

PERSONAL INFORMATION

Silvia Minetto

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WORK EXPERIENCE

02/03/2021 -today

Senior Researcher

01/07/2011- 01/03/2021

Researcher

National Research Council –Construction Technologies Institute, Padova (Italy)

- thermodynamics of the inverse cycles
- refrigerating equipment and installations
- components and systems optimisation with reference to energy saving
- CO₂ refrigeration systems and heat pumps
- transport refrigeration

Business or sector Research

03/10/2006 – 30/06/2011

Post-Doc Researcher

Applied Thermodynamics and Refrigeration Department of the University of Padova, (Italy)

- Theoretical and experimental analysis of refrigeration systems and heat pumps
- Optimisation of components and systems.
- Refrigeration with CO₂

Business or sector Research

01/03/2005 - 30/09/2006

Project Leader/Thermodynamics Specialist

Primary Development Food Preservation, Electrolux Home Products Italy S.p.A. Santa Lucia di Piave, (TV) (Italy)

- Investigation and development of innovative solutions for domestic refrigeration

Business or sector Mechanical Industry

01/02/2001 – 28/02/2005

R&D laboratory manager

01/03/1999 – 31/01/2001

R&D Engineer

Costan S.p.A. –Limana (BL) (Italy)

- Experimental activity on retail display cabinets
- Optimisation of components and systems for commercial refrigeration
- CO₂ commercial refrigeration equipment.

Business or sector Mechanical Industry

EDUCATION AND TRAINING

2003 - 2005

Ph.D. in Applied Thermodynamics and Refrigeration

Doctoral School at Padova University

Title of thesis: “*Impianti frigoriferi operanti con anidride carbonica. Analisi di soluzioni innovative* (Refrigeration plants operating with carbon dioxide. Analysis of innovative solutions)”

1992 – 1998 Master Degree in Mechanical Engineering - Specialisation in Applied Thermodynamics

University of Padova –Engineering Faculty

Title of the thesis: “*Analisi teorica e sperimentale sul frazionamento di miscele zeotropiche di fluidi frigoriferi nei processi bifase.* (Theoretical and experimental analysis of zeotropic mixtures fractioning processes in two-phase flow)”.

PERSONAL SKILLS

Mother tongue(s) Italian

Other language(s)

	UNDERSTANDING		SPEAKING		WRITING
	Listening	Reading	Spoken interaction	Spoken production	
English	Very Good	Very Good	Very Good	Very Good	Very Good

ADDITIONAL INFORMATION

from 01/10/2021	Responsible of the Research Group “Technologies for environmental sustainability in the HVAC & R sector and in the Cold Chain”, Construction Technologies Institute, Padova
01/02/2016 – 30/09/2021	Responsible of the “Thermal Test under Controlled Environment Laboratory”, Construction Technologies Institute, Padova. The laboratory includes a tunnel for testing refrigerated trucks according to the ATP (International Agreement for the transport of perishable goods) regulations and is the official ATP test station designated by the Ministry of Transport.
01/07/2011 – 31/12/2016	Responsible of the “Thermo-fluid-dynamic Laboratory” at the Construction Technologies Institute, Padova.
2019-today	President of Commission D1- Refrigerated Transport- of the International Institute of Refrigeration IIR-IIF
2015 - today	Member of the Italian delegation at the United Nations Economic Commission for Europe (UNECE) - annual sessions of WP11 Working Party on Transport of Perishable Foodstuffs
2016-today	Coordinator of the Technical Commission CT 246 - Metodologie di prova e requisiti per mezzi di trasporto coibentati (Test methods and requirements for refrigerated vehicles)- Interface CEN/TC 413 - of the Italian Thermotechnical Committee (CTI)
2016-today	Commission member of the European Committee for Standardization CEN/TC 413/WG 1 e WG2 (“CEN/TC 413 - Insulated means of transport for temperature sensitive goods with or without cooling and/or heating device)
May 2021	Member (opponent) of the evaluation committee of the PhD thesis “State-of-the-art integrated refrigeration systems in supermarkets” at KTH- Sweden
Jan-March 2021	Rapporteur for the doctoral degree defence at the Université de Lyon (France) and President of the Defence Committee
2017-today	Member of the Board of Supervisors at the Doctoral School in Industrial Engineering of the University of Padova
2012-today	Supervisor and Co-supervisor of PhD Students/ Doctoral School in Industrial Engineering-University of Padova.
2014-2015	Reviewer for Research Projects financed by the Industry Ministry In the program “Fondo Crescita Sostenibile” –MISE (2014-2015):
2013	Reviewer for PRIN projects (Progetti di Ricerca di Interesse Nazionale) of the Research Ministry
2016 – today	Reviewer for scientific journals: (Elsevier, MDPI, Taylor&Francis, etc)
2014-2023	Qualified as Associate Professor in the Sector 09/C2 (Fisica Tecnica e Ingegneria Nucleare- Applied Physics and Nuclear Engineering) at the 2012 Italian National Scientific Qualification Procedure

2023-today

Qualified as Full Professor in the Sector 09/C2 (Fisica Tecnica e Ingegneria Nucleare- Applied Physics and Nuclear Engineering) at the Italian National Scientific Qualification Procedure

Patents

- A heat pump laundry dryer
Inventor: Bison A., Cavarretta F., Mancini F., Minetto S., Passarini A.
Applicant: Electrolux Home Prod. Corp. (BE)
Publication EP2527522 (B1)-Priority date 2011-05-26
Legal status: european patent granted on 25.12.2013
- A heat pump laundry dryer
Inventor: Bison A., Cavarretta F., Mancini F., Minetto S., Passarini A.
Applicant: Electrolux Home Prod. Corp. (BE)
Publication EP2527521(A1)- Priority date 2011-05-26
Legal status: application deemed to be withdrawn
- Refrigerator
Inventor: Esteve K.; Alberghetti P.; Chrestenzen L.; Speck P.; Jonzon M.; Minetto S.; Beeh M.; Allesbrook A.
Applicant: Electrolux Home Prod. Corp. (BE)
Publication info: EP1983282 (A1) - Priority date 2008-10-22
Legal status: Examination in progress
- Home Laundry Drier
Inventor: Bison A., Fornasieri E., Minetto S.
Applicant: Electrolux Home Prod. Corp. (BE)
Publication: WO2009065538 (A1) - Priority date 2009-05-28
Legal status: Despatch of communication that the application is deemed to be withdrawn, reason: filing fee / search fee not paid in time [2011/08]
- Household appliance for the supplying of cooler water or other beverage and relative operation method
Inventor: Volker T., Ingrassia T., Minetto S.
Applicant: Electrolux Home Prod. Corp. (BE)
Publication info: WO2008037383 (A1)- Priority date 2008-04-03
Legal status: 09.08.2010 Despatch of communication that the application is deemed to be withdrawn, reason: filing fee /search fee not paid in time [2011/08]
- Household appliance for the supplying of cooler water or other beverage and relative operation method
Inventor: Volker T., Ingrassia T., Minetto S., Johansson D.
Applicant: Electrolux Home Prod. Corp. (BE)
Publication info: EP1906120 (A1) - Priority date 2008-04-02
Legal status: Despatch of communication that the application is deemed to be withdrawn, reason: reply to the communication from the examining division not received in time [2009/46]

Responsibility in Granted Projects

- Scientific responsible for CNR / WP leader for the project ENOUGH "European food chain supply to reduce GHG emissions by 2050" Call: H2020-LC-GD-2020-4, Project Nr. 101036588. Starting 01/10/2021-Duration 48 months.
- Scientific responsible for CNR for the project MULTIPACK "Demonstration of the next generation standardised integrated cooling and heating packages for commercial and public buildings based on environment-friendly carbon dioxide vapour compression cycles" H2020-EE-2016-2017/H2020-EE-2016-RIA-IA Project Nr 723137. Starting date 01/10/2016-duration 60 months
- Scientific responsible for CNR for the project SUPERSMART "Expertise hub for a market uptake of energy-efficient supermarkets by awareness raising, knowledge transfer and pre-preparation of an EU Ecolabel", H2020-EE-2015-3-MarketUptake Call EE-14-2015 Removing market barriers to the uptake, of efficient heating and cooling solutions." Project Nr. 696076. Period 01/02/2016-31/01/2019
- Scientific responsible for the Project "Impianti di refrigerazione e pompe di calore operanti con anidride carbonica: miglioramento dell'efficienza attraverso l'impiego di eiettori bifase (Refrigeration systems and heat pumps working with carbon dioxide: efficiency improvement by means of two-phase ejectors", co-financed by the EU under the Porgramme 2007-2013 of the Veneto Region. Project code: 436/1/3/1686/2012.

Responsibility in Industrial Projects

- Scientific responsible for the project "Progettazione concettuale di un impianto di prova di compressori per anidride carbonica", financed by Frascold S.r.l. Starting date : 18/10/2017-duration 24 months

Bibliometric indicators

- Documents 65, H index 18, Citations 1080 (Scopus- 23/04/2024)
- Orcid 0000-0001-5035-6599

Publications in International
Journal papers

- FABRIS, F., BODY, J., MARINETTI, S., MINETTO, S., SMOLKA, J., ROSSETTI, A., 2024. Numerical modelling of a single-compression multi-temperature ejector-supported R744 refrigeration unit for last mile delivery. *International Journal of Refrigeration* Volume 160, April 2024, Pages 65-75
- FABRIS, F., FABRIZIO, M., MARINETTI, S., ROSSETTI, A., MINETTO, S., 2024. Evaluation of the carbon footprint of HFC and natural refrigerant transport refrigeration units from a life-cycle perspective. *International Journal of Refrigeration*, Volume 159, Pages 17 - 27 March 2024
- FABRIS, F., PARDINAS, A.A., MARINETTI, S., ROSSETTI, A., HAFNER, A., MINETTO, S., 2023. A novel R744 multi-temperature cycle for refrigerated transport applications with low-temperature ejector: Experimental ejector characterization and thermodynamic cycle assessment. *International Journal of Refrigeration*, Volume 152, Pages 26 – 35 August 2023
- MINETTO, S., FABRIS, F., MARINETTI, S., ROSSETTI, A., 2023. A review on present and forthcoming opportunities with natural working fluids in transport refrigeration. *International Journal of Refrigeration*, Volume 152, Pages 343 - 355 August 2023
- SISTI, E., ROSSETTI, A., MINETTO, S., MARINETTI, S., TOSATO, G., BEGHI, A., RAMPAZZO, M., 2023. Assessment of basic control strategies through dynamic simulations: A CO₂-based chiller under extreme off-design conditions. *Energy and Buildings*, Volume 289, June 2023 Article number 113066
- FABRIS, F., ARTUSO, P., MARINETTI, S., MINETTO, S., ROSSETTI, A., 2022. Cooling unit impact on energy and emissions of a refrigerated light truck. *Applied Thermal Engineering*, Volume 216, November 2022 Article number 119132
- ROSSETTI, A., MARINETTI, S.; ARTUSO, P., FABRIS, F., MINETTO, S., 2022. Implementation of a solar aided refrigeration unit for refrigerated trucks employing photovoltaic generators. *Energy Reports* 8, Pages 7789 – 7799 November 2022
- ARTUSO, P., TOSATO, G., MARINETTI, S., HAFNER, A., BANASIAK, K., MINETTO, S., 2021. Dynamic Modelling and Validation of an Air-to-Water Reversible R744 Heat Pump for High Energy Demand Buildings. *Energies* 2021, 14(24)
- FABRIS, F., ARTUSO, P., MARINETTI, S., MINETTO, S., ROSSETTI, A. (2021) Dynamic modelling of a CO₂ transport refrigeration unit with multiple configurations (2021) *Applied Thermal Engineering*, 189, DOI: 10.1016/j.applthermaleng.2021.116749
- AZZOLIN, M., CATTELAN, G., DUGARIA, S., MINETTO, S., CALABRESE, L., DEL COL, D. (2021) Integrated CO₂ systems for supermarkets: Field measurements and assessment for alternative solutions in hot climate *Applied Thermal Engineering*, 187, DOI:10.1016/j.applthermaleng.2021.116560
- TOSATO, G., GIROTTI, S., MINETTO, S., ROSSETTI, A., MARINETTI, S., 2020. An integrated CO₂ unit for heating, cooling and DHW installed in a hotel. *Data from the field*. *J. Phys.: Conf. Ser.* 1599 012058
- Artuso, P., Marinetti, S., Minetto, S., Col, D.D., Rossetti, A. (2020) Modelling the performance of a new cooling unit for refrigerated transport using carbon dioxide as the refrigerant (2020) *International Journal of Refrigeration*, 115, pp. 158-171. DOI: 10.1016/j.ijrefrig.2020.02.032
- GULLO, P., HAFNER, A., BANASIAK, K., MINETTO, S., KRIEZE, E.E. (2019) Multi-ejector concept: A comprehensive review on its latest technological developments *Energies*, 12 (3), DOI: 10.3390/en12030406
- ARTUSO, PAOLO, ROSSETTI, ANTONIO, MINETTO, SILVIA, MARINETTI, SERGIO, MORO, LORENZO, DEL COL, DAVIDE (2019). Dynamic modelling and thermal performance analysis of a refrigerated truck body during operation. *INTERNATIONAL JOURNAL OF REFRIGERATION*, vol. 99, p. 288-299, ISSN: 0140-7007, doi: 10.1016/j.ijrefrig.2018.12.014
- ROSSETTI, ANTONIO, MARINETTI, SERGIO, MINETTO, SILVIA (2018). Multi-physics simulation of CO₂ gas coolers using equivalence modelling. *INTERNATIONAL JOURNAL OF REFRIGERATION*, vol. 90, p. 99-107 ISSN: 0140-7007, doi: 10.1016/j.ijrefrig.2018.04.013
- MINETTO, SILVIA, ROSSETTI, ANTONIO, MARINETTI, SERGIO (2018). Seasonal energy efficiency ratio for remote condensing units in commercial refrigeration systems *INTERNATIONAL JOURNAL OF REFRIGERATION*, vol. 85, p. 85-96, ISSN: 0140-7007, doi: 10.1016/j.ijrefrig.2017.09.013
- MINETTO, SILVIA, MARINETTI, SERGIO, SAGLIA, PIETRO, MASSON, NINA, ROSSETTI, ANTONIO (2018). Non-technological barriers to the diffusion of energy-efficient HVAC&R solutions in the food retail sector. *INTERNATIONAL JOURNAL OF REFRIGERATION*, vol. 86, p. 422-434, ISSN: 0140-7007, doi: 10.1016/j.ijrefrig.2017.11.022
- MINETTO, SILVIA, CECCHINATO, LUCA, BRIGNOLI, RICCARDO, MARINETTI, SERGIO,
- ROSSETTI, ANTONIO (2016). Water-side reversible CO₂ heat pump for residential application. *INTERNATIONAL JOURNAL OF REFRIGERATION*, vol. 63, p. 237-250, ISSN: 0140-7007, doi: 10.1016/j.ijrefrig.2015.12.015

- ROSSETTI, A., MINETTO, S., MARINETTI, S. (2015). A simplified thermal CFD approach to fins and tube heat exchanger: Application to maldistributed airflow on an open display cabinet. INTERNATIONAL JOURNAL OF REFRIGERATION, vol. 57, p. 208-215, ISSN: 0140-7007, doi: 10.1016/j.ijrefrig.2015.05.014
- MARINETTI S, CAVAZZINI G, LAURI I, TESTA S, MINETTO S. (2014) Numerical and experimental analysis of the air flow distribution in the cooling duct of a display cabinet. International Journal of Refrigeration, 42 (2014)
- MINETTO S., BRIGNOLI R., ZILIO C., MARINETTI S. (2014) Experimental analysis of a new method for overfeeding multiple evaporators in refrigeration systems. International Journal of Refrigeration, vol. 38, p. 1-9.
- MINETTO S., BRIGNOLI R., BANASIAK K., HAFNER A., ZILIO C. (2013) Performance assessment of an off-the-shelf R744 heat pump equipped with an ejector. Applied Thermal Engineering Volume 59 (2013): 568–575.
- CECCHINATO L., CORRADI M., MINETTO S. (2012). Energy performance of supermarket refrigeration and air conditioning integrated systems working with natural refrigerants, Applied Thermal Engineering 48 (2012): 378-391
- CECCHINATO L., CORRADI M., COSI G, MINETTO S, RAMPAZZO M (2012). A real-time algorithm for the determination of R744 systems optimal high pressure. International Journal of Refrigeration, vol. 35, p. 817-826.
- CECCHINATO L., CORRADI M., MINETTO S (2012). Energy performance of supermarket refrigeration and air conditioning integrated systems working with natural refrigerants. Applied Thermal Engineering, vol. 48, p. 378-391
- CECCHINATO L., CORRADI M., MINETTO S., (2011), A simplified method to evaluate the energy performance of CO2 heat pump units, International Journal of Thermal Sciences vol. 50, p. 2483-2495
- MINETTO S. (2011), Theoretical and experimental analysis of a CO2 heat pump for domestic hot water, International Journal of Refrigeration.34: 742-751.
- MANCINI F., MINETTO S., FORNASIERI E. (2011), Thermodynamic analysis and experimental investigation of a CO2 household heat pump dryer, International Journal of Refrigeration 34: 851-858.
- MINETTO S. , FORNASIERI E. (2011) An innovative system for feeding once through evaporators in flooded conditions, Applied Thermal Engineering 31 (2011), pp. 370-375.
- CECCHINATO L., CORRADI M., MINETTO S. (2010). Energy performance of supermarket refrigeration and air conditioning integrated systems, Applied Thermal Engineering 30 (2010): 1946-1958.
- CECCHINATO L., CORRADI M., MINETTO S. (2010). A critical approach to the determination of optimal heat rejection pressure in transcritical systems, Applied Thermal Engineering 30:1812-1823.
- CECCHINATO L., CHIARELLO M., CORRADI M., FORNASIERI E., MINETTO S., STRINGARI P., ZILIO C. (2009). Thermodynamic analysis of different two-stage transcritical carbon dioxide cycles, International Journal of Refrigeration. 32 (2009), pp. 1058-1067.
- GIROTTO S., MINETTO S., NEKSÁ P. (2004). Commercial refrigeration systems using CO2 as the refrigerant, International Journal of Refrigeration 27 (7-2004) 720-726.
- CASSON V., CECCHINATO L., CORRADI M., FORNASIERI E., GIROTTO S., MINETTO S., ZAMBONI L., ZILIO C. (2003). Optimisation of the throttling system in a CO2 refrigerating machine, International Journal of Refrigeration. vol. 26, pp. 926-935.