 Atzeri A. M., **Pernigotto G.**, Cappelletti F., Gasparella A. and Tzempelikos A., 2013. *Energy performance of shading devices for thermal and lighting comfort in offices*, Proceedings of Building Simulation Application 2013, Bolzano, Italy, 30th January - 1st February 2013. ISBN: 9788860460585; ISSN: 2531-6702; Scopus citations: 4 / WoS citations: 2
Weblink:

<http://pro.unibz.it/library/bupress/publications/fulltext/9788860461056.pdf>

- 29 Prando D., Patuzzi F., **Pernigotto G.**, Gasparella A. and Baratieri M., 2013. *Buildings and biomass cogeneration systems: Integrated simulation approach*, Proceedings of Building Simulation Application 2013, Bolzano, Italy, 30th January - 1st February 2013.
ISBN: 9788860460585; ISSN: 2531-6702; Scopus / WoS Index
Weblink: <http://pro.unibz.it/library/bupress/publications/fulltext/9788860461056.pdf>
- 30 Prada A., **Pernigotto G.**, Baggio P. and Gasparella A., 2013. *The effect of the interaction between suboptimal input data and building features on the simulation results*, Proceedings of Building Simulation 2013, 13th Conference of IBPSA, Chambéry, France, 25th-29th August 2013.
ISBN: 9782746662940; Scopus / WoS Index
Weblink: http://www.ibpsa.org/proceedings/BS2013/p_1231.pdf
- 31 Prada A., Gasparella A., **Pernigotto G.** and Mahdavi A., 2015. *Combined effects of diffuse fraction and tilted surface radiation models*, eWork and eBusiness in Architecture, Engineering and Construction - Proceedings of the 10th European Conference on Product & Process Modelling, Vienna, Austria, 17th-19th September 2014.
ISBN: 9781138027107; DOI: 10.1201/b17396-45; Scopus Citations: 3 / WoS Index.
- 32 Righetti G., **Pernigotto G.**, Zilio C. and Longo G.A., 2015. *Numerical and experimental analysis on poultry freezing time*, Proceedings of ICR 2015 - 24th IIR International Congress of Refrigeration, Yokohama, Japan, 16th-22nd August 2015, Published in Refrigeration Science and Technology 2015, Pages 2626-2633. ISSN: 01511637;
DOI: 10.18462/iir.icr.2015.0273; Scopus Index.
- 33 **Pernigotto G.**, Prada A., Baggio P., Gasparella A. and Mahdavi A. 2015. *Impact of solar irradiation models on simulated hourly energy performance of buildings*, Proceedings of Building Simulation 2015, 14th Conference of IBPSA, Hyderabad, India, 7th-9th December 2015.
ISBN: 9789352301188; Scopus Index
Weblink: www.ibpsa.org/proceedings/BS2015/p2303.pdf
- 34 **Pernigotto G.**, Prada A., Cappelletti F. and Gasparella A. 2015. *Influence of the representativeness of reference weather data in multi-objective optimization of building refurbishment*, Proceedings of Building Simulation 2015, 14th Conference of IBPSA, Hyderabad, India, 7th-9th December 2015.
ISBN: 9789352301188; Scopus Citations: 4;
Weblink: www.ibpsa.org/proceedings/BS2015/p2395.pdf
- 35 Prada A., **Pernigotto G.**, Cappelletti F. and Gasparella A. 2015. *Impact of solar irradiation models on building refurbishment measures from multi-objective optimization*, Proceedings of Building Simulation 2015, 14th Conference of IBPSA, Hyderabad, India, 7th-9th December 2015.
ISBN: 9789352301188; Scopus Citations: 1;

Weblink: www.ibpsa.org/proceedings/BS2015/p2257.pdf

- 36 **Pernigotto G.**, Prada A., Patuzzi F., Baratieri M. and Gasparella A. 2015. *Characterization of the dynamic thermal properties of the opaque elements through experimental and numerical tests*, Proceedings of the 6th International Building Physics Conference, IBPC 2015, Torino, Italy, 14th -17th June 2015. Published in Energy Procedia 78, November 2015, Pages 3234-3239. ISSN: 18766102; DOI:10.1016/j.egypro.2015.11.786; Scopus Citations: 8 / WoS Cit.: 8.
- 37 **Pernigotto G.**, Prada A., Patuzzi F., Baratieri M. and Gasparella A., 2015. *Experimental characterization of the dynamic thermal properties of opaque elements under dynamic periodic solicitation*, Proceedings of Building Simulation Application 2015, Bolzano, Italy, 4th - 6th February 2015. ISBN: 9788860460745; ISSN: 2531-6702; Scopus citations: 1; Weblink: <http://pro.unibz.it/library/bupress/publications/fulltext/9788860460745.pdf>
- 38 Prada A., **Pernigotto G.**, Cappelletti F. and Gasparella A., 2015. *Robustness of multi-objective optimization of building refurbishment to solar radiation model*, Proceedings of Building Simulation Application 2015, Bolzano, Italy, 4th - 6th February 2015. ISBN: 9788860460745; ISSN: 2531-6702; Scopus Index; Weblink: <http://pro.unibz.it/library/bupress/publications/fulltext/9788860460745.pdf>
- 39 Ratajczak J., García D., Polastri A., **Pernigotto G.**, Prada A., Baratieri M., Gasparella A. and Benedetti C., 2016. *Timber buildings with enhanced energy and seismic performance for the Mediterranean region*, Proceedings of the World Conference on Timber Engineering (WCTE 2016), Vienna, Austria, 22nd-25th August 2016. ISBN: 9783903039001; Scopus Index
- 40 Arambula Lara R., Naboni E., **Pernigotto G.**, Cappelletti F., Zhang Y., Barzon F., Gasparella A. and Romagnoni P., 2017. *Optimization Tools for Building Energy Model Calibration*, Proceedings of the 8th International Conference on Sustainability in Energy and Buildings, Torino, Italy, 11th-13th September 2016. Published in Energy Procedia 111, March 2017, Pages 1060–1069. ISSN: 18766102; DOI: 10.1016/j.egypro.2017.03.269; Scopus Citations: 14 / WoS Citations: 13.
- 41 Zilio C., Longo G.A., **Pernigotto G.**, Chiacchio F., Borrelli P., D’Errico E., 2017. *CFD analysis of aircraft fuel tanks thermal behaviour*, Proceedings of 35th Italian Union of Thermo-Fluid Dynamics Heat Transfer Conference UIT 2017, Ancona, Italy, 26th-28th June 2017. Published in Journal of Physics: Conference Series 923(1), November 2017. ISSN: 17426588; DOI: 10.1088/1742-6596/923/1/012027; Scopus Citations: 2 / WoS Citations: 1.

- 42 Tafelmeier S., **Pernigotto G.** and Gasparella A., 2017. *Mapping savings in energy demand by heat recovery for European countries under consideration of humidity control*, Proceedings of Building Simulation Application 2017, p. 487-496, Bolzano, Italy, 8th - 10th February 2017. ISBN: 978-88-6046-136-0; ISSN: 2531-6702; Scopus Index; Weblink: <http://pro.unibz.it/library/bupress/publications/fulltext/9788860461360.pdf>
- 43 Zaniboni L., **Pernigotto G.**, Kiesel K., Schuß M., Gasparella A. and Mahdavi A., 2017. *Calibrated simulation models for indoor comfort assessment: the case of a healthcare facility in Vienna*, Proceedings of Building Simulation Application 2017, p. 497-504, Bolzano, Italy, 8th - 10th February 2017. ISBN: 978-88-6046-136-0; ISSN: 2531-6702; Scopus Index; Weblink: <http://pro.unibz.it/library/bupress/publications/fulltext/9788860461360.pdf>
- 44 Pistore L., **Pernigotto G.**, Cappelletti F., Romagnoni P. and Gasparella A., 2017. *From energy signature to cluster analysis: comparison between different clustering algorithms*, Proceedings of Building Simulation Application 2017, p. 469-477, Bolzano, Italy, 8th - 10th February 2017. ISBN: 978-88-6046-136-0; ISSN: 2531-6702; Scopus Citations: 1; Weblink: <http://pro.unibz.it/library/bupress/publications/fulltext/9788860461360.pdf>
- 45 Tarantini M., **Pernigotto G.**, Ochs F. and Gasparella A., 2017. *Parametric analysis with technical and economic analysis of thermal comfort and productivity in productive buildings*, Proceedings of Building Simulation Application 2017, p. 573-580, Bolzano, Italy, 8th - 10th February 2017. ISBN: 978-88-6046-136-0; ISSN: 2531-6702; Scopus Index; Weblink: <http://pro.unibz.it/library/bupress/publications/fulltext/9788860461360.pdf>
- 46 Pavlin B., Carabin G., **Pernigotto G.**, Gasparella A. and Vidoni R., 2018. *An embedded mechatronic device for real-time monitoring and prediction of occupants' thermal comfort*, ASME 2018 International Mechanical Engineering Congress and Exposition Volume 8A: Heat Transfer and Thermal Engineering, Pittsburgh, PA, U.S., 9th-15th November 2018. ISBN: 978-0-7918-5211-8. DOI: doi:10.1115/IMECE2018-87632. Scopus Index.
- 47 Pilati G., **Pernigotto G.**, Gasparella, Tahmasebi F. and Mahdavi A., 2018. *Implications of operational, zoning-related, and climatic model input assumptions for the results of building energy simulation*, eWork and eBusiness in Architecture, Engineering and Construction: Proceedings of the 12th European Conference on Product and Process Modelling (ECPPM 2018), 12th-14th September 2018, Copenhagen, Denmark. Scopus / WOS Index.

- 48 Caniato M., **Pernigotto G.** and Gasparella A. 2019. *The influence of source position and orientation on speech intelligibility in school environments*. Proceedings of INTERNOISE 2019, Madrid, Spain, 16th – 19th June 2019. Scopus Index.
- 49 Zaniboni L., **Pernigotto G.**, Gasparella A. and Mahdavi A., 2019. *Experimental and numerical analysis of indoor environmental conditions in two physiotherapy facilities in Bolzano*, Proceedings of Clima 2019, Bucharest, Romania, 26th-29th May 2019. E3S Web Conf. Volume 111, 2019, CLIMA 2019 Congress. DOI: 10.1051/e3sconf/201911102067. Scopus citations: 1.

Proceedings of international conferences (others)

- 50 Gasparella A., **Pernigotto G.**, Baratieri M. and Baggio P., 2011. *On the thermal dynamic performance of opaque buildings components: numerical tools and parameters*, Clima 2010, 10th REHVA World Congress, Antalya, Turkey, 9th-12th May 2010. ISBN: 9789756907146
- 51 Gasparella A., **Pernigotto G.**, Cappelletti F. and Prando D., 2011. *Evaluation of buildings energy refurbishment measures by means of statistical analysis*, 48th AICARR International Congress, Baveno - Lake Maggiore, Italy, 22nd -23rd September 2011. ISBN: 9788895620442
- 52 Gasparella A. and **Pernigotto G.**, 2012. *Comparative evaluation methodology of two building energy simulation codes: TRNSYS and EnergyPlus*, 5th International Building Physics Conference, Kyoto, Japan, 28th -31st May 2012.
- 53 **Pernigotto G.**, Cappelletti F., Penna P. and Gasparella A., 2012. *Extensive utilization of dynamic simulation for sensitivity analysis and optimization design of refurbishment measures*, Proceedings of the II International High Performance Buildings Conference at Purdue, West Lafayette (Indiana), U.S., 16th -19th July 2012. Weblink: <http://docs.lib.purdue.edu/ihpbc/90/>
- 54 Gasparella A. and **Pernigotto G.**, 2012. *Comparison of quasi-steady state and dynamic simulation approaches for the calculation of building energy needs: thermal losses*, Proceedings of the II International High Performance Buildings Conference at Purdue, West Lafayette (Indiana), U.S., 16th -19th July 2012. Weblink: <http://docs.lib.purdue.edu/ihpbc/88/>
- 55 Gasparella A. and **Pernigotto G.**, 2012. *Extensive comparative analysis of two building energy simulation codes for southern Europe climates: heating and cooling energy needs and peak loads calculation in TRNSYS and EnergyPlus*, Proceedings of the II International High Performance Buildings Conference at Purdue, West Lafayette (Indiana), U.S., 16th - 19th July 2012.

Weblink: <http://docs.lib.purdue.edu/ihpbc/89/>

- 56 Cappelletti F., Gasparella A., **Pernigotto G.**, and Romagnoni P., 2012. *Energy performance and long-term evaluation of internal thermal comfort of an office building with different kinds of glazing systems and window sizes*, Proceedings of the II International High Performance Buildings Conference at Purdue, West Lafayette (Indiana), U.S., 16th - 19th July 2012.
Weblink: <http://docs.lib.purdue.edu/ihpbc/91/>
- 57 **Pernigotto G.**, Prada A., Baratieri M., Baggio P. and Gasparella A., 2012. *Modelling of the thermal behavior of walls and floors in contact with the ground*, Proceedings of the II International High Performance Buildings Conference at Purdue, West Lafayette (Indiana), U.S., 16th - 19th July 2012.
Weblink: <http://docs.lib.purdue.edu/ihpbc/93/>
- 58 **Pernigotto G.**, Pernigotto G., Baratieri M. and Gasparella A., 2012. *3D unsteady state analysis of thermal performance of differently insulated floors in contact with the ground*, Proceedings of BauSim 2012 Conference, Berlin, Germany, 26th-28th September 2012.
Weblink:
http://www.ibpsa.org/proceedings/bausimPapers/2012/BauSIM2012_177.pdf
- 59 Cappelletti F., Penna P., **Pernigotto G.** and Gasparella A., 2012. *Analysis of cost-effective measures for building refurbishment*, Proceedings of BauSim 2012 Conference, Berlin, Germany, 26th-28th September 2012.
Weblink:
http://www.ibpsa.org/proceedings/bausimPapers/2012/BauSIM2012_165.pdf
- 60 Prando D., Patuzzi F., **Pernigotto G.**, Gasparella A. and Baratieri M., 2012. *Modeling analysis of biomass gasification MCHP systems for residential applications*, Proceedings of the 20th European Biomass Conference and Exhibition, Milan, Italy, 18th-21st June 2012. ISBN: 97888894075475
- 61 Prando D., Patuzzi F., **Pernigotto G.**, Gasparella A. and Baratieri M., 2013. *Biomass CHP systems for residential applications: a multi-stage modeling approach*, Proceedings of Clima 2013, 11th REHVA World Congress and 8th International Conference on IAQVEC, Prague, Czech Republic, 16th - 19th June 2013. ISBN: 9788026040019
- 62 Cappelletti F., Penna P., **Pernigotto G.** and Gasparella A., 2013. *Sensitivity to the reference buildings choice of the new energy requirements: an application of the regulation EU 244/2012*, Proceedings of Clima 2013, 11th REHVA World Congress and 8th International Conference on IAQVEC, Prague, Czech Republic, 16th - 19th June 2013. ISBN: 9788026040019
- 63 **Pernigotto G.**, Prada A., Gasparella A. and Hensen J.L.M., 2014. *Development of sets of simplified building models for building simulation*, Proceedings of the III International High Performance Buildings Conference at Purdue, West Lafayette (Indiana), U.S., 14th -

17th July 2014.

Weblink: <http://docs.lib.purdue.edu/ihpbc/128/>

- 64 Prada A., **Pernigotto G.**, Baggio P., Gasparella A. and Mahdavi A., 2014. *Effect of solar radiation model on the predicted energy performance of buildings*, Proceedings of the III International High Performance Buildings Conference at Purdue, West Lafayette (Indiana), U.S., 14th-17th July 2014.
Weblink: <http://docs.lib.purdue.edu/ihpbc/130/>
- 65 Prada A., **Pernigotto G.**, Cappelletti F., Gasparella A. and Hensen J.L.M., 2014. *Robustness of multi-objective optimization of building refurbishment to suboptimal weather data*, Proceedings of the III International High Performance Buildings Conference at Purdue, West Lafayette (Indiana), U.S., 14th-17th July 2014.
Weblink: <http://docs.lib.purdue.edu/ihpbc/131/>
- 66 Zaniboni L., Kiesel K., Schuß M., **Pernigotto G.**, Gasparella A. and Mahdavi A., 2016. *Indoor comfort evaluation of a health care facility: a case study*, Proceedings of CLIMA 2016, volume 7, 12th REHVA World Congress 2016, Aalborg, Denmark 22nd-25th May 2016.
Weblink: http://vbn.aau.dk/files/233762347/paper_369.pdf
- 67 Zaniboni L., Kiesel K., Schuß M., **Pernigotto G.**, Gasparella A. and Mahdavi A., 2016. *Evaluation of on-site PV-based electrical energy production: a case study*, Proceedings of CLIMA 2016, volume 3, 12th REHVA World Congress 2016, Aalborg, Denmark 22nd-25th May 2016.
Weblink: http://vbn.aau.dk/files/233717547/paper_371.pdf
- 68 **Pernigotto G.**, Prada A., Baggio P., Gasparella A. and Mahdavi A., 2016. *Solar irradiance modelling and uncertainty on building hourly profiles of heating and cooling energy needs*, Proceedings of the IV International High Performance Buildings Conference at Purdue, West Lafayette (Indiana), U.S., 11th-14th July 2016.
Weblink: <http://docs.lib.purdue.edu/ihpbc/191/>
- 69 Bishara N., Prada A., **Pernigotto G.**, Baratieri M. and Gasparella A., 2016. *Analysis of the measurements reliability in dynamic test of the opaque envelope*, Proceedings of the IV International High Performance Buildings Conference at Purdue, West Lafayette (Indiana), U.S., 11th-14th July 2016.
Weblink: <http://docs.lib.purdue.edu/ihpbc/225/>
- 70 Pistore L., **Pernigotto G.**, Cappelletti F., Romagnoni P. and Gasparella A., 2016. *From energy signature to cluster analysis: an integrated approach*, Proceedings of the IV International High Performance Buildings Conference at Purdue, West Lafayette (Indiana), U.S., 11th-14th July 2016.
Weblink: <http://docs.lib.purdue.edu/ihpbc/201/>

- 71 Tafelmeier S., Pernigotto G., **Pernigotto G.** and Gasparella A., 2016. *Winter heat recovery in ventilation systems: potential and limitations of sensible and total recovery in the European climates*, Proceedings of the 47th International Congress and Exhibition on Heating, Refrigeration and Air-Conditioning, Belgrade, Serbia, 30th November - 2nd December 2016. ISBN: 9788681505823
Weblink: <http://kgh-kongres.rs/images/2016/doc/Zbornik-47-Kongresa-47th-Congress-Proceedings.pdf>
- 72 **Pernigotto G.**, Prada A., Cappelletti F. and Gasparella A., 2017. *Influence of Solar Irradiance Models on the Selection of Optimal Refurbishment Measures*, Proceedings of Building Simulation 2017, 15th Conference of IBPSA, San Francisco, U.S.A., 7th -9th August 2017. DOI: 10.26868/25222708.2017.291.
Weblink: http://www.ibpsa.org/proceedings/BS2017/BS2017_291.pdf
- 73 **Pernigotto G.**, Prada A., and Gasparella A., 2017. *Development of Extreme Reference Years for Building Energy Simulation Scenarios*, Proceedings of EnviBUILD 2017 Buildings and Environment - From Research to Application, Published in Applied Mechanics and Materials 887: 129-139, Zurich:Trans Tech Publications, ISSN: 1662-7482, Vienna, Austria, 7th -8th September 2017.
DOI: 10.4028/www.scientific.net/AMM.887.129
- 74 **Pernigotto G.** and Gasparella A., 2018. *Classification of European Climates for Building Energy Simulation Analyses*, Proceedings of the V International High Performance Buildings Conference at Purdue, West Lafayette, IN, U.S.A., 9th-12th July 2018.
Weblink: <https://docs.lib.purdue.edu/ihpbc/300/>
- 75 Demanega I., De Michele G., Avesani S., **Pernigotto G.**, Babich F. and Gasparella A., 2018. *CFD and ray tracing to evaluate the thermal performance of Complex Fenestration Systems*, Proceedings of Building Simulation and Optimization 2018, Cambridge, U.K., 11th-12th September 2018.
Weblink: www.ibpsa.org/proceedings/BSO2018/5A-1.pdf
- 76 Zaniboni L., **Pernigotto G.**, Schuß M., Kiesel K., Gasparella A. and Mahdavi A., 2018. *Use of calibrated building simulation to investigate comfort conditions in a healthcare facility*, Proceedings of IBPC 2018, Syracuse, NY, U.S., 23rd-26th September 2018.
- 77 Danovska M., **Pernigotto G.**, Baggio P. and Gasparella A. 2019. *Assessment of the Thermal Performance of Timber Walls under Nominal or Moisture and Temperature Dependent Properties*. Proceedings of Building Simulation 2019, Rome, Italy, 2nd-4th September 2019.
Weblink: http://www.ibpsa.org/proceedings/BS2019/BS2019_211069.pdf

- 78 **Pernigotto G.**, Walsh A., Gasparella A. and Hensen JLM. 2019. *Clustering of European Climates and Representative Climate Identification for Building Energy Simulation Analyses*. Proceedings of Building Simulation 2019, Rome, Italy, 2nd-4th September 2019. Weblink: http://www.ibpsa.org/proceedings/BS2019/BS2019_210938.pdf

Proceedings of national conferences / on national journals

- 79 Gasparella A. and **Pernigotto G.**, 2010. *Analisi comparativa dei codici di simulazione dinamica degli edifici: un confronto tra TRNSYS ed EnergyPlus (“Comparative analysis of building simulation codes: a comparison between TRNSYS and EnergyPlus”)*, Proceedings of the 65th ATI National Congress, Domus de Maria, Italy, 13th-17th September 2010. ISBN: 9788890411632
- 80 Gasparella A., **Pernigotto G.**, Cappelletti F., Romagnoni P. and Baggio P., 2010. *Analysis and modelling of the energy performance of window and glazing systems*, Proceedings of the 65th ATI National Congress, Domus de Maria, Italy, 13th-17th September 2010. ISBN: 9788890411632
- 81 Gasparella A., **Pernigotto G.**, Baratieri M. and Baggio P., 2010. *Numerical tools and parameters for the analysis of thermal dynamic performance of opaque buildings components*, Proceedings of the 65th ATI National Congress, Domus de Maria, Italy, 13th-17th September 2010. ISBN: 9788890411632
- 82 Prada A., **Pernigotto G.**, Baggio P. and Gasparella A., 2011. *Summer load evaluation in the Italian climate: sensitivity of the energy performance to the weather data*, Proceedings of the 66th ATI National Congress, Rende, Italy, 5th -9th September 2011. ISBN: 9788895267111
- 83 Gasparella A. and **Pernigotto G.**, 2011. *Comparison of quasi-steady state and dynamic simulation approaches for the calculation of building thermal losses*, Proceedings of the 66th ATI National Congress, Rende, Italy, 5th -9th September 2011. ISBN: 9788895267111
- 84 Cappelletti F., **Pernigotto G.**, Gasparella A. and Romagnoni P., 2012. *Energy performance of different glazing types in an open-space office with controlled indoor thermal comfort*, Proceedings of the 67th ATI National Congress, Trieste, Italy, 11th-14th September 2012. ISBN: 9788890767609
- 85 Penna P., **Pernigotto G.**, Cappelletti F. and Gasparella A., 2012. *Cost effective energy optimization in building refurbishment*, Proceedings of the 67th ATI National Congress, Trieste, Italy, 11th-14th September 2012. ISBN: 9788890767609

- 86 Romagnoni P., Peron F., Cappelletti F., Temporin T, Duolo E., and **Pernigotto G.**, 2019. *Valutazione dell'efficacia di interventi di efficienza energetica negli edifici scolastici*. AICARR Journal 53: 40-45. ISSN: 2038-2723.
- 87 Danovska M., **Pernigotto G.**, Baratieri M., Baggio P., Gasparella A. 2019. *Influence of moisture content, temperature and absorbed solar radiation on the thermal performance of a spruce XLAM wall in the Italian climates*. Proceedings of the 37th UIT Heat Transfer Conference 2019, Padova, Italy, 24th-26th June 2019.

PhD Thesis

- 88 **Pernigotto G.**, 2013. *Evaluation of building envelope energy performance through extensive simulation and parametrical analysis*. Weblink: <http://paduaresearch.cab.unipd.it/5477/>

[9] Publications indexes (06/2020)

Scopus Index

Number of Papers: **48**
Citations: **401**
H-index: **10**

ISI-Web of Science Index

Number of Papers: **31**
Citations: **319**
H-index: **9**

[10] Participation to scientific conferences

Participation to conferences in the last 3 years.

- 2019 Building Simulation 2019**, Rome, Italy, 2nd-4th September 2019
Number of papers as presenting author: **1**
Title: “Clustering of European Climates and Representative Climate Identification for Building Energy Simulation Analyses”
37th UIT Heat Transfer Conference 2019, Padova, Italy, 24th-26th June 2019
Building Simulation Applications 2019, Bolzano, Italy, 19th-21st June 2019
- 2018 V International High Performance Buildings Conference at Purdue**, West Lafayette (Indiana), U.S., 9th-12th July 2018
Number of papers as presenting author: **1**
Title: “Classification of European Climates for Building Energy Simulation Analyses”
- 2017 Building Simulation Applications 2017**, Bolzano, Italy, 8th-10th February 2017
EnviBUILD 2017, Vienna, Austria, 7th-8th September 2017
Number of papers as presenting author: **1**

Title: *“Development of Extreme Reference Years for Building Energy Simulation Scenarios”*

2016 IV International High Performance Buildings Conference at Purdue, West Lafayette (Indiana), U.S., 11th-14th July 2016

Number of papers as presenting author: **1**

Title: *“Solar irradiance modelling and uncertainty on building hourly profiles of heating and cooling energy needs”*

Participation to previous conferences.

2015 Building Simulation Applications 2015, Bolzano, Italy, 4th-6th February 2015

Number of papers as presenting author: **1**

Title: *“Experimental characterization of the dynamic thermal properties of opaque elements under dynamic periodic solicitation”*

2014 III International High Performance Buildings Conference at Purdue, West Lafayette (Indiana), U.S., 14th-17th July 2014

Number of papers as presenting author: **1**

Title: *“Development of sets of simplified building models for building simulation”*

2013 Building Simulation Applications 2013, Bolzano, Italy, 30th January - 1st February 2013

Number of papers as presenting author: **3**

Titles:

“Long term evaluation of building energy performance: comparison of the test reference year and historical data series in the North Italian climates”;

“Quasi-steady state and dynamic simulation approaches for the calculation of building energy needs: part 1 Thermal losses”;

“Quasi-steady state and dynamic simulation approaches for the calculation of building energy needs: part 2 Thermal gains”

2012 II International High Performance Buildings Conference at Purdue, West Lafayette (Indiana), U.S., 16th-19th July 2012

Number of papers as presenting author: **1**

Title: *“Extensive utilization of dynamic simulation for sensitivity analysis and optimization design of refurbishment measures”*

5th International Building Physics Conference, Kyoto, Japan, 28th-31st May 2012

Number of papers as presenting author: **1**

Title: *“Comparative evaluation methodology of two building energy simulation codes: TRNSYS and EnergyPlus”*

- 2011 Building Simulation 2011, 12th Conference of IBPSA**, Sydney, Australia, 14th-16th November 2011
 Number of papers as presenting author: **1**
 Title: *“Summer load evaluation in the Italian climate: sensitivity of the loss utilization factor to the weather data”*
- 66th ATI National Congress**, Rende, Italy, 5th-9th September 2011
 Number of papers as presenting author: **1**
 Title: *“Comparison of quasi-steady state and dynamic simulation approaches for the calculation of building thermal losses”*
- 2010 65th ATI National Congress**, Domus de Maria, Italy, 13th-17th September 2010
 Number of papers as presenting author: **1**
 Title: *“Analisi comparativa dei codici di simulazione dinamica degli edifici: un confronto tra TRNSYS ed EnergyPlus”*
- Clima 2010, 10th REHVA World Congress**, Antalya, Turkey, 9th-12th May 2010

[11] Invited lectures

- [11.1] **Modalità di posa delle finestre: teoria e calcolo del coefficiente lineico / Installation of windows: theory and calculation of the linear thermal transmittance**
- Lecturer and author: dr. G. Pernigotto.
 Date: 12/06/2015.
 Seminar included in the II level Master “BEAM” (“Master in Processi Costruttivi Sostenibili BEAM - Building Environmental Assessment and Modeling”), University IUAV of Venezia.
- [11.2] **Energy performance of the building envelope**
- Lecturer and author: dr. G. Pernigotto.
 Date: 01/07/2014.
 Seminar “Energy performance of the building envelope” at the 7th Summer School of Applied Physics - “Zero energy building: building envelope, energy modelling, multi-purpose systems”, University of Sannio, Benevento, 30th June – 4th July 2014.
- [11.3] **Extensive comparative analysis of building energy simulation codes: heating and cooling energy needs and peak loads calculation in TRNSYS and EnergyPlus for southern Europe climates**
- Lecturer: prof. A. Gasparella.
 Authors: prof. A. Gasparella, dr. G. Pernigotto.
 Date: 21/01/2014.
 Seminar “Optimization Techniques in HVAC” at the ASHRAE 2014 Winter Conference; New York City (New York), U.S.

[11.4] Use of extreme reference years in building retrofit optimization
(http://kgh-kongres.rs/images/2018/pp/04_Andrea_GASPARELLA.pdf)

Lecturer: prof. A. Gasparella.

Authors: Dr. A. Prada, Dr. G. Pernigotto, Prof. A. Gasparella.

Date: 5–7/12/2018. Keynote at the 49th International Congress and Exhibition on Heating, Refrigeration and Air-Conditioning, Belgrade, Serbia, 5th-7th December 2018.

[12] Peer review and project review activity

Peer-review activity for the following international journals:

- “Building and Environment” (Q1; IF: 4.820),
- “Energy and Buildings” (Q1; IF: 4.495),
- “Energy Efficiency” (Q2; IF: 1.961),
- “International Journal of Thermal Sciences” (Q1; IF: 3.488)
- “Journal of Building Engineering” (Q2; IF: 2.378),
- “Journal of Building Performance Simulation” (Q1; IF: 3.110),
- “Renewable Energy” (Q1; IF: 5.439),
- “Sustainable Cities and Society” (Q1; IF: 4.624),
- “Science and Technology for the Built Environment” (formerly known as “HVAC&R Research”; Q2; IF: 1.199).

I received a certificate of “Outstanding contribution in reviewing” by the journal editorial board since I have been in the top 10th percentile of the journal reviewers for “Energy and Buildings” (2014, 2017), “Journal of Building Engineering” (2018), “Renewable Energy” (2016) and “Sustainable Cities and Society” (2017).

Project reviewer for the Dutch Research Council (NWO) since 2019.

[13] Other

Habilitations:

- Italian National Habilitation as Associate Professor in April 2017.
- Admitted to the industrial engineering profession in 2009.

Editorial activity:

- **Pernigotto G.**, Patuzzi F., Prada A., Corrado V. and Gasparella A. 2018. “Proceedings of Building Simulation Applications BSA 2017”. ISSN: 2531-6702; ISBN: 978-88-6046-136-0.
Weblink: <https://bupress.unibz.it/building-simulation-applications-bsa-2017.html>

Awards:

- Award for III best paper at the IV International High Performance Buildings Conference at Purdue [**paper 70**].

**[14]
Statement of
research
interest**

Research interests:

- Evaluation of building energy performances by means of analytical and detailed dynamic simulation approaches.
- Characterization of the thermal behaviour of building envelope components through numerical simulations and laboratory experimental tests.
- Statistical analysis of building energy consumption data, evaluation of energy saving measures and development of optimized scenarios of building energy refurbishment. Analysis of the energy performance of the existing building stock and simulation at urban scale.
- Assessment of the capabilities of calculation methods for building energy performance evaluations and analysis of the sensitivity to the boundary conditions (i.e., weather data and building use).

**[15]
Language
competence**

Mother tongue: Italian

Other languages (Self-assessment according to Common European Reference Framework for Languages):

Comprehension		Spoken production		Written production
Listening	Reading	Oral interaction	Oral production	
English				
C1 Proficient user	C1 Proficient user	C1 Proficient user	C1 Proficient user	C1 Proficient user
German				
A2 Basic user	A2 Basic user	A2 Basic user	A2 Basic user	A2 Basic user
French				
A2 Basic user	A2 Basic user	A2 Basic user	A2 Basic user	A2 Basic user

Certifications:

- English:
 - **UNIBZ internal certifications organized by the UNIBZ language Center: C1 (05.06.18)**
- German:
 - **A2 Goethe Zertifikat (30.05.18)**

[16]
Institutional
activity

Institutional activity in UNIBZ since 2016:

- Member of the PhD Council of “Sustainable Energy and Technology” SET of the Free University of Bozen-Bolzano (since academic years 2016-2017). Main responsibilities:
 - Substitute Member of evaluation commission for the selection of the candidates applying to the 34th and 35th cycles of the PhD Programme SET.
- Member of the Study Council of the Master Degree in Energy Engineering (LM-30) of the Free University of Bozen-Bolzano (since academic years 2017-2018). Main responsibilities:
 - Member of the Committee for EURACE accreditation of the Master Degree in Energy Engineering (LM-30);
 - Control and improvement of syllabus for the courses of the study program;
 - Assessment of minimum requirement for the enrollment to the study program for non-EU students;
 - Supervision of students’ projects and activities in the framework of the project «Atelier Riqualficazione della città consolidata» for the renovation of South Tyrol military areas, in the framework of the course “Special Issues of Building Physics”
(https://www.difesa.it/SGD-DNA/InfoCom/News/Pagine/StudioRiqualfAreeMil_BZ_3nov17.aspx)
- Participation to the Study Council of the Bachelor in Industrial Mechanical Engineering (L-9) of the Free University of Bozen-Bolzano (since academic years 2017-2018). Main responsibilities:
 - Member of the Committee for the definition of criteria for intermediate and final evaluations.
 - Agreement with the High School Delai of Bolzano to allow 5th year students to attend to the course “Applicazioni delle norme sull’efficienza energetica in edilizia”.
- Member of several evaluation commissions for the selection of the candidates for research fellow positions and lecturer positions.
- Assistance activity for the evaluation of space needs of the Faculty of Science and Technology.

[17]
Dissemination
and
technology
transfer

Activities related to third mission at UNIBZ:

- Participation to commissioned-research project [7.1-7.13];
- Activities of dissemination related to projects [7.14-7.22];
- Activities for local communities in the framework of the study programmes (e.g., cooperation with high schools and renovation of military camps, as indicated in [16]).

Bolzano, June 2020

Giovanni Pernigotto