# BRIEF CV_FRANCESCO PARRILLO

## PERSONAL INFORMATION

**Name**: PARRILLO Francesco

**Address**: 36, Via Ferrovia, 81057, Teano (Caserta), Italy

**Telephone**: 0823/885867; **Mobile:** 3494196488

**E-mail:** francesco.parrillo@live.it; francesco.parrillo@unicampania.it

**Nationality:** Italian

**Date of Birth:** 29/11/1989

**Gender:** Male

**Dr. Francesco Parrillo** is assistant professor at the Department of Environmental, Biological and Pharmaceutical Sciences and Technologies of the University of Campania "Luigi Vanvitelli", as an expert in fluidized bed gasification process, with specific competence on hot syngas cleaning by means activated carbons and other catalysts. He achieves his Master in Environmental Science and Technology at the University of Campania "Luigi Vanvitelli" (2015), where he also obtained his Ph.D. in Environment, Design and Innovation (2018).

## TEACHING ACTIVITY

Teaching activity in "Biowaste management" and Teaching support for "Solid waste management" and "Industrial Pollution Control Engineering" courses at the University of Campania "Luigi Vanvitelli".
Teaching activity in specialisation courses "Health Safety Environment Manager" and "Management of local public services" at the University of Campania "Luigi Vanvitelli".

## ACTIVITY IN THE INTERNATIONAL SCIENTIFIC COMMUNITY

Referee of several international scientific journals: *Waste Management, Energy, Fuel and Processing and technology, Biomass and Bioenergy, Journal of Analytical and Applied Pyrolysis, Waste and Biomass Valorization, Bioresource Technology Reports, Renewable Energy, Energy Technology, Biofuels, Bioproducts & Biorefining, Fuel.*

Member of local organizing committee of the International ECI Conference on "LCA and other assessment tools for waste management and resource optimization" (Cetraro, June 2022).
Participant and speaker in several international conferences on waste management and life cycle assessment.

## RESEARCH ACTIVITY

**Main participant in national and international projects**:

- **H2020 project "NONTOX" (820895)**. Removing hazardous compounds to increase recycling rates of WEEE, ELV and C&DW plastics (2019-2021).

- **BIOVALUE (PON 03PE_00176).** Implementation of a technological platform for the development of hybrid generation and cogeneration systems based on the exploitation of renewable energy sources. (2018-2021).

**Main participant in national and international projects with private companies:**

- **Sotacarbo S.p.A** (Italy) – Support for experimental tests on a pilot gasification plant (2018-in progress).
- **Foglia Umberto** s.r.l. - Technical and environmental assessment of an anaerobic digestion process for biomethane production (2017).

- Visiting student for a two-month stage at Department of Chemical and Enviromental Engineering, University of Seville to collaborate on a research project related to operation and improvements of Fletgas technology and char utilization for tar removal (2016).

- Visiting Researcher for a month at Department of Chemical Engineering, Faculty of Engineering Science, University College London, London, United Kingdom to cooperate with UCL researchers in the utilisation of the UCL one-dimensional non-isothermal kinetic model for oxygen-enriched air and steam gasification of plastic in a Bubbling Fluidized Bed reactor.

Francesco Parrillo's research and professional activity is mainly oriented to several aspects of thermal treatments of different wastes and biomass, with particular attention to:

- Fluidized bed gasification process;
- Design and operation criteria of fluidized bed gasifiers;
- Hot syngas clean-up processes by means of activated carbons and other catalysts.

- Bibliometric data (as obtained by Scopus data bank, at September 01th, 2022): **JCR articles: 10; total citations: 293; h index: 6**. Author ID: 21741308000.

I. **Parrillo F.**, Ardolino F., Boccia C., Cali' G., Marotto D., Pettinau A., Arena U. "Co-gasification of plastics waste and biomass in a pilot scale fluidized bed reactor" Energy, 273, 127220 (2023). https://doi.org/10.1016/j.energy.2023.127220. Q1.

II. Ardolino F., **Parrillo F.,** Di Domenico C., Costarella F., Arena U. "Combined Use of an Information System and LCA Approach to Assess the Performances of a Solid Waste Management System" Applied Sciences, 13(2), 707. Q2.

III. **Parrillo F.**, Boccia C., Ruoppolo G., Commodo M., Berruti F., Arena U. Steam reforming of tar in hot syngas cleaning by different catalysts: removal efficiency and coke layer characterization. The Canadian Journal of Chemical Engineering, (2022). https://doi.org/10.1002/cjce.24535. Q2.

IV. Boccia C., **Parrillo F.**, Ruoppolo G., Commodo M., Berruti F., Arena U. The effect of steam concentration on hot syngas cleaning by activated carbons. Fuel Processing and Technology, 224 (2021) 107033. https://doi.org/10.1016/j.fuproc.2021.107033. Q1.

V. **Parrillo F**., Ardolino F., Cali' G., Marotto D., Pettinau A., Arena U. "Fluidized bed gasification of eucalyptus chips: axial syngas profiles in a pilot scale reactor" **Energy,** 219, 119604 (2021). https://doi.org/10.1016/j.energy.2020.119604. Q1.

VI. Ardolino F., Cardamone G.F., **Parrillo F**., Arena U. "Biogas-to-biomethane upgrading: a comparative review and assessment in a life cycle perspective". **Renewable and Sustainable Energy Reviews**. 110588, (2020). https://doi.org/10.1016/j.rser.2020.110588. Q1.

VII. **Parrillo F**., Ruoppolo G., Arena U. "The role of activated carbon size in the catalytic cracking of naphthalene", **Energy**. 190, 116385 (2020). https://doi.org/10.1016/j.energy.2019.116385. Q1.

VIII. Ardolino F., **Parrillo F**., Arena U. "Biowaste-to-Biomethane or Biowaste-to-Energy? An LCA study on Anaerobic Digestion of Organic Waste", **Journal of Cleaner Production**, 174, 462-476 (2018). https://doi.org/10.1016/j.jclepro.2017.10.320. Q1.

IX. Fuentes-Cano D., **Parrillo F**., Ruoppolo G., Gòmez-Barea A., Arena U. "The influence of the char internal structure and composition on heterogeneous conversion of naphthalene". **Fuel Processing Technology**, 172, 125–132 (2018). https://doi.org/10.1016/j.fuproc.2017.12.015. Q1.

X. Di Gregorio F., **Parrillo F**., Salzano E., Cammarota F., Arena U. "Removal of naphthalene by activated carbons from hot gas" **Chemical Engineering Journal**, 291, 244-253 (2016). https://doi.org/10.1016/j.cej.2016.01.081. Q1.