

Adriana Del Borghi

Associate professor

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Education and training

2001

PhD (Dottorato di Ricerca) on Technologies and Economics of Processes and Products for Environmental Protection

Biological treatment of urban landfill leachate technical feasibility kinetic study and plant design

University of Catania - Catania - IT

1997

Degree in chemical engineering second bachelors degree (Laurea in Ingegneria Chimica)

Hydrolysis and thermophilic anaerobic digestion of sewage sludge and organic fraction of municipal solid waste - 110/100 with honours and publish

University of Genoa - Genova - IT

Academic experience

2017 - ONGOING

Director of CESISP (Centre for the development of Products Sustainability)

Interuniversity Centre CESISP <http://cesisp.unige.it> - Genova - IT
Direction

2014 - ONGOING

ASSOCIATE PROFESSOR

University of Genoa - DICCA - Genova - IT

Life Cycle Assessment Ecodesign Climate Change Circular Economy Carbon Capture and Storage

2002 - 2013

ASSISTANT PROFESSOR

University of Genoa - DICCA - Genova - IT

Life Cycle Assessment Ecodesign Climate Change Circular Economy Carbon Capture and Storage

1999 - 2001

Post-Doc Research Grant

University of Genoa - DCCI - Genova - IT

Membrane processes in Agro-food industry

Work experience

2014 - 2017

Member of the board of directors of the Azienda Multiservizi di Igiene Urbana S.p.A.

AMIU S.p.A. - Genova - IT

Managing

2016 - 2017

Member of the board of directors of the Azienda Multiservizi ATA S.p.A. (Savona Italy)

ATA S.p.A. (Savona Italy) - Savona - IT

Managing

Teaching activity

- Professor of “Theory of Chemical Process Development” master's degree courses in Chemical Engineering since academic year 2017/2018 and of “Life Cycle Assessment and Ecodesign”, master's degree courses in Environmental Engineering since academic year 2018/2019, University of Genoa.
- Professor of “Theory of Sustainable Process Development” degree course in Chemical Engineering, University of Genoa, since academic year 2013/2014. The module 'Climate Changes' within the above mentioned course has been accredited by KHC (khc.it) for the achievement of the 'GHG Manager Junior' certificate till 2014.
- Professor of “Sustainable design tools I” degree course in Chemical Engineering, University of Genoa (since academic year 2005/2006 to 2012/2013).
- 2011/2012. Professor of “Climate Change and ETS Directive”, PhD course in Chemical, Material and Process Engineering.
- Professor of “Informatics applied to Chemical Engineering I” . Degree course in Chemical Engineering, University of Genoa (since academic year 2001/2002 to 2004/2005).
- Seminars and Courses within master's degrees (I and II level), summer schools for PhD students in Chemical Engineering, degree courses in Chemical, Electric and Mechanic Engineering on Life Cycle Analysis (LCA), Environmental Product Declaration (EPD), ISO 14001 standard and EMAS, since 2001.
- Course for company employees and certification bodies about LCA, EPD, Emission Trading since 2003.

Postgraduate research and teaching activity

Supervision of PhD students, residents and post-doctoral fellows

1. Director of the Interuniversity Centre for the development of Products Sustainability (CESISP). Since 2017 (member of the Scientific Council since 2006) <http://cesisp.unige.it>
2. University of Genoa representative for the Research Centre HIGH TECH RECYCLING (Development of innovative eco-compatible technologies for urban, industrial, medical and harbour waste recover and valorisation) Scientific Committee. Since 2007.
3. University of Genoa delegate for the International climate negotiations at the following COP (United Nations Climate Change Conference): COP15– Copenhagen, December 2009, COP21-Parigi, December 2015, COP 23-Bonn, December 2017 and to the UN Climate Change Conference June 2011- Bonn. Since 2009.
4. Member of MIUR (Ministry for Education University and Research) reviewer register. Since 2012.
5. Delegate of DICCA (ex DICheP) for the ITALIAN TECHNOLOGICAL ALLIANCE – SUSTAINABLE WASTE MANAGEMENT. Since 2012.
6. Member of the Working Group for the energy saving – University of Genoa. Since 2014 (Chancellor's Decree prot.n.24682 del 05/11/2014).
7. Member of the Working Group of the Scientific Committee for Genova Smart City Association – University of Genoa. Since 2014
8. Chancellor's Delegate of the University of Genoa for Environmental Sustainability for the University of Genoa for the Italian Rectors' Conference (CRUI) and Representative for the Environmental Sustainability for the University of Genoa. Since 2014.
9. Coordinator of the University Commission on Environmental Sustainability (Dean's note Prot. n. 81661, 7/12/2015). Since 2015.
10. Chemical Engineering Master's degree Delegate for careers counseling. Since 2017.
11. President and member in several commissions of selective procedures and degree, PhD examinations in Chemical Engineering and Architecture and Design.

PhD committees membership

1. Member of the Teachers College Ph.D. degrees XXIX Cycle “Theories and strategies for the design” University of Genova. Since 2013.

Research interests

- Life Cycle Assessment and Ecodesign: chemical and biotechnological processes; waste management: landfill, composting, incineration, electrical and electrotechnical production, WEEE; polymer and plastic insulating materials for electric purpose production; building materials (cement, steel); glass yarns; fuel cells (SOFC); food

products; fine chemicals; production and regeneration of industrial greases, oils and lubricants; biological treatment of gaseous emissions (CO₂, NO_x, VOC). LCIA (ecotoxicity)

- Emission Trading and Climate Change: GHG calculation and monitoring (EU-ETS); realisation of CDM Projects (Clean Development Mechanism); carbon management and trading; product carbon footprint quantification and offsetting; CCS (Carbon Capture and Storage), carbon accounting and offset of big events and organizations (EXPO Milano 2015; University of Genova – Agreement between the University of Genova and the Italian Ministry of Environment).
- Environmental Engineering: treatment of landfill leachate; wastewater treatment (chemical, biological and physical); bioremediation of soil; waste treatment and management; atmospheric pollution modelling; emission treatment technologies (biofiltration technology); uptake of CO₂ by *Spirulina platensis*.
- IPP (Integrated Product Policy): CAM (Minimum Environmental Criteria), GPP (Green Public Procurement); IPPC (Integrated Pollution Prevention and Control) and BAT (Best Available Techniques): galvanic sector and landfill.
- Circular Economy: development of circular economy projects and management of the Liguria Circular Forum
- Sustainability: SROI (Sustainable Return on Investment), RIA (Regulatory Impact Assessment) (Emirates Authority for Standardization & Metrology, ESMA), Abu Dhabi, UAE.

Editorial activity

1. Member of the editorial board of The International Journal of Life Cycle Assessment as subject editor. Since 2012. [springer.com/environment/journal/11367?detailsPage=editorialBoard](https://www.springer.com/environment/journal/11367?detailsPage=editorialBoard)
2. Member of the of the editorial board of the Special Issue of the international journal 'Journal of Engineering' (Guest Editor 'Life Cycle Assessment Approach Applied to Circular Economy') Hindawi Publishing Corporation (<https://www.hindawi.com/journals/je/si/235482/cfp/>). 2016-2017
3. Reviewer for the following Elsevier journals: Journal of Cleaner Production, Energy, Bioresource Technology, Journal of Environmental Management, Chemical Engineering and Processing: Process Intensification

Assigments abroad

1. Visiting professor (Fellowship) by the Technical University of Eindhoven (The Netherland).
2. Visiting professor (Scholar) by the Florida International University (FIU), Miami, USA. 2017-2018

Other professional activities

- **SPIN OFF**

- CEO and Co-founder of TETIS Institute S.R.L. - TEchniques for The Impact on Sustainability, University of Genova Spin Off, since 2018 www.tetisinstitute.org

- **SCIENTIFIC BUSINESS SUPPORT**

- Life Cycle Assessment and carbon footprint: integrated waste management system (PROVINCIA DI SAVONA - ITALIA); wastewater treatment plant (CONSORZIO PER LA DEPURAZIONE DELLE ACQUE DI SCARICO DI SAVONA); cement production (AITEC); biomass power plant (BEG BIO ENERGIA GUARCINO); logistic service applied to meal delivering in catering (SOTRAL SpA); treatment and distribution of drinking water (SICILIACQUE SpA); vegetal oil production (A&A FRATELLI PARODI S.p.A.); car-fluff treatment (IRLE Srl); integrated CCS project (Carbon Capture & Storage) (ENI SpA); 'Valfrutta' products; accounting of the Water Footprint, Ecological Footprint and Carbon Footprint of vegetal products, EPD Process implementation (Conserve Italia – Soc. coop. agricola); hydromethane production – METISOL Project (FN S.p.A. Nuove Tecnologie e Servizi Avanzati); natural stones (Società Internazionale Marmi e Macchine Carrara Spa - IMM); biodiesel from vegetal oil residues (PFP Biofuels Srl); fine chemicals (Vevy Europe Srl); MOCA Production, Food Contact Material (Milan Center for Food Law And Policy-Federlegno)
- Type III Labels (EPD, Environmental Product Declaration – ISO 14025): EPD realisation for several companies and PCR (Product Category Rules) development for several sectors: waste handling, wastewater treatment, building materials, glass yarn, logistic service, agri-food (see environdec.com). Sector EPD and PCR for cement products, in cooperation with AITEC.
- Climate Change: Scientific Manager for the “NO EFFETTO SERRA” joint project with Eco-Way srl concerning: CO₂ calculation and monitoring according to EU-ETS; afforestation and reforestation; CO₂ calculation for the assignment of certification labels to products and services; Voluntary market for CO₂ reduction: realization of VER rules and standards (RINA SpA; Regione Lazio – Eco-Way Srl; Unioncamere – Golder Ass; Rete CARTESIO). Manager of the VER (Verified Emission Reduction) Registry eCO₂care (ECO₂Carbon Account Registry) (eco2care.org). Validation and verification of CO₂ emissions calculation software (Province of Trento, Municipality of Bologna). Carbon Capture and Storage (CCS) in the refining sector (ERG POWER & GAS SpA).
- EIA: advice activity for the technical-scientific coordination of the environmental impact study regarding the road and

- motorway junction of Genova (SPEA INGEGNERIA EUROPEA S.P.A., GRUPPO AUTOSTRADE PER L'ITALIA)
- Energy certification of school buildings (PROVINCE OF LA SPEZIA - Progetto Ambiente Futuro)
 - Circular Economy: scientific coordination of the Forum LiguriaCircular (AMIU SpA); PiTER on board Project: Technological Platform for thermal conversion energetic to high efficiency of waste - Subcontractor C.N.R. 2017-2018.