

**EUROPEAN
CURRICULUM VITAE
FORMAT**



PERSONAL INFORMATION

Name	Mirco Garuti
Address	[REDACTED]
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	[REDACTED]
	[REDACTED]

WORK EXPERIENCE

Dates	March 2023 – today
Name, address of the employer	Consorzio Italiano Biogas
Occupation or position held	Member of Board
Dates	April 2013 – today
Name, address of the employer	Centro Ricerche Produzioni Animali - C.R.P.A. Soc.Cons. p.A.
Type of business or sector	Environment and Energy
Occupation or position held	Researcher
Main activities and responsibilities	Since 2024 head of Environment and Energy department of CRPA. Since 2020 coordinator of the “Energy” operational unit in the Environment and Energy sector of CRPA. Biogas plants optimization, project-management of applied research projects, monitoring of anaerobic processes, biomass and digestate pre-treatment, feasibility studies for biomethane production scientific articles and technical reports. Technologies monitoring and validation (full/lab scale), biomethanation tests and chemical analysis in laboratory.
Dates	January 2013 – March 2013
Name, address of the employer	Innovatec s.r.l.
Type of business or sector	Anaerobic digestion plant project and management
Occupation or position held	Process Specialist
Main activities and responsibilities	Biological support and process optimization
Dates	March 2011 – January 2013
Name, address of the employer	Archea Italia s.r.l.
Type of business or sector	Anaerobic digestion plant project and management
Occupation or position held	Process Specialist
Main activities and responsibilities	Biological support and process optimization
Dates	July 2009 – February 2011
Name, address of the employer	IBEROFAR s.r.l. (Via Besana, 5 - 20122 Milano). Experimental activity at Dipartimento di Biotecnologie e Scienze Molecolari dell'Università degli Studi di Varese (Via J.H. Dunant, 3 - 21100 Varese) Type of business or sector Pharmaceutical
Occupation or position held	Researcher
Main activities and responsibilities	Organization and management of a research project concerning the genetic and fermentation improvement of antibiotic-producing microorganisms, experimental tests in the laboratory, assistance in university teaching activities

EDUCATION AND TRAINING

Dates	2018-2022
Title of qualification awarded	PhD – Biotechnology, Engineering and Chemical Technology
Principal subjects/occupational skills covered	Biotechnology, Environmental Science, anaerobic digestion

According to law 679/2016 of the Regulation of the European Parliament of 27th April 2016, I hereby express my consent to process and use my data provided in this CV

Name and type of organisation providing education and training Universidad Pablo de Olavide (Seville)

Dates 2017-2018

Title of qualification awarded M.Phil "Bioeconomy in the Circular Economy (BIOCIRCE)"

Principal subjects/occupational skills and covered Industrial biotechnologies, enzymatic catalysis, fundamentals of economics
finance, scouting of innovative projects,
environmental sustainability,

biorefineries, bio-based products and biotechnological processes.

Name and type of organisation Milano Bicocca University in joint form, pursuant to Article 3, c.10 of Ministerial providing education and training Decree 270/04, with the University of Naples Federico II, the University of Turin and the University of Bologna.

Dates 2006-2009

Title of qualification awarded M.Sc Industrial and Molecular Biotechnology

Principal subjects/occupational skills Industrial biochemistry, biocatalysis, protein engineering, applied microbiology, covered biotechnological products and processes, biochemical reactors, molecular biology.

Name and type of organisation Alma Mater Studiorum – Università di Bologna providing education and training

Dates 2003-2006

Title of qualification awarded B.Sc Biotechnology

Principal subjects/occupational skills Biocatalysis and industrial biochemistry, fermentation biotechnology, molecular covered biology of yeast and transgenic plants, physical and plant chemistry. Name and type of organisation Alma Mater Studiorum – Università di Bologna providing education and training

MOTHER TONGUE Italian

OTHER English (B2)

SCIENTIFIC SKILLS - Strong expertise of design and running agricultural and wastes anaerobic AND COMPETENCES digestion plants: feedstock availability studies, pre-treatment equipment, digester technology (wet, semi-dry, dry fermentation), process optimization, nutrient recovery from digestate, biogas upgrading

- Process design and validation (full/pilot scale): feedstock characterization and formulation, dark fermentation, Power-to-Gas, biogenic CO₂ valorization.
- Consulting and training in the field of biogas/biomethane technology
- International activities and experience in European Biogas networks
- Research Interest: anaerobic digestion, feedstock pretreatment, trace metals, biomethane, bioeconomy
- author and co-author of about 60 publications among scientific articles, technical reports, book chapters and conference papers (national and international level).
- Lecturer at Insubria University (Italy)
- Co-supervisor of B.Sc and M. Sc theses (Insubria University, Italy)

RELEVANT ROLES - Head of Environment and Energy sector of CRPA (2024-today)

- Coordinator of the "Energy" operational unit in the Environment and Energy sector of CRPA (2020-2024)
- Member of Board at CIB – Consorzio Italiano Biogas (2023-today)
- Member of BIP – Biomethane Industrial Partnership (2023-today)
- Participation at ES1302 - European Network on Ecological Functions of Trace Metals in Anaerobic Biotechnologies (2013-2017)

TRAINING - Training meeting on anti-corruption and transparency (total 1,5 hours). 19/12/2023 (Docenti avv. Glenda Prandi e avv. Elisa Nobile - Studio Legale Guiducci)

- Update form for workers on quality system ISO 9001:2015 and privacy (total 1,5 hours). 19/12/2023 (Docente ing. Alberto Sant'Unione – Studio Violi S.r.l.)
- Training meeting on anti-corruption and transparency (total 2 hours). 28/11/2022 (Docenti avv. Glenda Prandi e avv. Elisa Nobile - Studio Legale Guiducci)
- Update form for workers on quality system ISO 9001:2015 and privacy (total 2 hours). 28/11/2022 (Docente ing. Alberto Sant'Unione – Studio Violi S.r.l.)
- Training meeting on anti-corruption and transparency (total 2 hours). 20/12/2021 (Docenti avv. Glenda Prandi e avv. Elisa Nobile - Studio Legale Guiducci)
- Update form for workers on safety and health at work. Ref. Training project 'Updating specific training for workers on safety and health at work.' Prepared pursuant to Articles 2 and 4 of Annex A of the State-Regions Agreement of 21/12/11 and sent to the Joint Body (total 6 hours). 03/02/2021 (Docente ing. Alberto Sant'Unione – Studio Violi S.r.l. e 08/02/2021(Docente della seconda giornata dr. Nicola D'Adamo – RS Italia)
- "UNI ENI ISO 9001:2015 Adeguamento del sistema di gestione per la qualità" (Reggio Emilia, 23 Gennaio 2018)
- "Corso di Reologia" presso AlfatestLab (Milano, 05 Maggio 2015).

- “Sicurezza e impianti a biogas”. (Politecnico di Milano - Polo di Cremona, 07 Aprile 2014).

- biomasse agricole" (Milano, 8-9 Maggio 2013)
- "UK Intensive biogas operators Course" (St Ives, Cambridgeshire – England, 27-28 Giugno 2012)
- Summer School "Microbial Metabolites: Signals to Drugs" (Dubrovnik - Croazia, 21-29 Agosto 2010)
- Convegno annuale della sezione Ligure – Lombardo – Piemontese della Società Italiana di Biochimica e Biologia Molecolare (Varese, 28 Maggio 2010)
- "Statistica biomedica e software R" (Bologna, 8-9 Febbraio 2010)
- "Static and Dynamic light scattering" per la caratterizzazione delle macromolecole in soluzione (Milano, 10 luglio 2009)
- 3° congresso Nazionale dei Giovani Biotecnologi (Siena, 6-7 marzo 2009)
- "Formazione e sviluppo di carriera: biotecnologi fra mercato globale e tessuto locale" (Siena, 5 marzo 2008)

PUBLICATION INDEXES (SCOPUS) - NUMBER OF SCIENTIFIC PUBLICATIONS: 10

- TOTAL NUMBER OF CITATIONS: 186
- H-INDEX: 6
- Link to SCOPUS/Orcid/researcher ID:
<https://www.scopus.com/authid/detail.uri?authorId=57190380292>

SCIENTIFIC PUBLICATIONS

1. E. Fanfoni, E. Sinisgalli, A. Fontana, M. Soldano, M. Garuti, L. Morelli. **(Short List) Microbial Characterisation of a Two-Stage Anaerobic Digestion Process for Conversion of Agri-Based Feedstock in Biogas and LongChain Fatty Acids in a Circular Economy Framework.** *Fermentation* 2024, 10(6), 293. DOI: 10.3390/fermentation10060293
2. E. Sinisgalli, M. Garuti, M. Soldano, S. Piccinini. **Digestate from biowaste: stability evaluation of new fertilizing materials.** *European Biomass Conference and Exhibition Proceedings*, 2023, pp. 97–100.
3. M. Garuti, E. Sinisgalli, M. Soldano, A. J. Rodriguez, F.G. Feroso. **Biochemical conditions for anaerobic digestion of agricultural feedstocks: A full-scale study linking elements concentration and residual methane potential.** *Biomass and Bioenergy* 176:106899. DOI: 10.1016/j.biombioe.2023.106899
4. Garuti, M., Soldano, M., Mazzola, L., Feroso, F.G., Rodriguez, A.J., Immovilli, A., Dal Prà, A. (2022), **Evaluation of triticale anaerobic digestion in a double cropping system: Relation between biomass yield, chemical composition, and biomethane production.** *Biofuels, Bioprod. Bioref.* doi: 10.1002/bbb.2393
5. M. Garuti, E. Sinisgalli, M. Soldano, F. G. Feroso, A. Jimenez Rodriguez, M. Carnevale, F. Gallucci. **Mechanical pretreatments of different agribased feedstock in full-scale biogas plants under real operational conditions.** *Biomass and Bioenergy, Volume 158, 2022, 106352.*
6. Garuti, M., Mantovi, P., Soldano, M., Immovilli, A., Ruozzi, F., Feroso, F.G., Rodriguez, A.J. and Fabbri, C. (2020), **Towards sustainable energy-crop cultivation: feasibility of biomethane production using a double-cropping system with various sorghum phenotypes.** *Biofuels, Bioprod. Bioref.* doi:10.1002/bbb.2099
7. M. Garuti, M. Langone, C. Fabbri, S. Piccinini. **Methodological approach for trace elements supplementation in anaerobic digestion: Experience from full-scale agricultural biogas plants.** *Journal of Environmental Management* 223:348-357.
8. M. Garuti, M. Langone, C. Fabbri, S. Piccinini. **Monitoring of full-scale hydrodynamic cavitation pretreatment in agricultural biogas plant.** *Bioresource Technology* 247: 599-609 (2018).
9. Eric D. van Hullebusch, Gilles Guibaud, Stéphane Simon, Markus Lenz, Sepehr Shakeri Yekta, Fernando G. Feroso, Rohan Jain, Lars Duester, Jimmy Roussel, Emmanuel Guillon, Ulf Skjellberg, C. Marisa R. Almeida, Yoan Pechaud, Mirco Garuti, Luigi Frunzo, Giovanni Esposito, Cynthia Carliell-Marquet, Markus Ortner & Gavin Collins. **Methodological approaches for fractionation and speciation to estimate trace element bioavailability in**

engineered anaerobic digestion ecosystems: an overview. Environmental science and technology 1-65 (2016)

10. Fontana A., Patrone V., Puglisi E., Morelli L., Bassi D., Garuti M., Rossi L., Cappa F. **Effects of geographic area, feedstock, temperature, and operating time on microbial communities of six full-scale biogas plants.** Bioresource Technology 218: 980-990 (2016).

PATENTS M. Soldo, M. Garuti, C. Fabbri. Processo di metanazione biologica di substrati gassosi tramite cavitazione idrodinamica (2018). IT201800008168A1

ASSOCIATION March 2023 –

today. Board Member of CIB – Consorzio Italiano Biogas
March 2023 – today. Member of BIP – Biomethane Industrial
Partnership

DRIVING LICENCE B

San Pietro in Casale (BO), 23 / 11 / 2024

