

**PERSONAL INFORMATION** Giulia Massini

📍 ENEA  
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🌐 \_Researchgate: <https://www.researchgate.net/profile/Massini-Giulia>

*Italian* —

Enterprise	University	EPR
<input type="checkbox"/> Management Level	<input type="checkbox"/> Full professor	X Research Director and 1st level Technologist / First Researcher and 2nd level Technologist / Principal Investigator
<input type="checkbox"/> Mid-Management Level	X Associate Professor	<input checked="" type="checkbox"/> Level III Researcher and Technologist
<input type="checkbox"/> Employee / worker level	<input type="checkbox"/> Researcher and Technologist of IV, V, VI and VII level / Technical collaborator	<input type="checkbox"/> Researcher and Technologist of IV, V, VI and VII level / Technical collaborator

**WORK EXPERIENCE**

2024 – present

**First Researcher**

ENEA-Casaccia, via Anguillarese 301, 00123 Rome, Italy

- Microbial ecology, Ecology, Bioenergy, Microbial Biotechnology, Microbial community, BioWastevalorisation, Hydrogen, Biogas, Fermentation, Anaerobic Digestion, Research

November 2006–December 2023

**Permanent Researcher**

ENEA – Casaccia Research Centre – Rome, Italy

- Microbial ecology, Ecology, Bioenergy, Microbial Biotechnology, Microbial community, BioWastevalorisation, Hydrogen, Biogas, Fermentation, Anaerobic Digestion, Research

October 2001 – November 2006

**Researcher**

ENEA – Casaccia Research Centre – Rome, Italy

- ✦ Biodiversity, Road Ecology, Convention on Biological Diversity Research

January 2001- June 2001

**ENEA INN BIOAG (Prot. 4165BIOAG)**

Reforestation and protection of biodiversity, environmental and landscape requalification and agroforestry rehabilitation Research

July 1999- October 1999

**ENEA-ANVAS (AMB-AMM-CON-7493)**

Sustainable development of the Gravine area (Southern Italy, Objective 1 region) Research

June 1994– February 1995

**ENEA BIOAG 58/117/87 prot 6509/267 and 58/63/87 prot 2828**

Environmental study for management purposes in a coastal lagoon affected by fish farming in floating cages- II part Research

June 1992– February 1993

**ENEA – AMB MON ECOS (92-58-CC4-C4)**

Biogeochemistry - ENEA\_Consorzio Venezia Nuova  
Determination of the phosphorus content in the sediments of a critical area of the Adriatic Sea, bibliographic survey on alkaline phosphatase activity (APA), development of detection and quantification methods, statistical processing of the acquired data, graphic processing of the results". Research

August 1987- July 1988

**ENEA PAS 27154**

Consequences of water level changes on organic matter decomposition processes and trophic structures of lake sediments

## PROJECT RESPONSIBILITIES (Last 10 years)

- 2022 – Present ENEA Scientific Responsible for the execution of the joint cooperation agreement ENI-ENEA Project 2, BIOMASSES, Sub Project 1 aimed at the energetic valorisation of waste biomass from hypertrophic marine and brackish environments
- 2021-Present ENEA Scientific Responsible for the Value Contract from NUCLECO S.p.A. - Society for Nuclear Ecoengineering - for the assignment to TERIN-BBC-PBE of Microbiology Services on contaminated and non-contaminated specimens made of concrete and/or innovative materials - NUCLECO ZSER Order 4610001041 Ref. N126S21
- 2018-2021 ENEA Scientific Responsible for the AZeRO Antibiotics Project ""Evaluation of the Presence of Antibiotics in Animal Wastes and Digestate from Biogas Plants: Study of Strategies for their Removal" Prot. N.ro 85-2017-15065 Research Group Projects - CNR-IRSA and ENEA Knowledge and cooperation for a new development model", in implementation of Regional Law n. 13 of 04 August 2008 and of the Regional Strategic Programme for Research, Innovation and Technology Transfer 2017-2020. The project resulted in the assignment of a research fellow for 21 months (€ 42,000.00) and research materials -
- 2017-2018 Scientific Responsible ENEA Value Contract from NUCLECO S.p.A. - Society for Nuclear Ecoengineering - for entrusting Microbiology Services on contaminated and non-contaminated cement specimens NUCLECO ZSER Order 4610000686 Order N094S16
- 2016 Responsible for the Collaboration Agreement with the Department of Civil, Construction and Environmental Engineering of the University of Naples entrusted with activities for carrying out research entitled "Scale-up of the anaerobic digestion process of lignocellulosic biomasses using ruminal fungal inoculum and selected bacterial pool F210" within the framework of the Three-Year Research Plan for the National Electricity System 2015-2017, Project B.1 .1 "Bioenergy" in the 2015 Annual Implementation Plan
- 2015 Responsible of the ENEA Collaboration Agreement with the University of Naples, Federico II, Department of Civil and Environmental Engineering: "Optimisation of process conditions for the energy valorisation of slowly biodegradable waste biomasses through biological decomposition by anaerobic route" as part of the Three-Year Research Plan within the National Electricity System 2012-2014, Project B.1.1 "Development of systems for the production of electricity from biomasses and the upgrading of biofuels";

**EDUCATION AND TRAINING**

March 1985

MSc "Summa cum Laude" in Natural Science, specialization Ecology "La Sapienza" University of Rome

PhD

**WORK ACTIVITIES**

1988- 2004

Professional assignments by private companies: Professional assignments by private companies  
Environmental impact assessments of high-speed railway lines, water reservoirs and fish farms.

2004 – SEAD s.r.l. Rieti, (RM) - Identification of environmentally friendly methods of controlling weed species on railway lines

2000 - - 3A Progetti Rome -

2001 - 3A Progetti Rome - Vegetation survey for " Variante di aggiornamento al Piano Regolatore del Comune di Palestrina" (RM)

2000 - Vegetation survey in the area of the Municipality of Civitavecchia (Lazio) locality 'Sterpeto' for the implementation of the 'Patto Territoriale degli Etruschi' project.

1997-1999 Società Cooperativa " Maja" Roma, Biodiversity indicators for lagoon and brackish environments: analysis of sediments affected by the impact of offshore submersible cages in the Gulf of Policastro (1998-99); control and mitigation of the impact of fish farm effluents in floating cages in sheltered sites (Sardinia and Mar Piccolo of Taranto); definition of Biodiversity indicators for lagoon and brackish environments

1990-1991 Studio Tecnico Associato (L'Aquila) Preliminary study on the resulting impacts generated by the construction of 3 reservoirs in the Frentana-Lanciano Land Reclamation Consortium and the raising of the Serranella (WWF Oasis) Abruzzo Region

1990- 1991 Pangea s.r.l. (RM) Environmental Impact Assessment study on the vegetation and fauna component relating to the construction of the Florence-Milan high-speed railway line (Parma-Fidenza section) Surveys of the territory, drafting of thematic maps, drafting of criticality sheets.

1987-1989 EcoConsulting s.r.l. (RM) Environmental Impact Assessment on the vegetation and fauna component relating to the construction of the Rome-Naples high-speed railway line, (1:5,000) Surveys of the territory, drafting of thematic maps, drafting of criticality sheets.

**Academic activity****Teaching assignment:****2020- present**

Professor of the course "Bioremediation of contaminated aquatic and terrestrial environments" Master's Degree in Ecobiology (Bio/07) Department of Environmental Biology, Sapienza University of Rome.

- 2023 - Summer School CIVIS (European Civic University Alliance) Blended Intensive Programme: H2O pollution: holistic approach and nature based solutions. Lecture: "*Application of Microbial Electrochemical Technologies (METs) for wastewater treatment and energy recovery*"**Organising committee and teaching**

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**PERSONAL SKILLS**

**Mother tongue(s)**      **Italian**

**Other language(s)**    **English**

Digital skills    MS Windows, Office, Software: for GIS, graphics, statistical analysis and publication of results

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**ADDITIONAL INFORMATION****Main Publications**

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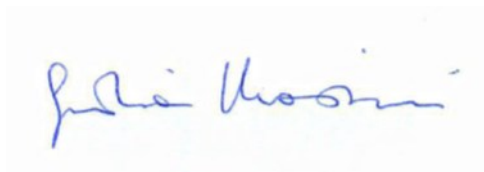
- 1) Policastro, G., Ferraro, A., Miritana, V. M., Massini, G., & Fabbriano, M. (2024). Fermentative hydrogen production enhancement by microbial community selection and enrichment through biostimulation. *Fuel*, 355, 129396. <https://doi.org/10.1016/j.fuel.2023.129396>.
- 2) Mazzurco Miritana, V., Gaetani, A., Signorini, A., Marone, A., & Massini, G. (2023). Bioaugmentation Strategies for Enhancing Methane Production from Shrimp Processing Waste through Anaerobic Digestion. *Fermentation*, 9(4), 401. <https://doi.org/10.3390/fermentation9040401>.
- 3) Miritana, V. M., Patrolecco, L., Barra Caracciolo, A., Visca, A., Piccinini, F., Signorini, A., Rosa S., Grenni P., Garbini G.L., Spataro F., Rauseo J. & Massini, G. (2022). Effects of Ciprofloxacin Alone or in Mixture with Sulfamethoxazole on the Efficiency of Anaerobic Digestion and Its Microbial Community. *Antibiotics*, 11(8), 1111.
- 4) Caracciolo, A. B., Visca, A., Rauseo, J., Spataro, F., Garbini, G. L., Grenni, P., Mariani L.; Mazzurco Miritana V., Massini G. & Patrolecco, L. (2022). Bioaccumulation of antibiotics and resistance genes in lettuce following cattle manure and digestate fertilization and their effects on soil and phyllosphere microbial communities. *Environmental Pollution*, 315, 120413.
- 5) Visca A., Rauseo J., Spataro F., Patrolecco L., Grenni P., Massini G., Mazzurco Miritana V., Barra Caracciolo A. (2022). Antibiotics and antibiotic resistance genes in anaerobic digesters and predicted concentrations in agroecosystems. *Journal of Environmental Management*, 301, 113891. <https://doi.org/10.1016/j.jenvman.2021.113891>
- 6) Ferraro, A., Massini, G., Mazzurco Miritana, V., Panico, A., Pontoni, L., Race, M., Rosa, S., Signorini, A., Fabbriano, M., Pirozzi Francesco. 2021. Bioaugmentation strategy through enriched inocula to enhance PAHs anaerobic degradation in contaminated soils. *Chemosphere*, 130091. <https://doi.org/10.1016/j.chemosphere.2021.130091>
- 7) Visca, A., Barra Caracciolo, A., Grenni, P., Patrolecco, L., Rauseo, J., Massini, G., Mazzurco Miritana, V., & Spataro, F. 2021. Anaerobic Digestion and Removal of Sulfamethoxazole, Enrofloxacin, Ciprofloxacin and Their Antibiotic Resistance Genes in a Full-Scale Biogas Plant. *Antibiotics*, 10(5), 502. <https://doi.org/10.3390/antibiotics10050502>
- 8) Marone A., Massini G., Pignatelli V., Rosa S., Signorini A. 2021 Biological processes in the Green Hydrogen value chain *Energia, Ambiente Innovazione Planet Hydrogen 1/2021* pp.95-100 DOI 10.12910/EAI2021-019
- 9) Lembo, G., Rosa, S., Mazzurco Miritana, V., Marone, A., Massini, G., Fenice, M., & Signorini, A. 2021. Thermophilic Anaerobic Digestion of Second Cheese Whey: Microbial Community Response to H<sub>2</sub> Addition in a Partially Immobilized Anaerobic Hybrid Reactor. *Processes*, 9,1, 43. <https://doi.org/10.3390/pr9010043>

- 10) Ferraro, A., Massini, G., Mazzurco Miritana, V., Rosa, S., Signorini, A., Fabbicino, M. 2020. A novel enrichment approach for anaerobic digestion of lignocellulosic biomass: Process performance enhancement through an inoculum habitat selection. *Bioresource Technology*, 313, 123703. <https://doi.org/10.1016/j.biortech.2020.123703>
- 11) Mazzurco Miritana, V., Massini, G., Visca, A., Grenni, P., Patrolecco, L., Spataro, F., Rauseo, J., Garbini, G., Signorini, A., Rosa, S., Barra Caracciolo, A. 2020. Effects of sulfamethoxazole on the microbial community dynamics during the anaerobic digestion process. *Frontiers in Microbiology*, 11, 2221. <https://doi.org/10.3389/fmicb.2020.537783>
- 12) Barra Caracciolo, A., Visca, A., Massini, G., Mazzurco Miritana, V., Patrolecco, L., Grenni, P. 2020. Environmental Fate of Antibiotics and Resistance Genes in Livestock Waste and Digestate from Biogas Plants. *World Health*, 21, 23. <https://doi.org/10.37722/ESPRAM.20201>
- 13) Ferraro A., Massini G., M. Miritana V., Signorini A., Race M., Fabbicino M. (2019). A simplified model to simulate bioaugmented anaerobic digestion of lignocellulosic biomass: Biogas production efficiency related to microbiological data. *Science of the Total Environment*, <https://doi.org/10.1016/j.scitotenv.2019.07.051>
- 14) Ferraro, A., Dottorini, G., Massini, G., Miritana, V. M., Signorini, A., Lembo, G., & Fabbicino, M. (2018). Combined bioaugmentation with anaerobic ruminal fungi and fermentative bacteria to enhance biogas production from wheat straw and mushroom spent straw. *Bioresource Technology*, 260, 364-373. <https://doi.org/10.1016/j.biortech.2018.03.128>
- 15) Marone A., Izzo G., Mentuccia L., Massini G., Paganin P., Rosa S., Varrone C. Signorini A., 2014 Vegetable waste as substrate and source of suitable microflora for bio-hydrogen production. *Renewable Energy* 68: 6-13. <https://doi.org/10.1016/j.renene.2014.01.013>
- 16) Gorrasi S., Izzo G., Massini G., Signorini A., Barghini P., Fenice M. 2014 "From Polluting Seafood Wastes to Energy. Production of Hydrogen and Methane from Raw Chitin Material by a Two-phase Process". *Journal of Environmental Protection and Ecology* 15 (2): 526-536.
- 17) Izzo G., Rosa S., Massini G., Patriarca C., Fenice M., Fiocchetti F., Marone A., Varrone C., Signorini A., 2014 "From hypertrophic lagoons to bioenergy production". *Journal of Environmental Protection and Ecology* 15 (2): 537-546.
- 18) Varrone C., Rosa S., Fiocchetti F., Giussani B., Izzo G., Marone A., Massini G., Signorini A., 2013 "Enrichment of activity sludge for enhanced hydrogen production from crude glycerol". *International Journal of Hydrogen Energy*, 38:1319-31.
- 19) Di Bonito R., Marone A., Massini G., Patriarca C., Rosa S., Signorini A., Varrone C., Viola C., Izzo G., 2013 "Characterization by length heterogeneity (LH)-PCR of a hydrogen-producing community obtained in dark fermentation using coastal lake sediment as an inoculum". *Energy, Sustainability and Society*. 3(1). DOI: 10.1186/2192-0567-3-3.
- 20) Petrucci E., Di Palma L., De Luca E., Massini G., 2013 "Biocides electrogeneration for a zero-reagent on board disinfection of ballast water". *Journal of Applied Electrochemistry* 43:237-244. DOI:10.1007/s10800-012-0507-0. <https://doi.org/10.1016/j.jhydene.2012.11.069>
- 21) Varrone C., Giussani B., Izzo G., Massini G., Marone A., Signorini A., Wang A. 2012. Statistical Optimization of Biohydrogen and Ethanol Production from Crude Glycerol by Microbial Mixed Culture. *International Journal of Hydrogen Energy* 2012,37;16479-88 <https://doi.org/10.1016/j.jhydene.2012.02.106>
- 22) Patriarca C., Massini G., Mentuccia L., Pannicelli A., Signorini A., 2012. Produzione biologica di idrogeno da scarti agro-alimentari e zootecnici: ruolo della codigestione. *Rivista di studi di Sostenibilità*, n° speciale. DOI 10.3280/RISS 2012-SU2004.
- 23) Marone A., Massini G., Patriarca C., Signorini A., Varrone C., Izzo G. 2012. Hydrogen Production From Vegetable Waste By Bioaugmentation of Indigenous Fermentative Communities. *International Journal of Hydrogen Energy* 2012; 37(7): 5612-5622. <https://doi.org/10.1016/j.jhydene.2011.12.159>.
- 24) Varrone C., Fiocchetti F., Giussani B., Izzo G., Marone A., Massini G., Patriarca C., Rosa S., Signorini A., Wang A., 2012 Bio-conversion of biodiesel-derived glycerol into hydrogen and ethanol: beyond second-generation biofuels. *Peer Reviewed Proceedings of the 20th European Biomass Conference & Exhibition 2012*, 18-22 June, Milan. Paper ID: 2BO.1.4 . pp: 713-716. 20thEUBCE2012-2BO.1.4 (ISBN: 978-88-89407-54-7).
- 25) Marone A., Izzo G., Massini G., Patriarca C., Rosa S., Varrone C., Signorini A. Fermentative hydrogen production from vegetal wastes by enrichment of indigenous mixed microbial population. 2010. *Journal of Biotechnology*, (150), 183. [10.1016/j.jbiotec.2010.08.477](https://doi.org/10.1016/j.jbiotec.2010.08.477).
- 26) Signorini A., Massini G., Migliore G., Tosoni M., Varrone C., Izzo G., 2008. Sediment biogeochemical differences in two pristine Mediterranean coastal lagoons (in Italy) characterized by different phanerogam dominance - A comparative approach. *Aquatic Conserv: Mar. Freshw. Ecosyst*. 18: S27-S44 . Special Issue: Transitional States in Transitional Waters. Published online in Wiley InterScience ([www.interscience.wiley.com](http://www.interscience.wiley.com)) DOI: 10.1002/aqc.953.



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

Rome, 25 March 2024

A handwritten signature in blue ink, reading "Giulia Massini", is centered on a light gray rectangular background.