

EUROPEAN
CURRICULUM VITAE
FORMAT



PERSONAL INFORMATION

Name **DONATELLA BARISANO**
Address **RESEARCH CENTER ENEA TRISAIA
SS JONICA 106, KM 419 + 500, 75026 ROTONDELLA (MT), ITALY**
Telephone **+390835974508** Mobile **+393385068389**
SCOPUS links <https://www.scopus.com/authid/detail.uri?authorId=7801375057>
Other link <http://www.trisaia.enea.it/trisaia/it/laboratori-e-impianti/laboratori-biomasse/laboratori-biomasse/laboratorio-sviluppo-processi-termochimici-e-conversione-correnti-gassose>
E-mail **donatella.barisano@enea.it**
Nationality Italian
Date of Birth 12/11/1968
Gender Female

WORK EXPERIENCE

- Dates (from - to) 15 January 2002 to present
- Name and address of the employer ENEA - Italian National Agency for New Technologies, Energy and Sustainable Economic Development, Research Center Trisaia
- Type of business or sector Renewable Energy Sources – focus on Biomass and Bio-Waste
- Occupation or position held **Researcher (permanent staff)**
- Main activities and responsibilities Valorization of lignocellulosic biomass for energy purposes through thermochemical and biochemical processes;
Development and study of gasification processes and technologies, purification methods and conditioning of gas streams (primary and secondary methods);
Process development for the production of advanced liquid and gaseous biofuels (FT fuels, methanol, DME, SNG, H₂, syngas);
Development of sampling procedures and characterization of process streams; Study of hydrothermal pretreatment of biomass for fractionation and biochemical conversion for bioethanol production.
- Dates (from - to) 12 October 1998 – 31 December 2001
- Name and address of the employer ENEA - Italian National Agency for New Technologies, Energy and Sustainable Economic Development, Research Center Trisaia
- Type of business or sector Renewable Energy Sources – focus on Biomass and Bio-Waste
- Occupation or position held **Researcher (fixed-term staff)**
- Main activities and responsibilities R&D on exploitation of biomass residues via thermochemical and biochemical conversion processes

EDUCATION AND TRAINING

- Date March 2016
- Name and type of organisation providing education and training Università degli Studi dell'Aquila
- Principal subjects/occupational skills covered Biomass, Gasification, CO₂ sorbents, Hydrogen
- Title of qualification awarded **PhD in Systems and Methods for Energy Management**
- Date May 1997

- Name and type of organisation providing education and training
- Principal subjects/occupational skills covered
- Title of qualification awarded

Università degli Studi di Bari "Aldo Moro"

Licensed to practice as a professional chemist

- Date

March 1997

- Name and type of organisation providing education and training
- Principal subjects/occupational skills covered
- Title of qualification awarded

Università degli Studi di Bari "Aldo Moro"

Experimental thesis in spectroscopy and computational chemistry

"Trasferimento Elettronico Intramolecolare nell'Ubichinone-0: Effetto dell'Intorno Chimico."

Degree in Chemistry

110/110 cum laude

PERSONAL SKILLS AND COMPETENCES

MOTHER TONGUE

ITALIAN

OTHER LANGUAGES

ENGLISH

SCIENTIFIC SKILLS AND COMPETENCES

- Research field of interest: Biomass&Bioenergy, gasification, CHP, syngas-conditioning, syngas-conversion, biofuels, circular economy;
- Author of several publications in ISI Scientific Journals and international conference proceedings;
- Reviewer for international Peer-Reviewed journals by Elsevier, ACS Publications, Springer, MDPI publishers;
- Invited speaker at International conferences and workshop (e.g. ICE2M-2019, CSDEEP-2017, ICS-UNIDO SADC region);
- Member of the scientific committee of the European Biomass Conference and Exhibition (EUBCE);
- Scientific supervisor of 3 ENEA research fellowships;
- Co-supervisor of MSc, undergraduate internship (UniBO, PoliTO, La Sapienza, UniBAS, UniCAL).

RELEVANT ROLES AND COMPETENCES

- WP/Task leader in several national and international projects. Some of major ones in the last 5 years:
 - o February 2022 to present, EMERA ""Efficientamento di Micro reti Energetiche alimentate da sole fonti Rinnovabili per l'Autonomia e l'indipendenza delle zone rurali dal sistema centralizzato". Regional Call: Progetti complessi di ricerca e sviluppo - CORES. Aree tematiche "Energia e bioeconomia" PO FESR 2014-2020 – Azione 1B.1.2.2, 36-month project;
 - o November 2018 to April 2022, COMETA "Colture autoctone mediterranee e loro valorizzazione con tecnologie avanzate di chimica verde". National Call PON "Ricerca e Innovazione" 2014 – 2020 (MIUR n. 1735, 13/07/2017), 42-month project;
 - o December 2021 to present, GICO "Gasification Integrated with CO₂ capture and conversion". Grant agreement ID: 101006656, H2020-LC-SC3-2020-RES-RIA, 4-year project;
 - o March 2019 to present, BLAZE ""Biomass Low cost Advanced Zero Emission small-to-medium scale integrated gasifier-fuel cell CHP plant". Grant agreement ID: 815284, H2020-LC-SC3-2018-RES-TwoStages (RIA), 4-year project..
- Responsible for R&D contracts with University of Bologna and University of L'Aquila within the ENEA-MISE framework program called "Electrical System Research" (from 2012 to 2016);
- Scientific responsible for ENEA activities on Biomass&Gasification R&D activities within the ENEA-MISE framework program " Electrical System Research" (from 2012 to 2016);
- Italian representative in Task 33 (Gasification of Biomass and Waste) of the IEA-Bioenergy set up by the International Energy Agency on bioenergy (IEA). (from September 2016 to present).

PUBLICATION INDEXES (SCOPUS)

- Number of publications: 21
- Total number of citations: 344
- H-Index: 7
- Link to SCOPUS/Orcid/researcher ID:
<https://www.scopus.com/authid/detail.uri?authorId=7801375057>
- ORCID: 0000-0001-9009-4319

RELEVANT PUBLICATIONS

In the last 10 years.

Papers in journals

1. Investigation of an Intensified Thermo-Chemical Experimental Set-Up for Hydrogen Production from Biomass: Gasification Process Performance—Part I. D. Barisano, G. Canneto, F. Nanna, A. Villone, E. Fanelli, C. Freda, M. Grieco, G. Cornacchia, G. Braccio, V. Marcantonio, Enrico Bocci, P.U. Foscolo, S. Heidenreich. *Processes* 2021, 9(7), 1104; <https://doi.org/10.3390/pr9071104>
2. Green hydrogen through biomass gasification. Donatella Barisano. In *Pianeta Idrogeno e Speciale Progetti ENEA*, n. 1 Gennaio - Aprile 2021, pp. 101 – 106, Energia, ambiente e innovazione. DOI 10.12910/EAI2021-020
3. Purification of Wastewater from Biomass-Derived Syngas Scrubber Using Biochar and Activated Carbons. E. Catizzzone, C. Sposato, A. Romanelli, D. Barisano, G. Cornacchia, L. Marsico, D. Cozza and M. Migliori. *Int. J. Environ. Res. Public Health* 2021, 18(8), 4247; <https://doi.org/10.3390/ijerph18084247>
4. Performance, cost and market prospects of technologies used for the Production, transformation and efficient use of biomethanol. D. Barisano, V. Kumar Sharma, G. Braccio, A. Singh and D. Buddhi. *Plant Archives* Vol. 20, Supplement 2, 2020 pp. 3874-3889 e-ISSN:2581-6063 (online), ISSN:0972-5210.
5. Bioremediation of Wastewater Stream from Syngas Cleaning via Wet Scrubbing. L. Bianco, E. D'Amico, A. Villone, F. Nanna, D. Barisano. *Chemical engineering transactions*, Volume 80, 2020, pages: 31-36., <https://doi.org/10.3303/CET2080006>
6. Phenol Removal from Water with Carbons: an Experimental Investigation. C. Sposato, E. Catizzzone, A. Romanelli, L. Marsico, D. Barisano, M. Migliori, G. Cornacchia. *Tecnica Italiana-Italian Journal of Engineering Science*, Volume 64, 2020, Issue 2-4, pages 143-148, <https://doi.org/10.18280/ti-ijes.642-403>.
7. Towards Methanol Economy: A Techno-environmental Assessment for a Bio-methanol OFMSW/Biomass/Carbon Capture-based Integrated Plant. Giuliano, A; Catizzzone, E; Barisano, D; Nanna, F; Villone, A ; De Bari, I; Cornacchia, G; Braccio, G. *IJHT*, Volume 37, 2019, Issue 3, Pages: 665-674, <https://doi.org/10.18280/ijht.370301>
8. Air gasification of digestate and its co-gasification with residual biomass in a pilot scale rotary kiln. C. Freda, F. Nanna, A. Villone, D. Barisano, S. Brandani G. Cornacchia. *International Journal of Energy and Environmental Engineering*, Volume 10, 2019, Issue 3 Pages: 335-346. Impact factor 1.870, Q2. <https://doi.org/10.1007/s40095-019-0310-3>
9. Steam/oxygen biomass gasification at pilot scale in an internally circulating bubbling fluidized bed reactor. D. Barisano, G. Canneto, F. Nanna, E. Alvino, G. Pinto, A. Villone, M. Carnevale, V. Valerio, A. Battafarano, G. Braccio. *Fuel Processing Technology*, Volume 141, Part 1, January 2016, Pages 74-81. Impact factor 3.847, Quartile: Q1. <https://doi.org/10.1016/j.fuproc.2015.06.008>
10. CO₂ Sorption-Enhanced Processes by Hydrotalcite-Like Compounds at Different Temperature Levels. K. Gallucci, F. Micheli, D. Barisano, A. Villone, P.U. Foscolo, L. Rossi. *International Journal of Chemical Reactor Engineering*, Volume 13, Issue 2, June 2015, Pages: 143-152. <https://doi.org/10.1515/ijcre-2014-0131>
11. Production of gaseous carriers via biomass gasification for energy Purposes. D. Barisano, G. Canneto, F. Nanna, A. Villone, E. Alvino, M. Carnevale, G. Pinto. 68th Conference of the Italian Thermal Machines Engineering Association, ATI2013 – Energy Procedia, 45 (2014), Pages: 2 – 11. <https://doi.org/10.1016/j.egypro.2014.01.002>
12. Biomass gasification and in-bed contaminants removal: Performance of iron enriched Olivine and bauxite in a process of steam/O₂ gasification. D. Barisano, C. Freda, F. Nanna, E. Fanelli, A. Villone. *Bioresource Technology*, 118 (2012), Pages: 187–194. Impact factor: 6.159, Quartile: Q1. <https://doi.org/10.1016/j.biortech.2012.05.011>

Papers in conference proceedings

1. Mid term results of the h2020-lc-sc3-res-11 blaze project: Biomass low cost advanced zero emission small-to-medium scale integrated gasifier fuel cell combined heat and power plant. Bocci, E., Del Zotto, L., Di Carlo, A., Barisano D., Pumiglia D., Poggiaroni G., Pérez-Fortes, M., Van Herle, J. *European Biomass Conference and Exhibition Proceedings*, 2021, pp. 472–479, DOI: 10.5071/29thEUBCE2021-2CO.9.2
2. Gasification tests at a bench scale bubbling fluidized bed plant for syngas production: Evaluation of primary methods for gas cleaning and conditioning. Barisano, D., Nanna, F., Villone, A., Catizzzone, E., Bocci, E. *European Biomass Conference and Exhibition Proceedings*, 2021, pp. 526–529, DOI: 10.5071/29thEUBCE2021-2AV.4.5
3. Towards the implementation of the blaze technology for chp applications: Preliminary gasification tests at a bench scale bubbling fluidized bed. Barisano, D., Nanna, F., Villone, A., Catizzzone E., Freda C., Cosentino F., Carbone D., Di Benedetto F., Bocci

- E. European Biomass Conference and Exhibition Proceedings, 2020, pp. 285–287, ISSN: 22825819 ISBN: 978-88-89407-20-2, DOI: 10.5071/28thEUBCE2020-2BO.2.2.
4. First Results of the H2020-Lc-Sc3-Res.-11 Blaze Project: Biomass Low Cost Advanced Zero Emission Small-To-Medium Scale Integrated Gasifier Fuel Cell Combined Heat and Power Plan. Bocci, E.L.; Zotto, D.; Monforti, A.F.; Marcantonio, V.; Di Alessandro, C.A.; Giuliano, D.E.; Barisano, D.; Stephen, S.; Massimiliano, P.M.; Pietra, D.; et al. In Proceedings of the 8th European Fuel Cell Technology & Applications Piero Lunghi Conference - EFC19, Napoli, Italy, 9–11 December 2019, pages: 253 - 255.
 5. Hydrogen production from biomass via gasification process: the results of the EU UNIfHY project. D. Barisano*, E. Bocci, P.U. Foscolo, S. Heidenrich, M. Rep, C. Courson, J. Cornish, G. Braccio. In Proceedings of the 25th European Biomass Conference and Exhibition, 12-15 June, 2017, Stockholm, Sweden, pp 992 - 999. ISSN: 22825819, ISBN: 978-88-89407-17-2, DOI: 10.5071/25thEUBCE2017-3CO.3.1.
 6. Use of experimental catalysts for production of bio-methane from biomass: Tests of methanation with real syngas and performance evaluations. Barisano, D., Lotierzo, A., Nanna, F., Villone A. Agostini R, Basile, F., Lombardi, E. European Biomass Conference and Exhibition Proceedings, 2017(25thEUBCE), pp. 1245–1247, ISSN: 22825819, ISBN: 978-88-89407-17-2, DOI: 10.5071/25thEUBCE2017-3BV.3.13.
 7. Biomass gasification and BioSNG production: use of sorbents for simultaneous H2 enrichment and CO2 removal for the conditioning of gas composition. D. Barisano*, R. Agostini, A. Villone, F. Nanna, K. Gallucci, F. Ferrante, G. Taglieri, P.U. Foscolo. In Proceedings of the 25th European Biomass Conference and Exhibition, 2017, 12-15 June, Stockholm, Sweden, pp 478 - 484. ISSN: 22825819, ISBN: 978-88-89407-17-2, DOI: 10.5071/25thEUBCE2017-2BO.14.3.
 8. Steam/Oxygen Biomass Gasification in a 1000 kWth ICBFB Pilot Plant. D. Barisano*, G. Canneto, F. Nanna, E. Alvino, G. Pinto, A. Villone, A. Battafarano, M. Corrado, G. Braccio. In Proceedings of the 23rd European Biomass Conference and Exhibition, 2015, 1-4 June, Vienna, Austria. pp. 550-554. ISSN 2282-5819, ISBN: 978-88-89407-516, DOI: 10.5071/23rdEUBCE2015-2CO.2.4
 9. Energy valorization of hydrolytic lignin residue via steam/oxygen gasification. D. Barisano*, F. Nanna, C. Freda, A. Villone, R. Nistri, D. Chiamonti, A. M. Rizzo. In Proceedings of the 21st European Biomass Conference and Exhibition-Setting the course for a bio-based economy. 3-7 June 2013, Copenhagen, Denmark. Pages: 430-434. ISSN: 22825819, ISBN: 978-88-89407-53-0, DOI: 10.5071/21stEUBCE2013-2AO.4.2
 10. LCA and LCSA of hydrogen production from biomass. P. Masoni, A. Zamagni, C. Tripepi, M. Stefanova and D. Barisano. In Proceedings of the 3rd International Exergy, Life Cycle Assessment, and Sustainability Workshop & Symposium (ELCAS3), 07 -09 July, 2013, Nisyros, Greece. Pages: 1185-1194. ISBN: 9789602436912.
 11. Biomass gasification and syngas production for use in solid oxide fuel cell: gas cleaning and conditioning, and performance tests. J. Jewulski, M. Stepien, M. Blesznowski, K. Gallucci, D. Barisano. In Proceedings of the 21st European Biomass Conference and Exhibition-Setting the course for a bio-based economy. 18-22 June, 2012, Milan, Italy. Pages: 827-831. ISSN 2282-5819, ISBN: 978-88-89407-54-7, DOI: 10.5071/20thEUBCE2012-2CO.4.1

PATENTS

- Italian Patent n° 102021000002540 "Reattore di Gassificazione a Letto Fisso Equicorrente". Fanelli Emanuele - Nanna Francesco - Barisano Donatella - Cornacchia Giacinto - Braccio Giacobbe. Deposited: 5 February 2021
- Italian Patent n° 202019000004530 "Reattore per la gassificazione di biomassa". Fanelli Emanuele - Nanna Francesco - Barisano Donatella - Cornacchia Giacinto - Braccio Giacobbe. Deposited: 13 December 2019

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

Matera, 18.05.2022

Signature