Scientific Curriculum
Alessandro Manzardo

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Professional Position:	Assistant Professor (ICHI-02/B according to Ministerial Decree 639/2024)
Work Location:	Department of Civil, Environmental and Architectural Engineering (ICEA) Università degli Studi di Padova, via Marzolo 9, 35131 Padova

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Education

- 2014 **Ph.D. in Industrial Engineering**, specialization in Chemical Engineering of Materials and Energy, University of Padova - Department of Industrial Engineering. Thesis: “New model to achieve water saving as a competitive tool for industrial processes.”
- 2006 **State Examination** for Qualification as a Chemical Engineer, University of Padova.
- 2005 **Master’s Degree** in Management Engineering, University of Padova - Department of Techniques and Management of Industrial Systems. Experimental thesis conducted at Tetra Pak Italia: “Environmental excellence as a strategic lever and the Kyoto commitments: a project for reducing greenhouse gas emissions for the Tetra Pak Italia Group.”
- 1999 Scientific High School Diploma, Liceo Scientifico “Corradini” in Thiene (VI).

Work and Research Experience

- Starting from May 2025: **Associate Professor** at the University of Padova, scientific disciplinary sector ICHI-02/B, Industrial and Technological Chemistry
- Since May 2022: **Assistant Professor Level B** at the University of Padova, scientific disciplinary sector ICHI-02/B, Industrial and Technological Chemistry.
- February 2020 - May 2022: **Assistant Professor Level A** at the University of Padova, scientific disciplinary sector ICHI-02/B, Industrial and Technological Chemistry.
- February 2006 - February 2020: **Researcher** at the University of Padova, scientific disciplinary sector ICHI-02/B, Industrial and Technological Chemistry, including: 1 senior research grant at the University of Padova; 1 Ph.D. scholarship from the University of Padova; 5 research grants from the University of Padova; 1 research grant and 1 scholarship from the Veneto Region; 1 research grant funded by ACCREDIA; 7 scholarships funded by public and private companies.

Scientific Qualifications

- 2018 **National Scientific Qualification** for the role of Associate Professor in the Competitive Sector 09/D3 - Industrial Chemical Plants and Processes.
- 2018 **Scientific qualification for the University of Southern Denmark** as an Associate Professor at the Institute of Chemical Engineering, Biotechnology, and Environmental Technology.

Teaching Activities

Lecturer in charge of the following courses:
University of Padova

A.A.	Course	Degree Program	CFU[1]
Since 2020	Strategic Environmental Management	Master's Degree in Chemical and Process Engineering	6
Since 2022	Environmental Sustainability Metrics for Industry	Master's Degree in Environmental Engineering	6 (5)

[1]If only part of the course was taught, the actual credits delivered by the candidate are indicated in parentheses.

Director of a Master's Program

- Since 2024 - **Director of the Master's Program in Strategic Environmental Management**. Department of Civil, Construction, and Environmental Engineering, Academic Year 2024-2025

Additional Teaching Activities

A.A.	Course	Degree Program	CFU[1]
2021	Life Cycle Assessment for the eco-design of products and organizations	Doctoral School in Industrial Engineering	3
Planned but already designated for 2025	Life Cycle Assessment and Environmental Footprints	Ph.D. Program in Civil, Environmental and Architectural Engineering	3

[1]If only part of the course was taught, the actual credits delivered by the candidate are indicated in parentheses.

Supervision and Research Training

Advisor of 29 thesis projects, including 2 Bachelor's theses in Chemical and Materials Engineering, 10 Master's theses in Chemical and Industrial Process Engineering, 14 Master's theses in Environmental Engineering, and 3 Master's theses in Chemical and Process Engineering. Since 2020, supervisor of 4 Ph.D. research projects and co-supervisor of 4 additional Ph.D. research projects, totaling 36 person-months per research activity. Scientific coordinator of post-doctoral research grants, amounting to a total of 6 person-years, and of research grants and scholarships totaling 27 person-years.

Bibliometric Indicators (updated on 24/03/2025)

	Google Scholar	Scopus	Web of Science
Number of documents	159	80	67
H-index	29	28	26
Number of citations	3725	2586	2185

Research Interests

The candidate's scientific activity has primarily focused on the development of Life Cycle Assessment (LCA) methodology, aiming to enhance its accuracy and reduce uncertainty to better guide the design and development of new products and processes within an environmental sustainability framework. This research has been complemented by work in the field of environmental standards and certifications, actively participating in national (UNI) and international (ISO) standardization processes.

The research has specifically followed the following directions:

- Design and development of environmental sustainability metrics, with particular reference to environmental footprints, including Water Scarcity Footprint, featuring the publication of the AWARE method, which is now used in EU regulatory processes, as well as the Carbon Footprint of products and organizations (Organizational LCA);
- Development of decision-making models to resolve environmental trade-offs between alternative design choices (Decision Making Support). This research particularly focuses on the development of new low-impact products and processes;
- Integration of LCA methodology with Data Science tools, including digital models, artificial intelligence, and machine learning, specifically to simplify inventory data collection, thus improving accuracy and reducing uncertainty in estimating the potential environmental impacts of analyzed processes;
- Integration of LCA methodology with scenario analysis tools, such as System Dynamics, Consequential LCA, and Perspective LCA, to support decision-making under uncertainty regarding market evolution, socio-economic conditions, and production models;
- Integration of LCA metrics with circularity metrics (Circularity Footprint) and social sustainability metrics (Social LCA).

The research has been conducted through competitively funded projects and third-mission initiatives, with a particular focus on the following industrial sectors:

1) Chemical Processes
2) Energy
3) Food Supply Chains
4) Textile Industry
5) Waste Management for Resource Recovery

The research activity has resulted in the publication of 65 articles in peer-reviewed international journals, 19 proceedings from national conferences, 31 proceedings from international conferences, 9 chapters in international books, 1 chapter in a national book, and the editing of three books published by an international publisher.

A complete list of publications is attached at the end of this curriculum.

Regarding scientific activity, the candidate emphasizes a strong commitment to establishing national and international research collaborations, as well as conducting research with direct industrial applicability.
Furthermore, the candidate highlights having secured experimental research contracts with various highly qualified private and public institutions, totaling approximately €600,000 in funding, and having managed or currently managing, as a scientific coordinator, research projects with a total funding of approximately €550,000 (details of the projects are provided below).

Research Group Chair

Prof Manzardo hold the chair of the Centro Studi Qualità e Ambiente (CESQA) (https://www.cesqa.eu/cesqa/), a research laboratory within the Department of Civil, Construction, and Environmental Engineering at the University of Padova. The laboratory focuses on the development of new models for sustainability assessment and certification of industrial processes.

Responsibility for Research Projects Commissioned by Qualified Public and Private Institutions through the Establishment of Experimental Research Contracts

Client	Project	Year
FITT SpA	"Full made in Italy"	2020
Cromaplast SPA	ABS LOOP	2020
Italchimica Srl -Unismart	Sustainability of Cosmetic Products	2020
OVS SpA - Unismart	Development of a Life Cycle Assessment Model for Aterles Jeans	2020
OVS SpA - Unismart	Development of an Eco-Value Environmental Labeling System	2020
Eurofibre SpA	Training (Nov 2020)	2020
Certottica	Support for the Development of OPTIFORM	2021

Client	Project	Year
SDR Pack	Scientific Coordination of Training Plan	2021
Fitt SpA	Industrial Virtualization of Processes	2021
OVS SpA - Unismart	Organizational Carbon Footprint Update	2021
OVS SpA - Unismart	Update of the Ecovalore Model	2021
DG Eusair EU	Bringing the Green Deal to the Region	2021
Steelco - Unismart	Organizational Carbon Footprint	2022
Fitt SpA	TWIN FACTORY	2022
OVS SpA - Unismart	Eco Valore-LCA	2023
SIAE	Design and Development of a Sustainable Innovation Laboratory and a Strategic Carbon Footprint and Carbon Neutrality Management Model for SIAE	2023
Fashionart Srl - Unismart	22-R039_Fashionart_Environmental Impact Analysis	2023
Fitt SpA	FITT - Design and Development of a Systematic Approach to Carbon Footprint and Industrial Virtualization	2023
Steelco - Unismart	Carbon Footprint 2	2023
Fabbrica Alta Formazione	Go Circular	2023

Client	Project	Year
Eduformoa	“DEM” Project	2023
CO2 Resource	Critical Investigation on Potential Market Developments of CO_2 in Italy with a Focus on Biogenic CO_2	2023
Terre Srl	Comparative Environmental Footprint Assessment for the Expansion of the ALI Logistics Hub on Via Svezia in Padova	2023
Kering SpA - Unismart	Research Activity “23-R025 Kering Eco Valore”	2023
Fashionart Srl - Unismart	Environmental Sustainability Evaluation Tool	2024
Irinox SpA-Unismart	Research Activity “24-R008 IRINOX Organizational LCA”	2024
OVS SpA - Unismart	Research Activity “23-R043 OVS Organizational LCA”	2024
Eduforma	Methodological and Scientific Coordination of the Training Plan “ESC - Ecological Services Connected”	2024
Ecouero Srl	Product Life Cycle Assessment (LCA) Study to Evaluate the Potential Environmental Benefits Related to the Recovery and Reuse of Mechanical Components in the Automotive Sector	2024
Collins Srl	Product Life Cycle Assessment (LCA) Study to Evaluate the Potential Environmental Benefits Related to the Recovery and Reuse of Mechanical Components in the Automotive Sector	2024
Smact	LCA System for Irinox	2024

Principal Investigator of National and International Research Projects Funded Through

Competitive Calls with Peer Review

Project Title	Funding Type	Role	Year	Amount (euro)
Interreg V-A Italy-Slovenia ECOSMART – Market of Ecosystem Services for an Advanced Policy for the Protection of NATURA2K Areas	Interreg (European Territorial Cooperation Program)	Principale Investigator	2020	165.120,42
“PREPAR-AZIONE TRASFORMATIVA” – “Transformative Preparation”	FSE	Principale Investigator	2020	8.000,00
LCA Study of Flatbag Paper Bags	FSE	Principale Investigator	2020	10.000,00
FSE Project DGR 1463/19 COD.2105-0023-1463-2019 (DAFNAE)	FSE	Principale Investigator	2020	25.800,00
Interreg V-A Italy-Slovenia ECO2SMART Project – Promoting Active Citizen Awareness to Strengthen Resilience, Ecosystem-Based Adaptation, and Disaster Risk Prevention	Interreg (European Territorial Cooperation Program)	Principale Investigator	2023	99.999,64
Niuko for Notice 4-2022 Fondimpresa - GREENPOWER for the Leather District	FSE	Principale Investigator	2023	17.200,00
Interreg IPA-ADRION GPP2ADRION Project – Fostering the Adoption and Implementation of Green Public Procurement (GPP) Procedures to Promote a Transition Towards a Circular Economy	Interreg (European Territorial Cooperation Program)	Principale Investigator	2024	287.560,00

Seminars, Meetings, and Keynote Speeches at International Conferences by Invitation

- Joint ISIE SEM and Asia-Pacific Conference in Beijing, 24-27 August 2024. Round Table discussion Industry and Policy in action.
- Southern Denmark University (Denmark edizione 2018 e 2019): Summer School in Engineering for Sustainability, Institute of Chemical Engineering, Biotechnology and Environmental Technology: “Water Footprint of chemical processes”;
- Rochester Institute of Technology (Rochester-NY-USA, 2012-2013): Master’s degree course in Industrial Ecology at the Golisano Institute for Sustainability – “Water Footprint Management: Tools and Methods for Accounting and Impact Assessment”.
- Rochester Institute of Technology, (Rochester-NY-USA, 2012-2013): Bachelor’s degree course in Civil Engineering Technology at the Environmental Management and Safety Department – “Water Footprint Management: Tools and Methods for Accounting and Impact Assessment”.
- Metropolitan London University (London-UK, 2012): Master’s degree course in Corporate Social Responsibility: “Corporate Social Responsibility through Standards: Social and Environmental Dimensions.” (See Attached Teaching Certificate)
- Plastic Pollution and Bioplastic Materials International PhD Academy VIU Global Challenges Initiative, Venice International University (Venice, 2021): “Life Cycle Assessment and Footprinting for the sustainable management of plastics” (See Attached Course Brochure)
- Doctoral School in Sustainability Practice, Rochester Institute of Technology, (Rochester-NY-USA, 2013): “The imortance of Standards and ISO standardization process.”

Editorial Boards and Scientific Review and Evaluation Activities

Editorial Boards

2024 Early Career Editorial Board Member for Sustainable Horizons, Elsevier.

Participation in Scientific Committees and Conference Organization

2025 Member of the Scientific Committee of the 12th International Conference on Life Cycle Management (LCM 2025);

2025 Member of the Scientific Committee of the 12th International Conference on Industrial Ecology (ISIE 2025);

Since 2020 Member of the Scientific Committee of the Annual Conference organized by the Italian Life Cycle Assessment Network (Rete Italiana LCA).

Scientific Review Activities

Regularly appointed as a peer reviewer by the editors of several international scientific journals for the evaluation of submitted manuscripts, including:
- Science of the Total Environment
- Journal of Cleaner Production
- International Journal of Life Cycle Assessment
- Ecological Indicators
- Sustainable Horizons
- Sustainability
- Sustainable Production and Consumption
- Cleaner Environmental Systems

These journals primarily belong to Q1 ranking according to the Journal Citation Reports (JCR).

International Exchanges

Since 2023 Coordinator of the following Erasmus exchange program at the University of Padova: Stockholm University - Chemistry Section - 0531 Chemistry.

2013 and 2014 Visiting Scientist at the Rochester Institute of Technology, NY, USA.

Spin-offs, Patents, and Technology Transfer

July 2017 Became one of the founding members of Spin Life Srl, a spin-off of the University of Padova (www.spinlife.it).

Awards and Recognitions

2015 Medal of Honor, Hic Labor 2014 Award from the Accademia Olimpica di Vicenza (See attached document), with special recognition for the Ph.D. thesis: “New Model to Achieve Water Management as a Competitive Tool for Industrial Processes.”

2014 Winner of the YOUNG RESEARCHERS AWARD from the national scientific association Italian Life Cycle Assessment Network (Rete Italiana LCA) (See attached document A) for the research activity: “Water Footprint Indicators within Life Cycle Impact Assessment to Support the Concept and Design of a New Product.”

Other Appointments

- Since 2020 Italian National Standardization Body (UNI) – Chair of GL01, which interfaces with the ISO SC1 (Environmental Management Systems) working groups. Responsible for managing working groups, coordinating activities, and allocating dedicated resources (See attached document).
- 2016-2018 Food and Agriculture Organization (FAO) – LEAP Partnership – Technical expert in the Technical Advisory Group, responsible for developing specific methodologies for quantifying the Water Footprint in the livestock sector.
- 2015 United Nations Environment Programme (UNEP) – Life Cycle Initiative (LCI) – Footprinting – Appointed member of the UNEP working group to define a methodological framework for the development of all future footprint quantification models.
- 2014 European Innovation Partnership on Water (EIP) – Representative of the UNEP-WULCA group within the Water 4 Energy Framework process, contributing to the development of a shared methodology for assessing the sustainability of energy production in relation to the water sector.
- 2014-2016 United Nations Environment Programme (UNEP) – Water Use in Life Cycle Assessment (WULCA) – Technical expert in the UNEP-WULCA group for the development of new indicators for assessing the environmental impacts on water resources.
- 2012 United Nations Environment Programme (UNEP) – Life Cycle Initiative (LCI) - Organizational LCA (OLCA) – Technical expert in the UNEP-LCI group for the development of application guidelines for Organizational Life Cycle Assessment (O-LCA).
- Since 2010 International Organization for Standardization (ISO) – Head of the Italian delegation in SC3 (Environmental Labeling) and SC5 (Life Cycle Assessment) committees. National expert on product environmental management and communication of environmental performance. Contributed to drafting several international standards, including: ISO 14046:2014 (Water Footprint); ISO/TS

14072:2015 (Life Cycle Assessment at the Organizational Level); ISO 14001:2015 (Environmental Management Systems); ISO 14026:2017 (Environmental Labels and Declarations). And other standardization processes (See attached document).

- Since 2010 Italian National Standardization Body (UNI) – Chair of GL10, which interfaces with the ISO SC3 (Environmental Labeling) and SC5 (Life Cycle Assessment) working groups. Responsible for managing working groups, coordinating activities, and allocating dedicated resources (See attached document). Also a member of the UTC/04 Environmental Commission (See attached document).

International Collaborations

Reference	Institution	Period	Topic
Prof. Joseph Samec	University of South	2022 - until now	LCA of chemical process for the valorization of bio-based waste
Prof. Ren Jinzhang	Hong Kong University	2016 - until now	MCMDA for Sustainable decision making of chemical processes
Prof. Liu Gang	Peking University	2018 - until now	MCMDA for Sustainable decision making of chemical processes and Industrial Ecology
Prof. Guanghai Liu	Guangzhou University	2021 - until now	Impact assessment of cold supply chain and IOT
Prof. Xinfang Wang	University of Birmingham	2023 - until now	Avoidance of Food waste though neural networks and data science
Prof. Mathias Finkbeiner	TU Berlin	2014 - until now	Water Footprint in LCA, Organizational Life Cycle Assessment
Prof Markus Berger	University of Twente	2022 - until now	Water Footprint in LCA
Prof. Anne Marie Boulay	Politechnic Montreal	2011 - until now	Water Footprint in LCA, Microplastic metrcis

All the collaborations mentioned above have resulted in at least one article published in an international journal or currently under submission.

National Collaborations

Reference	Institution	Period	Topic
Prof. Jacopo Bacenetti	Università di Milano	2020 - until now	LCA of chemical process for the valorization of bio based waste
Prof. Monia Niero	Scuola Sant' Anna di Pisa	2016 - until now	MCMDA for Sustainable decision making of chemical processes

All the collaborations mentioned above have resulted in at least one article published in an international journal or currently under submission.

Service Activities at the University of Padova

- Since 2021 – Representative of the University of Padova on the Board of Directors of the Italian Life Cycle Assessment Network (Rete Italiana LCA).
- Since 2022 – Member of the Master's Degree Program Council in Environmental Engineering.
- Since 2020 – Member of the Doctoral School Council in Industrial Engineering.
- Since 2020 – Member of the Master's Degree Program Council in Chemical and Industrial Process Engineering (renamed in 2022 as International Master's Degree in Chemical and Process Engineering).
- 2020-2022 – Member of the Departmental Council of Industrial Engineering.
- Since 2020 – Member of numerous final examination committees for the Master's Degree in Chemical and Industrial Process Engineering (since 2022, International Master's Degree in Chemical and Process Engineering).
- Since 2022 – Member of numerous final examination committees for the Master's Degree in Environmental Engineering.
- Since 2019 – RUS - Network of Universities for Sustainable Development, Scientific Representative of the University of Padova in the Climate Change Working Group (GDL Cambiamenti Climatici).

List of Publications

Publications in Impact Factor Journals

1. Paladin G., Manzardo A., Nale A., Negro E., Di Noto V. A comparative life cycle assessment of Pt nanoalloy/carbon nitride/graphene electrocatalysts for PEMFC stacks (2025) Chemical Engineering Journal, 505, art. no. 159251
2. Yi Y., Fei X., Lavagnolo M.C., Manzardo A. An integrated model of life cycle assessment and system dynamics for construction and demolition waste management and reduction in Italy (2025) Journal of Cleaner Production, 486, art. no. 144469
3. Yi Y., Fei X., Fedele A., Lavagnolo M.C., Manzardo A. Decision support model for selecting construction and demolition waste management alternatives: A life cycle-based approach (2024) Science of the Total Environment, 951, art. no. 175408
4. Libom B.S., Traverso M., Mankaa R.N., Manzardo A. Development and Design Perspective of a Model for Analyzing the Social Life Cycle of Public Organizations: Examination of Existing Models (2024) Sustainability (Switzerland), 16 (16), art. no. 6925
5. Witthayolankowit K., Ramazanova L., Baddigam K.R., Marson A., Apostolopoulou-Kalkavoura V., Lebedeva D., Muangmeesri S., Wide M.I., Kubička D., Håkansson H., Mathew A.P., Manzardo A., Samec J.S.M. Valorization of Tops and Branches to Textile Fibers and Biofuel: Value Chain Explored Experimentally; Environmental Sustainability Evaluated by Life Cycle Assessment (2024) ACS Sustainable Chemistry and Engineering, 12 (1), pp. 526 - 533
6. Lebedeva D., Schick L.W., Cracco D., Sangsuwan W., Castiella-Ona G., Silva D.O., Marson A., Svensson Grape E., Inge A.K., Rossi L.M., Subbotina E., Manzardo A., Samec J.S.M. Sustainable aviation fuel from prehydrolysis liquors (2024) Green Chemistry, 26 (12), pp. 7258 - 7267
7. Yi Y., Liu J., Cristina Lavagnolo M., Manzardo A. Evaluating the carbon emission reduction in construction and demolition waste management in China (2024) Energy and Buildings, 324, art. no. 114932
8. Marson A., Zuliani F., Fedele A., Manzardo A. Life cycle assessment-based decision making under methodological uncertainty: A framework proposal (2024) Journal of Cleaner Production, 445, art. no. 141288
9. Piron M., Wu J., Fedele A., Manzardo A. Industry 4.0 and life cycle assessment: Evaluation of the technology applications as an asset for the life cycle inventory (2024) Science of the Total Environment, 916, art. no. 170263
10. Gallo F., Manzardo A., Camana D., Fedele A., Scipioni A. Integration of a circular economy metric with life cycle assessment: methodological proposal of compared agri-food products (2024) International Journal of Life Cycle Assessment, 29 (8), pp. 1359 - 1379
11. Marson A., Piron M., Zuliani F., Fedele A., Manzardo A. Comparative Life Cycle Assessment in the plastic sector: A systematic literature review (2023) Cleaner Environmental Systems, 9, art. no. 100119
12. Zuliani F., Manzardo A., Marson A., Fedele A. A life cycle assessment approach for nitrogen footprint quantification: the reactive nitrogen indicator (2023) Science of the Total Environment, 882, art. no. 163578
13. Zou Y., Wu J., Wang X., Morales K., Liu G., Manzardo A. An improved artificial neural network using multi-source data to estimate food temperature during multi-temperature delivery (2023) Journal of Food Engineering, 351, art. no. 111518
14. Pivato A., Varghese G., Di Maria F., Manzardo A., Lega M., Lavagnolo M.C., Pettersson M., Gwinnett C. Risk analysis and life cycle assessment in environmental forensics: practical instructions for their use (2023) Detritus, 23, pp. I - VI
15. Yi Y., Wu J., Zuliani F., Lavagnolo M.C., Manzardo A. Integration of life cycle assessment and system dynamics modeling for environmental scenario analysis: A systematic review (2023) Science of the Total Environment, 903, art. no. 166545

16. Vasquez-Mejia C.M., Shrivastava S., Gudjónsdóttir M., Manzardo A., Ögmundarson Ó. Current status and future research needs on the quantitative water use of finfish aquaculture using Life Cycle Assessment: A systematic literature review (2023) Journal of Cleaner Production, 425, art. no. 139009
17. Marson A., Samec J.S.M., Manzardo A. Consequential life cycle assessment of kraft lignin recovery with chemical recycling (2023) Science of the Total Environment, 882, art. no. 163660
18. Witthayolankowit K., Marson A., Baddigam K.R., Lebedeva D., Shaikh M., Kane A., Gupta D., Wide M.I., Mathew A.P., Kubička D., Manzardo A., Samec J.S.M. Valorization of beetle infected spruce to produce textile fibers and biofuels: Environmental sustainability evaluated by life cycle assessment (2023) Chemical Engineering Journal, 470, art. no. 144179
19. Liu G., Li Q., Wu J., Xie R., Zou Y., Marson A., Scipioni A., Manzardo A. Improving system performance of the refrigeration unit using phase change material (PCM) for transport refrigerated vehicles: An experimental investigation in South China (2022) Journal of Energy Storage, 51, art. no. 104435
20. Zou Y., Wu J., Liu G., Piron M., Fedele A., Antonio S., Manzardo A. Examining the trade-offs in potential retail benefits of different expiration date modes: Insights into multidimensional scenarios (2022) Resources, Conservation and Recycling, 186, art. no. 106511
21. Pfister S., Scherer L., Boulay A.-M., Motoshita M., Núñez M., Damiani M., Manzardo A., Huang J., Link A., Bunsen J., Berger M. Letter to the editor re: “The scarcity-weighted water footprint provides unreliable water sustainability scoring” by Vanham and Mekonnen, 2021 (2022) Science of the Total Environment, 825, art. no. 154108
22. Wu J., Liu G., Marson A., Fedele A., Scipioni A., Manzardo A. Mitigating environmental burden of the refrigerated transportation sector: Carbon footprint comparisons of commonly used refrigeration systems and alternative cold storage systems (2022) Journal of Cleaner Production, 372, art. no. 133514
23. Wu J., Li Q., Liu G., Xie R., Zou Y., Scipioni A., Manzardo A. Evaluating the impact of refrigerated transport trucks in China on climate change from the life cycle perspective (2022) Environmental Impact Assessment Review, 97, art. no. 106866
24. Manzardo A., Camana D., Fedele A., Gallo F. Assessing environmental sustainability of projects with different tools. A life cycle perspective (2022) Detritus, 21, pp. 85 - 93
25. Ayub Y., Tao S., Ren J., Lee C.K.M., He C., Manzardo A. Poultry litter valorization by application of hydrothermal gasification: Process simulation, Economic, Energic, and Environmental analysis (2022) International Journal of Energy Research, 46 (15), pp. 23095 - 23109
26. Barausse A., Meulenberg C., Occhipinti I., Abordi M., Endrizzi L., Guadagnin G., Piron M., Visintin F., Vižintin L., Manzardo A. A Methodological Proposal for the Climate Change Risk Assessment of Coastal Habitats Based on the Evaluation of Ecosystem Services: Lessons Learnt from the INTERREG Project ECO-SMART (2022) Sustainability (Switzerland), 14 (13), art. no. 7567
27. Boulay A.-M., Drastig K., Amanullah, Chapagain A., Charlon V., Civit B., DeCamillis C., De Souza M., Hess T., Hoekstra A.Y., Ibidhi R., Lathuillière M.J., Manzardo A., McAllister T., Morales R.A., Motoshita M., Palhares J.C.P., Pirlo G., Ridoutt B., Russo V., Salmoral G., Singh R., Vanham D., Wiedemann S., Zheng W., Pfister S. Building consensus on water use assessment of livestock production systems and supply chains: Outcome and recommendations from the FAO LEAP Partnership (2021) Ecological Indicators, 124, art. no. 107391
28. Marson A., Masiero M., Modesti M., Scipioni A., Manzardo A. Life Cycle Assessment of Polyurethane Foams from Polyols Obtained through Chemical Recycling (2021) ACS Omega, 6 (2), pp. 1718 - 1724
29. Manzardo A., Marson A., Zuliani F., Bacenetti J., Scipioni A. Combination of product environmental footprint method and eco-design process according to ISO 14006: The case of an Italian vinery (2021) Science of the Total Environment, 799, art. no. 149507
30. Camana D., Toniolo S., Manzardo A., Piron M., Scipioni A. Life cycle assessment applied to waste management in Italy: A mini-review of characteristics and methodological perspectives for local assessment (2021) Waste Management and Research, 39 (8), pp. 1007 - 1026

31. Camana D., Manzardo A., Toniolo S., Gallo F., Scipioni A. Assessing environmental sustainability of local waste management policies in Italy from a circular economy perspective. An overview of existing tools (2021) Sustainable Production and Consumption, 27, pp. 613 - 629
32. Costantini M., Vázquez-Rowe I., Manzardo A., Bacenetti J. Environmental impact assessment of beef cattle production in semi-intensive systems in Paraguay (2021) Sustainable Production and Consumption, 27, pp. 269 - 281
33. Marson A., Manzardo A., Piron M., Fedele A., Scipioni A. Life cycle assessment of PVC - A polymer alloy pipes for the impacts reduction in the construction sector (2021) Chemical Engineering Transactions, 86, pp. 721 – 726
34. Conti C., Costantini M., Fusi A., Manzardo A., Guarino M., Bacenetti J. Environmental impact of pig production affected by wet acid scrubber as mitigation technology (2021) Sustainable Production and Consumption, 28, pp. 580 - 590
35. Ren J., Ren X., Shen W., Man Y., Lin R., Liu Y., He C., Manzardo A., Toniolo S., Dong L. Industrial system prioritization using the sustainability-interval-index conceptual framework with life-cycle considerations (2020) AIChE Journal, 66 (6), art. no. e16961
36. Koffler C., Amor B., Carbajales-Dale M., Cascio J., Conroy A., Fava J.A., Gaudreault C., Gloria T., Hensler C., Horvath A., Humbert S., Manzardo A., Margni M., Osset P., Sinistore J., Vigon B., Wallace M.L., Wang M., Prox M. On the reporting and review requirements of ISO 14044 (2020) International Journal of Life Cycle Assessment, 25 (3), pp. 478 - 482
37. Manzardo A., Marson A., Roso M., Boaretti C., Modesti M., Scipioni A., Lorenzetti A. Life Cycle Assessment Framework to Support the Design of Biobased Rigid Polyurethane Foams (2019) ACS Omega, 4 (9), pp. 14114 – 14123
38. Boulay A.-M., Lenoir L., Manzardo A. Bridging the data gap in the water scarcity footprint by using crop-specific AWARE factors (2019) Water (Switzerland), 11 (12), art. no. 2634
39. Xu D., Lv L., Dong L., Ren J., He C., Manzardo A. Sustainability Assessment Framework for Chemical Processes Selection under Uncertainties: A Vector-Based Algorithm Coupled with Multicriteria Decision-Making Approaches (2018) Industrial and Engineering Chemistry Research, 57 (23), pp. 7999 – 8010
40. Manzardo A., Loss A., Jingzheng R., Zuliani F., Scipioni A. Definition and application of activity portfolio and control/influence approaches in organizational life cycle assessment (2018) Journal of Cleaner Production, 184, pp. 264 – 273
41. Ren J., Ren X., Dong L., Manzardo A., He C., Pan M. Multiactor multicriteria decision making for life cycle sustainability assessment under uncertainties (2018) AIChE Journal, 64 (6), pp. 2103 - 2112
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The undersigned, Alessandro Manzardo, pursuant to Articles 2 and 4 of Law 15/68 and subsequent amendments, declares that the information provided in these pages, as well as in the attached curriculum vitae, is true and accurate.

Padova, March 24 2025