

Mirko Cucina

CURRICULUM VITAE

PERSONAL INFORMATION

SURNAME	CUCINA
NAME	MIRKO
BIRTH DATE	23RD DECEMBER 1988
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Formation

- December 2012- February 2016: **PhD in “Environmental and Agricultural Sciences”** at University of Perugia (SSD/AGR13, Agricultural Chemistry). Thesis’s title: “Assessing the energetic and agronomic reuse of a pharmaceutical organic waste”. Research activity conducted for the Environmental and Civil Engineering Department (Biomass chemistry Laboratory) at University of Perugia. Supervisor: Prof. Giovanni Gigliotti; Co-supervisor: Prof. Claudia Zadra.
- September 2010 - July 2012: **Master degree in “Environmental and Agricultural Biotechnologies”** (LM-7) at University of Perugia (110/110 cum laude). Thesis’s title: “Anaerobic digestion of the solid organic fraction of municipal solid wastes: biogas production and molecular evolution of the process”. Research activity conducted for the Environmental and Civil Engineering Department (Biomass chemistry Laboratory) at University of Perugia. Supervisor: Prof. Giovanni Gigliotti; Co-supervisor: Prof. Ing. Francesco Di Maria.
- September 2007- July 2010: **Degree in “Biotechnologies”** at University of Perugia (110/110 cum laude). Thesis’s title: “Microsatellites characterization in *Cannabis sativa* L.”. Research activity conducted for the Agricultural, Environmental and Food Department at University of Perugia (Agricultural genetics laboratory). Supervisor: Prof. Emidio Albertini. Co-supervisor: Prof. Marina Dobosz.
- September 2002 - July 2007: **High school diploma in “Industrial chemistry”** at Technological Industrial Institute “A. Volta” of Perugia (100/100 cum laude).

Work and research experiences

- November 2022 - Ongoing: Researcher at Italian National Council of Research (CNR) - Institute for the study of Agricultural and Forestry in the Mediterranean (ISAFOM)
- September 2021 - Ongoing: **Contract Professor at University of Milan**. Name of the teaching: Waste management and Sustainability. Course: Master Degree - Environmental Change and Global Sustainability.

- November 2020 - Ongoing: **Honorary Fellow in “Agricultural Chemistry”** at the Agricultural and Environmental Sciences Department, University of Milan.
- January 2020 - Ongoing: **Honorary Fellow in “Environmental Engineering”** at the Environmental and Civil Engineering Department, University of Perugia.
- July 2016 - Ongoing: **Consultant for domestic composting and Scientific communicator** for G.S.A. (Gestione Servizi Ambientali) Srl, Perugia.
- September 2020 - August 2022: **Postdoctoral research fellow** at Agricultural and Environmental Department (Gruppo RICICLA) at University of Milan. Research activity: co-management of the EU project FERTIMANURE (H2020). Supervisor: Prof. Fabrizio Adani.
- September 2018 - August 2021: **Honorary Fellow in “Agricultural Chemistry”** at the Environmental and Civil Engineering Department, University of Perugia.
- August 2018 - July 2019: **Postdoctoral research fellow** at the Environmental and Civil Engineering Department (Biomass chemistry Laboratory) at University of Perugia. Research activity: evaluation of lignocellulosic residual biomass for bioenergy and fertilizers production. Management of the research activities with focus on the composting studies. Supervisor: Prof. Giovanni Gigliotti.
- May 2017 - June 2019: **Municipal waste analyst** for GESENU S.r.l.
- October 2016- October 2017: **Postdoctoral research fellow** at the Environmental and Civil Engineering Department (Biomass chemistry Laboratory) at University of Perugia. Research activity: evaluation of pharmaceutical wastewater and sludge for bioenergy and fertilizers production. Supervisor: Prof. Giovanni Gigliotti.
- June 2016 - July 2018: **Municipal waste analyst** for Consorzio Italiano Compostatori.
- January 2016 - April 2016: **Postdoctoral research fellow** at the Environmental and Civil Engineering Department (Biomass chemistry Laboratory) at University of Perugia. Research activity: evaluation of pharmaceutical wastewater and sludge for bioenergy and fertilizers production. Supervisor: Prof. Giovanni Gigliotti.
- April 2015 - August 2015: **PhD visiting student** (Erasmus+ program) at Polytechnic University of Catalonia (Barcelona, Spain). Research activity: evaluation of microalgae from WWTP anaerobic digestion for bioenergy and fertilizers production. Supervisor: Prof. Ivet Ferrer.

Other professional experiences

- December 2021 - February 2022: **Teacher** at IFTS - Fondazione Maddalena di Canossa (Bergamo, BG) for the teaching of the course “Green Agriculture and Sustainability” (24 h).
- September 2021 - June 2022: Chemistry teacher at High School “Galilei-Luxemburg” in Milan.
- February 2021 - March 2021: **Teacher** at IFTS - Fondazione Maddalena di Canossa (Bergamo, BG) for the teaching of the course “Green Agriculture and Sustainability” (12 h).
- October 2020 - August 2021: Chemistry teacher at High School “Pareto” in Milan.
- September 2019 - August 2020: **Chemistry teacher** at High School “Cavour-Marconi-Pascal” in Perugia.

- October 2018 - June 2019: **Chemistry teacher** at High School “Cavour-Marconi-Pascal” in Perugia.
- August 2018: **Chemistry teacher** at Technological Industrial Institute “A. Volta” in Perugia.
- September 2017 - June 2018: **Chemistry teacher** at High School “Cavour-Marconi-Pascal” in Perugia.

Language skills

- **Italian** mother tongue
- **English** level C1 (Common European Framework of Reference, CEFR)
- **Spanish** level B2 (Common European Framework of Reference, CEFR)
- **German** level A2

Informatics skills

- Microsoft Office: advanced level (Word, Excel, Power Point, Access, Teams);
- Search engines applications: advanced level;
- Scientific database: advanced level;
- Email: advanced level.
- Security and privacy: intermediate level.

Professional skills

- Use of the main instruments and accessories of the chemical and microbiological laboratories; knowledge of the main sampling techniques and sample preparation for chemical and microbiological analyses;
- Knowledge of the main molecular biology (extraction of DNA from complex matrices, PCR, sequencing, cloning) and microbiology (isolation, recognition and counting) techniques;
- Knowledge of the main biochemistry (ELISA test, enzymatic assays) and ecotoxicology (toxicity test, phytotoxicity test) techniques;
- Advanced knowledge of the main chemical analysis techniques: volumetric analysis, UV-visible spectrophotometry, absorption spectrometry and atomic emission (flame, graphite furnace, ICP), gas chromatography, high performance liquid chromatography, elementary analyzers of C and N, spectrometry mass;
- Advanced knowledge of the main IT tools for the acquisition of scientific data and for the modeling of biotechnological processes (anaerobic digestion, composting) and the fate of xenobiotics in the environment;

- Advanced knowledge of the main methods of statistical analysis of scientific data using IT tools (descriptive statistics, correlation analysis, analysis of variance, analysis of the main components);
- Advanced knowledge of the main analytical methods for environmental matrices characterisation (sewage sludge, soils, compost, digestate, waste, livestock wastewater, drinking water and wastewater);
- Good knowledge of current environmental legislation;
- Advanced knowledge of the legislation relating to safety in the workplace and privacy;
- Design and construction of laboratory and pilot scale plants for anaerobic digestion (batch and continuous) and composting of waste, organic by-products and waste; planning of experiments for the evaluation of the environmental and agronomic effect of the use of soil improvers in agriculture; knowledge of the main management techniques of mixed microbial crops for the production of precursors of bioplastics and volatile organic acids from waste, organic by-products and waste;
- Preparation of technical-scientific reports, preparation of scientific papers both for contributions to congresses and for publication in international journals;
- Project management (national and European projects); project proposal writing.
- Excellent organization and team work skills;
- Excellent communication and oral exposure skills.

Research projects

- Title: Resources recovery from wastewater: small-scale digesters for biogas and biofertilizer production in Colombia
Funding entity: Centre de Cooperació per el Desenvolupament - UPC (CCD2018-U003)
Duration: May 2021 - May 2022
Principal Investigator: Mirko Cucina
Project coordinator: Marianna Garfi
Budget: 11.500 €
- Title: Improving sustainable sanitation and energy access in rural areas of Peru and Colombia: constructed wetlands and small-scale digesters
Funding entity: Centre de Cooperació per el Desenvolupament - UPC (CCD2018-U003)
Duration: May 2019-May 2021
Principal Investigator: Mirko Cucina
Project coordinator: Marianna Garfi
Budget: 10.948 €
- Title: Innovative nutrient recovery from secondary sources - Production of high-added value FERTILISERS from animal MANURE (FERTIMANURE, H2020 3.2.4.1)
Funding entity: European Commission
Duration: 2020-2023
Project coordinator: Laia Llenas
Principal investigator and project manager for Unimi: Mirko Cucina
Budget: 8.394.170,75 €
- Title: Valorizzazione delle risorse legnose e dei sottoprodotti agricoli e forestali, attraverso la creazione di un modello di piattaforme logistiche per la produzione e la commercializzazione di prodotti energetici (AGREEGREEN)
Funding entity: Regione Umbria - Programma di Sviluppo Rurale 2014-2020

Duration: 2018-2020
Principal investigator for UniPG (DICA): Mirko Cucina
Budget: 199.988,55 €

- Title: Sperimentazione innovativa volta all'ottimizzazione dell'uso agronomico di digestato da impianti di depurazione zootecnica attraverso processi di fitodisidratazione e compostaggio (ZOOCOMPOST)
Funding entity: Regione Umbria - Programma di Sviluppo Rurale 2014-2020
Duration: 2014-2017
Research activity: analytical determinations, support to the management of the composting experiments, production of scientific reports
- Title: Valorizzazione dei sottoprodotti nella filiera agro energetica (BYPROENERGY)
Funding entity: Regione Umbria - Programma di Sviluppo Rurale 2014-2020
Duration: 2014-2017
Research activity: analytical determinations, support to the management of the composting experiments, production of scientific reports
- Title: Il compostaggio aziendale dei sottoprodotti della filiera olivicola-olearia e vitivinicola: da problema a risorsa (E-COMPOST)
Funding entity: Regione Umbria - Programma di Sviluppo Rurale 2014-2020
Duration: 2015-2016
Research activity: analytical determinations, support to the management of the composting experiments, production of scientific reports
- Title: Produccion de biogas a partir del tratamiento de aguas residuales empleando consorcios de microalgas y bacterias en fotobiorreactores cerrados (CTQ2014-57293-C3-3-R) (FOTOBIOGAS)
Funding entity: Ministerio de Economía y Competitividad (MINECO)
Duration: 2015 - 2017
Principal investigator: Ivet Ferrer
Research activity: analytical determinations, support to the management of the composting experiments, production of scientific reports
Budget: 118.580 €
- Title: Valorizzazione Ambientale Integrata di Reflui Zootecnici (VAIRZOO)
Funding entity: Ministero per le Politiche Agricole Ambientali e Forestali (MIPAAF)
Duration: 2012-2015
Research activity: analytical determinations, support to the management of the composting experiments, production of scientific reports

Contributes to congress and seminary

- *Production and assessment of biological activated bio-based fertilizers in the frame of FERTIMANURE H2020 project.* P. De Nisi, M. Cucina, E. Clagnan, F. Adani. Poster Presentation. XL Congress of Italian Society of Agricultural Chemistry, 5-7 September 2022.
- *CO₂ electro-recycling and energy production: a comparison between naturally doped biochar-base electrodes.* A. Goglio, H. Elboghady, A. Carrara, M. Cucina, F. Adani. Poster presentation. ISMET8 - International Society for Microbial Electrochemistry and Technology - GLOBAL CONFERENCE, September 2022.
- *Characterization of digestates from low-cost digesters in Colombia.* L. Castro, H. Escalante, A. Munoz, M. Cucina, I. Ferrer, M. Garfi. Poster presentation. 17th World Congress on Anaerobic Digestion, June 2022.
- *Current situation of manure production and management in EU. Nutrient imbalance analysis in six European countries.* M. Zilio, M. Jorba, G. Ramis, M. Cucina, A. Herrera, E.A.N. Marks, F. Adani, C. van Dijk, O. Schoumans. Oral presentation. International conference on manure management and valorization (MANUREOURCE), May 2022.

- *Calidad y propiedades de un digerido procedente de la digestión anaerobia de estiércol bovino en condiciones psicrófilas.* A. Munoz, M. Cucina, L. Castro, H. Escalante, A. Garfì, I. Ferrer. Poster presentation. First international congress in biotechnology and neotropical ecosystems, CIBEN 2021, 20-22 October 2021, Virtual Event.
- *The role of waste management in reducing bioplastics' leakage in the environment.* M. Cucina, P. De Nisi, F. Tambone, F. Adani. Oral presentation. Second Joint Meeting on Soil and Plant System Sciences, 20-23 Settembre 2021, Turin, Italy.
- *The increasing amount of bioplastics rises challenges in the management of organic municipal solid wastes through biological systems.* M. Cucina, P. De Nisi, F. Tambone, F. Adani. Oral presentation. 5th MatER Meeting + 6th International Conference on Final Sinks, 7-9 June 2021, Piacenza, Italy.
- *Compatibility of Bioplastic with Waste Management: an experimental approach.* M. Cucina, P. De Nisi, F. Tambone, F. Adani. Presentazione orale. International Conference on Biotechnology for Sustainable Agriculture, Environment and Health (BSAEH-2021), 4-8 Aprile 2021, Jaipur, India.
- *Il trattamento anaerobico di biomasse agro-zootecniche per la produzione di energia e fertilizzanti organici.* G. Gigliotti, M. Cucina, D. Pezzolla, C. Tacconi, A. Ricci. Oral presentation. "Consapevolezza del rischio e cultura della sicurezza", Consorzio Interfacoltà per l'ambiente, Giornata Mondiale dell'Ambiente, 5th June 2019. Isola Polvese, Perugia, Italy.
- *Le attività del Laboratorio di Chimica delle biomasse di uso agrario.* G. Gigliotti, M. Cucina, D. Pezzolla, A. Ricci. Poster. "Consapevolezza del rischio e cultura della sicurezza", Consorzio Interfacoltà per l'ambiente, Giornata Mondiale dell'Ambiente, 5th June 2019. Isola Polvese, Perugia, Italy.
- *Digestione anaerobica della pula di grano saraceno: effetto di pretrattamenti e codigestione sulla resa di biometanazione.* M. Cucina, C. Tacconi, A. Di Giorgio, O. Francioso, D. Pezzolla, C. Zadra, G. Gigliotti. Oral presentation. Società Italiana della Chimica Agraria congress (SICA), 2018. Reggio Calabria, Italy.
- *Benefits and risks of organic amendments obtained through biological treatment of wastes and by-products.* D. Pezzolla, M. Cucina, C. Tacconi, A. Ricci, C. Zadra, G. Gigliotti. Oral presentation. European Geosciences Union congress (EGU), 2018. Wien, Austria.
- *Long term effects of pharmaceutical sludge application on soil properties: a 17 years long case of study.* M. Cucina, D. Pezzolla, C. Tacconi, S. Sordi, C. Zadra, G. Gigliotti. Poster. European Geosciences Union congress (EGU), 2018. Wien, Austria.
- *Digestione anaerobica dello scarto di lavorazione del grano saraceno: effetto dei pretrattamenti e valutazioni energetiche.* M. Cucina, C. Tacconi, A. Di Giorgio, D. Pezzolla, O. Francioso, G. Gigliotti. Poster. Società Italiana della Chimica Agraria congress (SICA), 2017. Udine, Italy.
- *Effetto di concentrazioni crescenti di AFB1 su un processo di digestione anaerobica semi-continuo: stabilità del processo, degradazione della micotossina e qualità del digestato.* C. Tacconi, M. Cucina, D. Pezzolla, C. Zadra, G. Gigliotti. Oral presentation. Società Italiana della Chimica Agraria congress (SICA), 2017. Udine, Italy.
- *Valorization of Aflatoxin B1 contaminated corn through composting.* C. Tacconi, M. Cucina, D. Pezzolla, C. Zadra, G. Gigliotti. Poster. Società Internazionale delle sostanze umiche (ISHS) congress. 06-09 June 2017. Siracusa, Italy.
- *Recovery of energy and plant nutrients from Aflatoxin B1 contaminated corn through biological treatments.* D. Pezzolla, C. Tacconi, M. Cucina, C. Zadra, G. Gigliotti. Società Internazionale delle sostanze umiche (ISHS) congress. 06-09 June 2017. Siracusa, Italy.
- *Il ruolo dell'analisi elementare del C in soluzione nella valutazione di processi biotecnologici per il trattamento dei rifiuti.* M. Cucina. Oral presentation. Seminary: "Determinazione di CHNS: elementi

fondamentali nel laboratorio analitico". 30th May 2017. Mosciano Sant'Angelo (TE), Italy.

- *Ammendamento pluriennale con fanghi di depurazione di origine farmaceutica: influenza sulle proprietà chimiche e biochimiche del suolo.* M. Cucina, C. Tacconi, C. Zadra, S. Sordi, V. Piergianni, G. Gigliotti. Poster. Società Italiana della Chimica Agraria (SICA) congress, 2016. Perugia, Italy.
- *Ammendanti organici derivati da un rifiuto organico di origine farmaceutica: rischi e benefici.* M. Cucina, C. Tacconi, D. Pezzolla, C. Zadra, S. Sordi, G. Gigliotti. Poster. Società Italiana della Chimica Agraria (SICA) congress, 2016. Perugia, Italy.
- *Valutazione dell'attitudine al compostaggio di fanghi di depurazione di origine farmaceutica.* M. Cucina, C. Tacconi, D. Pezzolla, C. Zadra, S. Sordi, V. Piergianni, G. Gigliotti. Poster. Società Italiana della Chimica Agraria (SICA) congress, 2016. Perugia, Italy.
- *Valutazione della possibilità di recupero di mais contaminato da aflatoxina B1 attraverso la digestione anaerobica.* C. Tacconi, A. Sordi, D. Pezzolla, M. Cucina, C. Zadra, G. Gigliotti. Poster. Società Italiana della Chimica Agraria (SICA) congress, 2016. Perugia, Italy.
- *Assessing the aptitude of aflatoxin b1 contaminated corn to anaerobic digestion.* C. Tacconi, A. Sordi, M. Cucina, C. Zadra, G. Gigliotti. Poster. Società Internazionale delle Biotecnologie Ambientali (ISEB) international congress. 1-3 June 2016. Barcelona, Spain.
- *Assessing the composting aptitude of a pharmaceutical sludge.* M. Cucina, C. Tacconi, A. Sordi, C. Zadra, S. Sordi, G. Gigliotti. Poster. Società Internazionale delle Biotecnologie Ambientali (ISEB) international congress. 1-3 June 2016. Barcelona, Spain.
- *Agricultural reuse of the digestate from micro-algae anaerobic digestion and co-digestion with sewage sludge.* Solé M, Cucina M, Folch M, Tàpies J, Matamoros V, Garfi M, Ferrer I. Oral presentation. Società di riciclaggio di rifiuti urbani, agricoli e industriali in agricoltura (RAMIRAN) international congress. 8-10 September 2015. Hamburg, Germany.
- *Organic amendments derived from a pharmaceutical by-product: benefits and risks.* Gigliotti G., Cucina M., Zadra C., Pezzolla D., Sordi S., Marcotullio M.C., Curini M. Oral presentation. European Geosciences Union (EGU) congress, 2015. Wien, Austria.
- *Ottenimento di un ammendante compostato misto da sottoprodotti dell'Industria Farmaceutica: problematiche ed opportunità.* M. Cucina, C. Zadra, M. Marcotullio, M. Curini, G. Gigliotti. Oral presentation. Società Italiana della Chimica Agraria (SICA) congress, 2014. Bolzano, Italy.
- *Co-digestion of sewage sludge and organic fraction of municipal solid waste (OFMSW): analysis of biogas production and digestate and ingestate organic quality.* F. Di Maria, G. Gigliotti, A. Sordi, G. Cirulli, M. Cucina, L. Massaccesi. Oral presentation. BCD congress, 2013. Bari, Italy.
- *Caratterizzazione chimica del percolato e del digestato durante un processo di digestione anaerobica ibrida in batch (HSADB).* L. Massaccesi, A. Sordi, C. Micale, M. Cucina, C. Zadra, F. Di Maria, G. Gigliotti. Poster. Società Italiana della Chimica Agraria (SICA) congress, 2013. Bari, Italy.
- *Variazioni nelle caratteristiche chimiche della sostanza organica solubile in acqua durante un processo di digestione anaerobica allo stato solido in batch.* L. Massaccesi, A. Sordi, M. Cucina, C. Zadra, F. Di Maria, G. Gigliotti. Oral presentation. Società Italiana della Chimica Agraria (SICA) congress, 2012. Milano, Italy.

Contributes to congress and seminary as keynote speaker/invited speaker

- *Utilizo agronomico del biol.* M. Cucina. Keynote speech. XIV Encuentro de la RedBioLAC, Lima, Perú, 21-25 Noviembre 2022.

Articles in indexed scientific journals

- *Evaluating Compost from Digestate as a Peat Substitute in Nursery for Olive and Hazelnut Trees.* Calisti, R., Regni, L., Pezzolla, D., Cucina, M., Gigliotti, G., & Proietti, P. (2022). *Sustainability*, 15(1), 282.
- *Recovery of Energy and Nutrients from Mycotoxin-Contaminated Food Products through Biological Treatments in a Circular Economy Perspective: A Review.* Cucina, M., & Tacconi, C. (2022). *Agronomy*, 12(12), 3198.
- *Anaerobic digestion of organic waste allows recovering energy and enhancing the subsequent bioplastic degradation in soil.* G. Papa, M. Cucina, P. De Nisi, K. Echchoucki, F. Adani. (2023). *Resources, Conversation & Recycling*, 188, 106694.
- *Integration of anaerobic digestion and composting allows safety recovery of energy and nutrients from AFB1 contaminated corn.* Cucina, M., Tacconi, C., Gigliotti, G., & Zadra, C. (2022). *Journal of Environmental Chemical Engineering*, 108356.
- *Degradation of biodegradable bioplastics under thermophilic anaerobic digestion: A full-scale approach.* Cucina, M., Carlet, L., De Nisi, P., Somensi, C. A., Giordano, A., Adani, F. 2022. *Journal of Cleaner Production*, 133232.
- *Assessing the anaerobic degradability and the potential recovery of biomethane from different biodegradable bioplastics in a full-scale approach.* Cucina M, Soggia G, De Nisi P, Giordano A, Adani F. 2022. *Bioresource Technology* (354), 127224.
- *New Advances on Nutrients Recovery from Agro-Industrial and Livestock Wastes for Sustainable Farming.* Cucina M, Regni L. 2021. *Agronomy*. 11(11), 2308.
- *The Use of New Parameters to Optimize the Composting Process of Different Organic Wastes.* Pezzolla, D., Cucina, M., Proietti, P., Calisti, R., Regni, L., Gigliotti, G. (2021). *Agronomy*, 11(10), 2090.
- *Benefits and risks of agricultural reuse of digestates from plastic tubular digesters in Colombia.* Cucina, M., Castro, L., Escalante, H., Ferrer, I., Garfi, M. *Waste Management*, 2021, 134.
- *Degradation of bioplastics in organic waste by mesophilic anaerobic digestion, composting and soil incubation.* Cucina, M., De Nisi, P., Trombino, L., Tambone, F., Adani, F. *Waste Management*, 2021, 134, pp. 67-77
- *Anaerobic co-digestion of a lignocellulosic residue with different organic wastes: Relationship between biomethane yield, soluble organic matter and process stability.* Cucina, M., Pezzolla, D., Tacconi, C., Gigliotti, G. *Biomass and Bioenergy*, 2021, 153, 106209
- *The role of waste management in reducing bioplastics' leakage into the environment: A review.* Cucina, M., de Nisi, P., Tambone, F., Adani, F. *Bioresource Technology*, 2021, 337, 125459
- *Pretreatments for enhanced biomethane production from buckwheat hull: effects on organic matter degradation and process sustainability.* Mirko Cucina, Daniela Pezzolla, Chiara Tacconi, Giovanni Gigliotti. *Journal of Environmental Management* (2021) 285, 112098.
- *Environmental consequences of the treatment of corn contaminated by aflatoxin B1 with co-digestion and co-composting in a life cycle perspective.* Francesco Di Maria, Federico Sisani, Giovanni Gigliotti, Daniela Pezzolla, Chiara Tacconi, Mirko Cucina and Claudia Zadra. *Environmental Science and Pollution Research*, (2020). doi.org/10.1007/s11356-020-11372-0.
- *Benefits and risks of long-term recycling of pharmaceutical sewage sludge on agricultural soil.* Cucina,

- M., Ricci, A., Zadra, C., Pezzolla, D., Tacconi, C., Sordi, S., Gigliotti, G. *Science of The Total Environment*, (2019), 695, 133762.
- *Plant nutrients recovery from aflatoxin B1 contaminated corn through co-composting*. Tacconi, C., Cucina, M., Zadra, C., Gigliotti, G., Pezzolla, D. *Journal of Environmental Chemical Engineering*, (2019), 103046.
 - *Effect of the mycotoxin aflatoxin B1 on a semi-continuous anaerobic digestion process*. Tacconi, C., Cucina, M., Pezzolla, D., Zadra, C., Gigliotti, G. *Waste Management* 78 (2018), 468-473.
 - *Valorization of a pharmaceutical organic sludge through different composting treatments*. Cucina, M., Tacconi, C., Sordi, S., Pezzolla, D., Gigliotti, G., & Zadra, C. *Waste Management* 74 (2018), 203-212.
 - *Evaluation of benefits and risks associated with the agricultural use of organic wastes of pharmaceutical origin*. M. Cucina, C. Tacconi, A. Ricci, C. Zadra, S. Sordi, D. Pezzolla, G. Gigliotti. *Science of the Total Environment* 613-614 (2018), 773-782.
 - *Recovery of energy and plant nutrients from a pharmaceutical fermentative biomass: Integration of anaerobic digestion and composting*. M. Cucina, C. Zadra, M.C. Marcotullio, S. Sordi, M. Curini, G. Gigliotti. *Journal of Environmental Chemical Engineering* 5 (2017), 3051-3057.
 - *Assessing the agricultural reuse of digestates from microalgae anaerobic digestion and co-digestion with sewage sludge*. M. Solé, M. Cucina, M. Folch, J. Tapias, V. Matamoros, M. Garfì, G. Gigliotti, I. Ferrer. *Science of the Total Environment* 586 (2017), 1-9.
 - *Assessing the aptitude of aflatoxin B1 contaminated corn to anaerobic digestion*. C. Tacconi, A. Sordi, M. Cucina, C. Zadra, G. Gigliotti. International Society for Environmental Biotechnology, Proceedings of the 10th International Society for Environmental Biotechnology Conference; ISBN: 978-84-608-6277-2.
 - *Assessing the composting aptitude of a pharmaceutical sludge*. M. Cucina, C. Tacconi, A. Sordi, C. Zadra, S. Sordi, G. Gigliotti. International Society for Environmental Biotechnology, Proceedings of the 10th International Society for Environmental Biotechnology Conference; ISBN: 978-84-608-6277-2.
 - *Co-digestion of increasing amounts of fruit and vegetable waste in sludge digesters: chemical and spectroscopic investigation by fluorescence and fourier transform infrared spectroscopy*. Maria Rosaria Provenzano, Ornella Cavallo, Anna Daniela Malerba, Francesco Di Maria, Mirko Cucina, Luisa Massaccesi and Giovanni Gigliotti. *Waste Management* 50 (2016), 283-289.
 - *Co-treatment of fruit and vegetable waste in sludge digesters. An analysis of the relationship among bio-methane generation, process stability and digestate phytotoxicity*. Di Maria F, Sordi A, Cirulli G, Gigliotti G, Massaccesi L, Cucina M. *Waste Management* 34 (2014) 1603-1608.
 - *Chemical characterisation of percolate and digestate during the hybrid solid anaerobic digestion batch process*. L. Massaccesi, A. Sordi, C. Micale, M. Cucina, C. Zadra, F. Di Maria, G. Gigliotti. *Process Biochemistry* 48 (2013) 1361-1367.

Contributions and/or chapters in books

- *New Advances on Nutrients Recovery from Agro-Industrial and Livestock Wastes for Sustainable Farming*. Ed. Mirko Cucina, Luca Regni. Editor MDPI Agronomy, December 2021. ISBN 978-3-0365-2564-8.
- *Relazione botanica ambientale e chimica agraria*. G. Gigliotti, A. Ranfa, D. Pezzolla, A. Ricci, M. Cucina, L. Ruga. In "Monumento funerario della sacerdotessa Mamia a Pompei", pp. 99-106. Editore "L'Erma" di Bretschneider. ISBN: 9788891321831.

Technical reports - Technology transfer

- *Mass and energy balance of the on-farm pilots to WP5.* M. Cucina, F. Adani, X. You, J.M. de Gregorio, N. Guerra, M. Mora, L. Llenas, I. Sigurnjak, R. Vingerhoets, E. Meers, O. Schoumans, K. Van Dijk, N. Thevenin, L. Ruidavets, S. Schönfeld. FERTIMANURE H2020 project deliverable (D2.3) (June 2022).
- *Report on the nutrient imbalance analysis.* M. Cucina, F. Adani, M. Zilio, A. Herrera. FERTIMANURE H2020 project deliverable (D1.4) (January 2021).
- *BBFs production and characterization vs. time (list, average composition and composition variability).* M. Cucina, F. Adani. FERTIMANURE H2020 project deliverable (D2.2) (December 2020).
- *Process and technologies specification and set up to produce BBFs from animal manure.* M. Cucina, F. Adani. FERTIMANURE H2020 project deliverable (D2.1) (December 2020).

Editing activity for international journals

- Topic editor for Agronomy
- Guest editor for Agronomy (Special Issue "New Advances on Nutrients Recovery from Agro-industrial and Livestock Wastes for Sustainable Farming", 2021)
- Guest editor for Recycling (Special Issue "Waste bioplastics in sustainable development", 2022)
- Guest editor for Sustainability (Special Issue "Anaerobic Digestion Advances in Bioresource Technology under the Circular Economy Framework", 2023)

Reviewer activity for international journals

- Waste Management (Elsevier, ISSN: 0956-053X)
- Bioresource Technology (Elsevier, ISSN: 0960-8524)
- Journal of Environmental Management (Elsevier, ISSN: 0301-4797)
- Toxins (MDPI; ISSN: 2072-6651)
- Journal of Fungi (MDPI; ISSN: 2309-608X)
- Agronomy (MDPI; ISSN: 2073-4395)
- Plants (MDPI; ISSN: 2223-7747)
- Horticulture (MDPI; ISSN: 2311-7524)
- Water (MDPI; ISSN: 2073-4441)
- Journal of Agronomy Research (OpenAccessPub, ISSN: 2639-3166)

- Waste and Biomass Valorization (Springer; ISSN: 1877-265X)
- Journal of Hazardous Materials Advances (Elsevier; ISSN: 2772-4166)

Support to teaching activity at University

- Teaching support for the teaching of “Agricultural and environmental chemistry” at the Agricultural, Environmental and Food Department (University of Perugia). Head of the course: Prof. Giovanni Gigliotti. (October 2019 - December 2019);
- Teaching support for the teaching of “Environmental Engineering: reclamation of polluted sites” at the Environmental and Civil Engineering Department (University of Perugia). Head of the course: Prof. Giovanni Gigliotti. (February 2019 - May 2019);
- Teaching support for the teaching of “Agricultural and environmental chemistry” at the Agricultural, Environmental and Food Department (University of Perugia). Head of the course: Prof. Giovanni Gigliotti, Prof. Daniela Pezzolla. (October 2018 - December 2018);
- Teaching support for the teaching of “Agricultural and environmental chemistry” at the Agricultural, Environmental and Food Department (University of Perugia). Head of the course: Prof. Giovanni Gigliotti, Prof. Daniela Pezzolla. (October 2017 - December 2017);
- Teaching support for the teaching of “Agricultural and environmental chemistry” at the Agricultural, Environmental and Food Department (University of Perugia). Head of the course: Prof. Giovanni Gigliotti. (October 2016 - December 2016).
- Tutoring activity for students and graduating students. Tutoring activity for thesis and master thesis production at the Environmental and Civil Engineering Department (University of Perugia).

Supervisor or co-supervisor of thesis and master thesis

- “Improving the circularity of biodegradable bioplastics by producing biogas: a full-scale assessment”. Academic year: 2021-2022. Candidate: Gabriele Soggia. Master’s degree: Biotechnology for Bioeconomy (University of Milan). Supervisor: Prof. Fabrizio Adani. Co-supervisor: Dr. Mirko Cucina.
- “Degradation of three commercial biodegradable bioplastics under thermophilic anaerobic digestion: a full-scale approach”. Academic year: 2020-2021. Candidate: Lara Carlet. Master’s degree: Biotechnology for Bioeconomy (University of Milan). Supervisor: Prof. Fabrizio Adani. Co-supervisor: Dr. Mirko Cucina.
- “La co-digestione anaerobica della crusca di grano saraceno: valutazione dei parametri di processo”. Academic year: 2017-2018. Candidate: Lorenzo Cocciaglia. Master Degree: Sustainable development (University of Perugia). Supervisor: Prof. Giovanni Gigliotti. Co-supervisor: Dr. Mirko Cucina, Dr. Daniela Pezzolla.
- “La co-digestione anaerobica della crusca di grano saraceno: rese di biometanazione”. Academic year: 2015-2016. Candidate: Attilio Bonanno. Degree: Agricultural sciences (University of Perugia). Supervisor: Prof. Giovanni Gigliotti. Co-supervisor: Dr. Mirko Cucina.
- “Compostaggio di sottoprodotti della filiera olivicola ed olearia”. Academic year: 2013-2014. Candidate: Giulia Appolloni. Master degree: Sustainable development (University of Perugia). Supervisor: Prof. Giovanni Gigliotti. Co-supervisor: Dr. Mirko Cucina, Dr. Luigi Nasini.

Other achievements

- National Scientific qualification as associate in the Italian higher education system, in the call 2021/2023 (Ministerial Decree n. 553/2021 and 589/2021) for the disciplinary field of 07/E1 - Agricultural chemistry, agricultural genetics and pedology) achieved on May the 30th 2022
- Member of the Network for Biodigesters in Latin America and the Caribbean (RedBioLAC) (www.redbiolac.org)
- Member of the Working Group “How to improve the technology and management of low-tech anaerobic digesters” of the International Water Association (IWA)
- Member of the organizing committee of the national conference of Società Italiana di Chimica Agraria (SICA 2016), Perugia, Italy

Perugia, February the 6th 2023

Dr. Mirko Cucina

