

CURRICULUM VITAE

ROBERTA PERNETTI

PERSONAL INFORMATION

Name **ROBERTA PERNETTI**

Role **RICERCATORE A TEMPO DETERMINATO RTDA**

Address UNIVERSITA' DEGLI STUDI DI PAVIA
Dipartimento di sanità pubblica, medicina sperimentale e forense – Unità di Medicina del Lavoro.
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WORK EXPERIENCE

- Dates November 2020 - today
 - Name and address of the employer Università degli Studi di Pavia – Department of Public Health, experimental and forensic medicine – Unit of Occupational Medicine
 - Occupation or position held **Researcher (RTDA) in Occupational medicine (Medicina del lavoro - MED/44)**
 - Main activities and responsibilities Assessment of indoor air quality on occupational environment and analysis of remediation measures, on-field monitoring of ultrafine particles in additive manufacturing and 3D printing settings.
Main projects:
(2021-ongoing) National Biodiversity Future Centre (<https://www.nbfc.it/>) financed under Next Generation EU programme (PNRR). Participation as researcher in Spoke 6 – working table 1 “Urban exposome”. Specific project: *Assessing occupational and urban exposome and its potential mitigation through nature-based solutions.*
(2023-ongoing) BEST Big data and deep learning nella sorveglianza dei tumori professionali. Financed under the program BRIC-INAIL. Activities in the evaluation of the impact of work exposure on occupational cancer.
(2022) Winner of Fondazione Eni Enrico Mattei Award for the project “**Assessment of nanoparticle release and related potential health effects in Metal Additive Manufacturing facilities**”
(2020-2022) MADE4Lo - Metal ADditivE for Lombardy. Financed under ERDF programme. Scientific support for the on-field monitoring of ultrafine particles in additive manufacturing environment.
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- Dates March 2014 – October 2020
 - Name and address of the employer Institute for Renewable Energy, EURAC Research, Bolzano, Italy
 - Type of business or sector Applied Research
 - Occupation or position held **Senior researcher and Technical Project Manager**
 - Main activities and responsibilities Technical supervision of the activities within the group “ Whole Building Evaluation”, project manager and coordination of the contributions within research projects at European and local level, preparation of new project proposals under the framework of Horizon 2020, Interreg (Central Europe and Alpine Space), ERDF (European Regional Development Funds) and local programmes.

Main projects:

(2019-2020) H2020 project CULTURAL-E – Climate and cultural based design and market valuable technology solutions for Plus Energy Houses (PEH). Role: Coordinator of WP4 Definition of PEH tailored solution sets and business models

(2017-2020) H2020 - CRAVEZero - Cost Reduction and market Acceleration for Viable nearly zero-Energy buildings. Life cycle cost (LCC) analysis of nZEB and identification of the cost-saving potentials in processes and technologies. Role: project manager and technical advisor. Coordination of the activities of eurac within the project and responsible of the developments of WP2 dealing with the analysis of the LCC of the sample buildings.

(2016-2020) H2020 - 4RinEU - Robust&Reliable technology concepts and business models for triggering deep Renovation of Residential buildings in EU. Role: Responsible of WP2 aimed at developing deep renovation technologies according to the renovation needs identified through a building stock analysis of the European Building stock.

(2016-2020) IEA EBC - Annex 67 - Energy Flexible Buildings. Role: responsible for SubTask A Definition and context of Energy Flexible Buildings and technical contributor.

(2015-2017) Local project - Saving Public Energy. Role: Coordinator of the activities and technical advisor. The project aims to define an integrated approach for planning the renovation of the building stock owned by the province of Bolzano, by identifying priorities and renovation scenarios according to the needs and the cost effectiveness of the intervention.

(2015-2020) Local project - Regional Energy Modelling. Role: technical contributor. The project aims at defining future scenarios (target 2050) for the area of South Tyrol considering the interaction between the implementation of RES, the building renovation and the construction of new NZEBs.

(2015) EU Tender - Observatory of the building stock and related key policies: Role: technical contributor. collaboration as external national expert for Italy in the implementation of the EU Building Stock Observatory aimed at monitoring the actual energy consumption of existing building to orient the EU key policies.

(2014-2016) EU FP7 Bricker: Role: technical contributor. Technical support in the analysis of the thermal behaviour of the innovative thermal insulation embedding phase change materials through transient simulations

(2014-2016) Interreg Alpine Space - CABEE Capitalizing Alpine Building Evaluation experiences. Role: technical contributor and WP responsible. Coordination activities and technical work as policy analysis, training to improve user behaviour in buildings, sustainability assessment protocols.

(2014-2015) Interreg Alpine Space - AlpBC: coordination of the activities as external expert on the building stock analysis developed for the Val Passiria Area, involving 3 municipalities (Moso, San Leonardo and San Martino). Technical support in the definition of the typology matrix and supervision of the activities for the energy performance evaluation.

(2014) Local project - Acceleratore di Innovazione (Role: Support in the organization, lecturer and tutor. Teaching activities in the field of building simulations and technical tutoring for a group of students working in the company Karl Pichler about the development of an innovative reflective coating for internal thermal insulation.

(2014) Interreg Alpine Space - ViSiBLE. Role: technical contributor. Support in the development of the technical activities of the project

- Dates (from - to) January 2013 – February 2014
- Name and address of the employer Università degli Studi di Pavia - Department of Civil Engineering
- Type of business or sector Research and Education
- Occupation or position held **Post-Doctoral Research fellow**
- Main activities and responsibilities Research in the field of performance assessment of existing buildings with steady-state and transient modelling. Participation to the National funded project PRIN 2008 Energy performance of existing buildings and refurbishment criteria for increasing energy performance, thermal comfort and sustainability. Role: technical collaborator

National Scientific coordinator: Prof. A. Magrini

- **Dates (from - to)** April 2012 – September 2012
- **Name and address of the employer** Department of Civil Engineering
University of Trento
- **Type of business or sector** Research and Education
- **Occupation or position held** Post-Doctoral Research fellow
- **Main activities and responsibilities** Technical collaboration for the definition of Guidelines for calibrated energy simulation models for existing buildings. Scientific coordinator: Prof. P. Baggio

EDUCATION AND TRAINING

- **Dates (from - to)** 2009-2012
- **Name and type of organisation providing education and training** Università degli Studi di Pavia
- **Principal subjects/occupational skills covered** PhD thesis title: “On the definition and the use of building energy performance simulations”
- **Title of qualification awarded** **Doctorate in Civil Engineering**

- **Dates (from - to)** 2004 – 2009
 - **Name and type of organisation providing education and training** Università degli Studi di Pavia
 - **Principal subjects/occupational skills covered** Thesis title “Refurbishment strategy for social housing in Pavia”
Grade: 110/110 cum laude
 - **Title of qualification awarded** **M.Sc in Building Engineering**
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- **Dates (from - to)** 2004 - 2009
 - **Name and type of organisation providing education and training** University School for Advanced Study of Pavia, Italy
 - **Principal subjects/occupational skills covered** Division of Science and technology - University Diploma - Thesis title: “Analysis of quasi steady state method for Energy performance assessment”
 - **Title of qualification awarded** **Graduate in Science and technology area**

PERSONAL SKILLS AND COMPETENCES

MOTHER TONGUE
OTHER LANGUAGES

ITALIAN
ENGLISH

SCIENTIFIC SKILLS AND COMPETENCES
Living and working with other people, in multicultural environments, in positions where communication is important and situations where teamwork is essential (for example culture and sports), etc.

Research interests (5 Key words): Indoor Air Quality, particulate monitoring, evaluation of emerging occupational risks, modelling indoor environmental conditions, building performance assessment.
Author of 32 publication on Scientific Journals.
Communication at 10 national and international congresses
Supervisor of 12 university theses (bachelor and master degree);
Supervisor of 1 doctoral thesis.

PUBLICATION INDEXES
(SCOPUS)

NUMBER OF PUBLICATIONS: 32
TOTAL NUMBER OF CITATIONS: 494

Pernetti R.; Maffia S.; Previtali B.; Oddone E. **Assessment of nanoparticle emission in additive manufacturing: Comparing wire and powder laser metal deposition processes** (2023) Journal of Occupational and Environmental Hygiene, vol. 20, DOI: 10.1080/15459624.2023.2208649

Ferrante D.; Angelini A.; ... Pernetti R.; ...; Marinaccio A. **Cause specific mortality in an Italian pool of asbestos workers cohorts** (2023) American Journal of Industrial Medicine, vol. , DOI: 10.1002/ajim.23546

Tamburini M.; Pernetti R.; Anelli M.; Oddone E.; Morandi A.; Osuchowski A.; Villani S.; Montomoli C.; Monti M.C. **Analysing the Impact on Health and Environment from Biogas Production Process and Biomass Combustion: A Scoping Review** (2023) International Journal of Environmental Research and Public Health, vol. 20, DOI: 10.3390/ijerph20075305

Pernetti R.; Galbusera F.; Cattenone A.; Bergamaschi E.; Previtali B.; Oddone E. **Characterizing Nanoparticle Release Patterns of Laser Powder Bed Fusion in Metal Additive Manufacturing: First Step Towards Mitigation Measures** (2023) Annals of Work Exposures and Health, vol. 67, DOI: 10.1093/annweh/wxac080

Pistore L, Tintinaglia F, Pernetti R, Stivanello P, Pasut W. **Indirect Effects of High-Performance Buildings at Household and Community Level: A Systematic Literature Review**. Energies. 2023; 16(5):2499. <https://doi.org/10.3390/en16052499>

R. Pernetti, F. Galbusera, A. Cattenone, E. Bergamaschi, B. Previtali, E. Oddone. **Characterizing Nanoparticle Release Patterns of Laser Powder Bed Fusion in Metal Additive Manufacturing: First Step Towards Mitigation Measures**. (2022) Annals of Work Exposures and Health

Hawila A.A.W., Pernetti R., Pozza C., Belleri A. **Plus energy building: Operational definition and assessment**. (2022) Energy and Buildings, 265, art. no. 112069.

E. Oddone, R. Pernetti, M.L. Fiorentino, E. Grignani, D. Tamborini, G. Alaimo, F. Auricchio, B. Previtali, M. Imbriani. **Particle Measurements of Metal Additive Manufacturing to Assess Working Occupational Exposures: a Comparative Analysis of Selective Laser Melting, Laser Metal Deposition and Hybrid Laser Metal Deposition**. Accepted for publication in Industrial health (2021).

Vigna, R. Lollini, R. Pernetti. **Assessing the energy flexibility of building clusters under different forcing factors** (2021) Journal of Building Engineering, 44

R. Pernetti, F. Garzia, U. Filippi Oberegger. **Sensitivity analysis as support for reliable life cycle cost evaluation applied to eleven nearly zero-energy buildings in Europe** (2021) Sustainable Cities and Society, 74, 103139

R. Pernetti, R. Pinotti, R. Lollini. **Repository of deep renovation packages based on industrialized solutions: Definition and application** (2021) Sustainability (Switzerland), 13 (11), 6412

I. Vigna, J. Balest, W. Pasut, R. Pernetti. **Office occupants' perspective dealing with energy flexibility: A large-scale survey in the province of Bolzano** (2020). Energies, 13(17), 4312

E. Oddone, R. Pernetti, G. Malagò, G. Taino. **Cell Phones, Radio Frequencies (RF) and Health: IARC classification and epidemiological updates | Cellulari, Radiofrequenze (RF) e salute: classificazione IARC e aggiornamenti epidemiologici**. Giornale italiano di medicina del lavoro ed ergonomia, 2020, 42(4)

E. Vázquez-López, F. Garzia, R. Pernetti J., Solís-Guzmán, M. Marrero. **Assessment model of end-of-life costs and waste quantification in selective demolitions: Case studies of nearly zero-energy buildings** (2020) Sustainability (Switzerland), 12(15), 6255

I. Vigna, R. Pernetti, G. Pernigotto, A. Gasparella. **Analysis of the building smart readiness indicator calculation: A comparative case-study with two panels of experts** (2020). Energies, 13(11), 2796

E. Oddone, R. Pernetti, G. Malagò, G. Taino. **Cellulari, Radiofrequenze (RF) e salute: classificazione IARC e aggiornamenti epidemiologici** (2020). Giornale Italiano di Medicina del Lavoro e ergonomia. Articolo accettato e in fase di stampa.

U. Filippi Oberegger, R. Pernetti, R. Lollini. **Bottom-up building stock retrofit based on levelized cost of saved energy** (2020) Energy and Buildings, 210.

- E. Mlecnik, J. Parker, Z. Ma, C. Corchero, A. Knotzer, R. Perneti. **Policy challenges for the development of energy flexibility services** (2020) Energy Policy, 137.
- R. Perneti, F. Garzia, G. Paoletti, T. Weiss. **Towards the definition of a nZEB cost spreadsheet as a support tool for the design** (2019) IOP Conference Series: Earth and Environmental Science, 323 (1).
- I. Vigna, I. de Jaeger, D. Saelens, M. Lovati, R. Lollini, R. Perneti **Evaluating energy and flexibility performance of building clusters**. Building Simulation conference, Rome (2019) .
- R. Pinotti, R. Perneti, F. Babich, R. Lollini. **Towards a systematic approach for supporting design process of seep renovation packages based on prefabricated façade technologies**. Building Simulation conference, Rome (2019).
- S. D'Oca, A. Ferrante, C. Ferrer, R. Perneti, A. Gralka, p. Veld. **Technical, financial, and social barriers and challenges in deep building renovation: Integration of lessons learned from the H2020 cluster projects** (2018) Buildings, 8 (12), art. no. 174.
- I. Vigna, M. Lovati, R. Perneti. **A modelling approach for maximizing energy matching at building cluster and district scale**. BSO Conference – Cambridge (2018).
- B. Berggren, M. Wall, T. Weiss, F. Garzia, R. Perneti. **LCC analysis of a Swedish Net Zero Energy Building including co-benefits**. ISEC conference, Graz (2018).
- M. G. Prina, M. Cozzini, G. Garegnani, G. Manzolini, D. Moser, U. Filippi Oberegger, R. Perneti, R. Vaccaro, W. Sparber. **Multi-objective optimization algorithm coupled to EnergyPLAN software: The EPLANopt model**. (2018) Energy, Volume 149.
- I. Vigna, R. Perneti, W. Pasut, R. Lollini. **New domain for promoting energy efficiency: Energy Flexible Building Cluster**. (2018) Sustainable Cities and Society, Volume n. 38.
- R. Pascual, G. Paoletti, R. Perneti, R. Lollini. **Nearly Zero Energy Buildings: An Overview of the Main Construction Features across Europe**. (2017) Buildings, Volume n.43.
- D. Exner, V. D'Alonzo, G. Paoletti, R. Pascual, R. Perneti. **Building stock analysis for the definition of renovation scenario at urban scale**. (2017) Smart and Sustainable Planning for Cities and Regions. Ed. Springer (Capitolo di libro).
- W. Pasut, R. Perneti, R. Lollini. **Flessibilità energetica: la sfida per gli edifici di ultima generazione**. (2016) Casa e Clima n. 62 - n. 09/2016.
- R. Perneti, A. Moro, G. Barbano, R. Lollini. **Limits and potentials for mass certification with sustainability assessment protocols National Conference AiCARR: I protocolli di sostenibilità ambientale: aspetti energetici ed impiantistici**, Bologna (2014).
- R. Perneti, A. Moro, G. Barbano, R. Lollini. **Protocolli di sostenibilità, pronti al decollo?** (2015) Casa e Clima n.53 - 01/2015.
- R. Perneti, L. Magnani, A. Magrini. **Energy performance of buildings: A comparison of standard assessment methods**. Springer (2013) Nearly Zero Energy Building Refurbishment: A Multidisciplinary Approach, pp. 177-205 (Capitolo di libro).
- R. Perneti, A. Prada, P. Baggio. **The calibration process of building energy models. Chapter published in Building Refurbishment for Energy Performance: A Global Approach**. (2014) Green Energy and Technology, pp. 215-252 (Capitolo di libro).
- R. Perneti, A. Prada, P. Baggio. **Dynamic Simulation as a Tool for Energy Performance Assessment**. 11th Rehva World Congress "Energy Efficient, Smart and Healthy Buildings". Praga, (2013).
- R. Perneti, A. Prada, P. Baggio. **On the influence of several parameters in energy model calibration: the case of an historical building**. Proceedings of BSA Building Simulation Applications - 1st IBPSA-Italy Conference. Bolzano (2013) .
- A. Magrini, L. Magnani, R. Perneti. **The effort to bring existing buildings towards the A class: A discussion on the application of calculation methodologies**. (2012) Applied Energy, Elsevier, Volume n. 97.

R. Pernetti, A. Prada, P. Baggio. **La simulazione dinamica come strumento per la valutazione dello stato di fatto e la preparazione dell'intervento.** Proceedings of ATI National Conference (Associazione Termotecnica Italiana) Trieste (2012) .

A. Magrini, L. Magnani, R. Pernetti. **Analysis of the thermal control system incidence on the energy performance in building refurbishment strategies.** 48° AiCARR International Conference - Energy refurbishment of existing Buildings: which solutions for an integrated System, Envelope, Plant. Baveno (2011).

A. Magrini, L. Magnani, R. Pernetti. **Towards the A class: calculation methods of the energy performance in the UNI/TS 11300 Standard.** Proceedings of ICAE 2011 - International Conference on Applied Energy. Perugia (2011).

F. Turri, R. Pernetti. **Italy, sustainable renewal for social housing.** Proceedings of Sb10Mad -International Sustainable Building Conference. Madrid (2010).

F. Turri, R. Pernetti, E. Zamperini, V. Cappelletti. **Retraining of social housing in Pavia.** Proceedings of RSF - Rehabilitation and Sustainability. The Future is possible. Barcellona (2010).