

# CURRICULUM VITAE

## PERSONAL INFORMATION

<b>First name</b>	FRANCESCA
<b>Surname</b>	GIROTTO
<b>Gender</b>	Female
<b>Nationality</b>	Italian
<b>Date of birth</b>	10/07/1989

## Education

- January 15<sup>th</sup>, 2018 - August 14<sup>th</sup>, 2018 – **Research Fellow** at the University of Padova, Department of Civil, Environmental and Architectural Engineering. The research title is 'Recupero di scarti alimentari come feedstock per produzione di biopolimeri'-'Food waste recycling as a bio-polymer production feedstock'.
- 2014 - 2018 – **Ph.D. candidate** in Industrial Engineering (Curriculum Chemistry and Environment) at the University of Padova. The title of my thesis is *Food waste to bio-energy through anaerobic digestion under different management scenarios*. Defense date: April 6<sup>th</sup>, 2018.
- 2011 - 2014 – **Second Cycle Degree** Program in Environmental Engineering at the University of Padova with achievement of the Master degree with final grade 110/110 cum laude. Graduation date: April 3<sup>rd</sup>, 2014.
- 2008 - 2011 – **First Cycle Degree** Program in Environmental Engineering at the University of Padova with achievement of the Bachelor's degree with final grade 110/110 cum laude. Graduation date: September 27<sup>th</sup>, 2011.
- 2003 - 2008 – **Scientific High School** at the Lyceum G.B. Ferrari of Este (PD) with achievement of the Diploma with final grade 100/100.

## Period of time abroad during the University studies

I was Visiting Researcher at the School of Environment, **Tsinghua University** (Beijing, China) from November 2015 to January 2016.

Topic of the research was the study of short-term pre-aeration effect on waste degradation in simulated landfill bioreactors.

I was Visiting Researcher at the **St. John's College** and **HK Polytechnic University** (Hong Kong, China) from May 2015 to June 2015. I joined the laboratory activities in the Environmental Engineering Department of the Polytechnic University. I was helping the other PhD students in the daily operation and maintenance of two anaerobic digesters. In particular our tasks were: gas sampling, liquid sampling and evaluation of pH, VFA, COD, TS, VS. They were running this project in order to assess the possibility to operate a co-digestion of horse manure and sewage sludges (one coming from a WWTP dealing with the salted wastewater of flushing toilets).

I was Visiting Student at **Fukuoka University** Environmental Engineering laboratory (Japan) from September 2013 to March 2014 with a project on "Ammonia Removal in Wastewater by Calcium Polymer (Ca-P) from Disposable Diapers Recycling System". My Master's Thesis, "*De-incineration of Adult disposable diapers*", was completed there and the topic was connected with the above mentioned research.

## List of publications

### Scientific Papers

1. Removal of ammonia using Ca-P (calcium polymer) from wastewaters produced in the recycling of disposable diapers. Girotto F., Matsufuji Y., Tanaka A. *Journal of Material Cycles and Waste Management* (2015), 1-7. Springer.  
doi: 10.1007/s10163-015-0420-9
2. Food waste generation and industrial uses: A review. Girotto F., Alibardi L., Cossu R. *Waste Management* (2015), 45, 32-41. Elsevier.  
doi: 10.1016/j.wasman.2015.06.008
3. Targeted modification of organic components of municipal solid waste by short-term pre-aeration and its enhancement on anaerobic degradation in simulated landfill bioreactors. Ni Z., Liu J, Girotto F., Cossu R., Qi G. *Bioresource Technology* (2016), 216, 250-259. Elsevier.  
doi:10.1016/j.biortech.2016.05.088
4. Effect of aeration applied during different phases of anaerobic digestion - a review. Girotto F., Peng W., Rafieenia R., Cossu R. *Waste And Biomass Valorization* (2016), 1-14. Springer.  
doi: 10.1007/s12649-016-9785-9
5. Effect of aerobic pre-treatment on hydrogen and methane production in a two-stage anaerobic digestion process using food waste with different compositions. Rafieenia R., Girotto F., Peng W., Cossu R., Pivato A., Raga R., Lavagnolo M.C. *Waste Management* (2017), 59, 194-199. Elsevier.  
doi: 10.1016/j.wasman.2016.10.028
6. Anaerobic digestion of lipid-extracted microalgae: enhancing nutrient recovery towards a closed loop recycling. Sforza E., Barbera E., Girotto F., Cossu R., Bertucco A. *Biochemical Engineering Journal* (2017), 121, 139-146. Elsevier.  
doi: 10.1016/j.bej.2017.02.004
7. Lab-scale co-digestion of kitchen waste and brown water for a preliminary performance evaluation of a decentralized waste and wastewater management. Lavagnolo M.C., Girotto F., Hirata O., Cossu R. *Waste Management* (2017), 66, 155-160. Elsevier.  
doi: 10.1016/j.wasman.2017.05.005
8. The broad spectrum of possibilities for Spent Coffee Grounds valorisation. Girotto F., Pivato A., Cossu R., Nkeng G.E., Lavagnolo M.C. *Journal of Material Cycles and Waste Management* (2017), 1-7. Springer.  
doi:10.1007/s10163-017-0621-5
9. Spent Coffee Grounds alkaline pre-treatment as biorefinery option to enhance their anaerobic digestion yield. Girotto F., Lavagnolo M.C., Pivato A. *Waste Biomass and Valorization* (2017), 1-6. Springer.  
doi: 10.1007/s12649-017-0033-8
10. PLASMIX management: LCA of six possible scenarios. Cossu R., Garbo F., Girotto F., Simion F., Pivato A. *Waste Management* (2017), 69, 567-576. Elsevier.  
doi: 10.1016/j.wasman.2017.08.007
11. Acidogenic fermentation of the organic fraction of municipal solid waste and cheese whey for bio-plastic precursors recovery - Effects of process conditions during batch tests. Girotto F., Lavagnolo M.C., Pivato A., Cossu R. *Waste Management* (2017), 70, 71-80. Elsevier.  
doi: 10.1016/j.wasman.2017.09.015
12. Animal waste and waste animal by-products generated along the livestock breeding and meat food chain. Girotto F., Cossu C.A. *Waste Management* (2017), 70, 1-2. Elsevier.  
doi: 10.1016/j.wasman.2017.04.040
13. Two-stage anaerobic digestion of the organic fraction of municipal solid waste - Effects of process conditions during batch tests. Lavagnolo M.C., Girotto F., Rafieenia R., Danieli L., Alibardi L. *Renewable Energy* (2018), 126, 14-20. Elsevier.  
doi: 10.1016/j.renene.2018.03.039
14. Estimation of global warming emissions in waste incineration and landfilling: an environmental forensic case study. Pivato A., Girotto F., Megido L., Raga R. *Environmental Forensics* (2018). Taylor & Francis.  
doi: 10.1080/15275922.2018.1519741

### **Book chapters**

15. Management Options of Food Waste: A Review. Girotto F., Alibardi L., Cossu R. *Biological Treatment of Solid Waste: Enhancing Sustainability* (2015), chapter 1 (pp. 3-21). Apple Academic Press.

doi: 10.1201/b18872-3

16. Animal Waste: opportunities and challenges. Girotto F., Cossu R. *Sustainable Agriculture Reviews* (2017), 22, chapter 1 (pp. 1-13). Springer International Publishing.

doi: 10.1007/978-3-319-48006-0\_1

17. Valorization of residues from beverage production. Kusch, S., Mumme, J., Nashalian, O., Girotto F., Lavagnolo, M.C., Udenigwe, C. *Processing and Sustainability of Beverages* (2019), chapter 13. Elsevier.

doi: 10.1016/B978-0-12-815259-1.00013-6

### **Books Reviews**

18. Waste biorefinery: potentials and perspectives. Girotto F. *Detritus* (2018), 02, III-IV. Cisa Publisher.

doi: 10.31025/2611-4135/2018.13671

### **Conference proceedings**

1. Urban mining concept applied to Industrial Waste. Cossu R., Girotto F., Niero L. 4<sup>th</sup> International Conference on Industrial and Hazardous Waste Management - CRETE 2014 – September 2nd-5th, 2014 – Crete, Greece.
2. Management options of food waste – A Review. Girotto F., Alibardi L., Cossu R. 2nd Symposium on Urban Mining - 2nd SUM 2014 – May 19th-21st, 2014 – Bergamo, Italy.
3. Ammonia Removal in Wastewater by Ca-P (Calcium Polymer) from Disposable Diapers Recycling System. Girotto F., Matsufuji Y., Tanaka A. Civil Engineering Meeting by the Japan Society of Civil Engineers – JSCE – March 8th, 2014 – Fukuoka, Japan.
4. Ammonia Removal in Wastewater by Ca-P (Calcium Polymer) from Disposable Diapers Recycling System. Girotto F., Matsufuji Y., Tanaka A. 2nd Symposium of International Waste Working Group Asian Regional Branch (IWWG-ARB) – April 13th-14th, 2015 – Shanghai, China.
5. Dagli scarti del cibo alle bioplastiche. Girotto F., Cossu R., Lavagnolo M.C. EXPO Days 2015: Per un'agricoltura sostenibile – March 25th, 2015 – Giardino della Biodiversità's conference room, Padova.
6. Ammonia Removal in Wastewater by Ca-P (calcium polymer from Disposable Diapers Recycling System. Girotto F., Matsufuji Y., Tanaka A. 2nd Symposium of International Waste Working Group Asian Regional Branch (IWWG-ARB) – April 13th-14th, 2015 – Siping Road Campus of Tongji University, Shanghai, China.
7. Management options of Food Waste – A Review. Girotto F., Alibardi L., Cossu R. 12th IWA leading edge conference on water and wastewater technologies – May 3rd-June 31st, 2015 – Science and Technology Parks, Hong Kong, China.
8. Food Waste Management: A Review. Girotto F., Alibardi L., Cossu R. SARDINIA 2015 - 15th International Waste management and Landfill Symposium – October 5th-9th, 2015 – Forte Village, S. Margherita di Pula, Italy.
9. Animal Waste: opportunities and challenges. Girotto F., Cossu R. SARDINIA 2015 - 15th International Waste management and Landfill Symposium – October 5th-9th, 2015 – Forte Village, S. Margherita di Pula, Italy.
10. New Horizons in Food Waste Management. Girotto F. FW Workshop – January 9th, 2016. Changzhou, China.

11. Hydrogen production from selected food waste fractions. Alibardi L., Cossu R., Girotto F. SUM 2016 - Third Symposium on Urban Mining and Circular Economy – May 23rd-25th, 2016 – Bergamo, Italy.
12. Stato dell'arte sulla gestione del rifiuto alimentare. Girotto F., Alibardi L., Cossu R. SUM 2016 - Third Symposium on Urban Mining and Circular Economy – May 23rd-25th, 2016 – Bergamo, Italy.
13. Recycle of adult diapers as adsorbent in Ammonia Removal from wastewater. Girotto F., Cossu R. SUM 2016 - Third Symposium on Urban Mining and Circular Economy – May 23rd-25th, 2016 – Bergamo, Italy.
14. Aeration as a pre-treatment step in anaerobic digestion. Girotto F., Cossu R. SIDISA 2016 – X International Symposium on Sanitary and Environmental Engineering – June 20st-23rd, 2016 – Rome, Italy.
15. Effect of pre-aeration in a two-stage AD process. Rafieenia R., Girotto F., Peng W., Cossu R. VENICE 2016 - 6th International Symposium on Energy from Biomass and Waste – November 14th-17th, 2016 – Venice, Italy.
16. Effect of aeration on AD – a review. Girotto F., Peng W., Rafieenia R., Cossu R. VENICE 2016 - 6th International Symposium on Energy from Biomass and Waste – November 14th-17th, 2016 – Venice, Italy.
17. Energy from spent coffee grounds. Girotto F., Lavagnolo M.C. VENICE 2016 - 6th International Symposium on Energy from Biomass and Waste – November 14th-17th, 2016 – Venice, Italy.
18. Lab scale co-digestion of brown water and kitchen waste. Lavagnolo M.C., Girotto F., Cossu R. VENICE 2016 - 6th International Symposium on Energy from Biomass and Waste – November 14th-17th, 2016 – Venice, Italy.
19. Valorization of Spent Coffee Grounds as an energy source. Girotto F., Lavagnolo M.C. WasteSafe 2017 - 5th International Conference on Solid Waste Management in South Asian Countries – February 25th-27th, 2017 – Khulna, Bangladesh.
20. How to consider the role of landfills as carbon sink in environmental forensic cases. Pivato A., Raga R., Girotto F., Megido L. SARDINIA 2017 - 16th International Waste management and Landfill Symposium – October 2nd-6th, 2017 – Forte Village, S. Margherita di Pula, Italy.
21. Bio-plastic precursors recovered through acidogenic fermentation of food waste and cheese whey. Girotto F., Cossu R., Lavagnolo M.C. SARDINIA 2017 - 16th International Waste management and Landfill Symposium – October 2nd-6th, 2017 – Forte Village, S. Margherita di Pula, Italy.
22. Bioraffineria: valorizzazione degli scarti organici per produrre bioplastiche. Girotto F., Lavagnolo M.C., Alberto P. Bio2Energy: un progetto di bioeconomia – November 30th, 2017 – Polo Universitario “Città di Prato”, Prato, Italy.
23. Bio-energy and bio-materials production through a sustainable food waste management. Girotto F., Lavagnolo M.C., Cossu R. SUM 2018 - Fourth Symposium on Urban Mining and Circular Economy – May 21st-23rd, 2018 – Bergamo, Italy.
24. La trasformazione dello scarto di cibo in nuova energia e nuove materie ecocompatibili. Girotto F., Lavagnolo M.C. NEMES 2018 - Non è magia, è Scienza - September 27th-28th, 2018 – Padova, Italy.
25. The role of landfill as a carbon sink for the estimation of global warming emissions in waste management: an environmental forensic case study. Pivato A., Girotto F. TVF 2018 - Second Technical Seminar on Forensic Engineering - September 26th-28th, 2018 - Mogliano Veneto, Italy.
26. Bio-based plastics: a review. Girotto F. VENICE 2018 - 7th International Symposium on Energy from Biomass and Waste – October 15th-18th, 2018 – Venice, Italy.

## Poster presentations

1. Sustainable new system of resource recovery from disposable diapers using leachate for dehydration. Matsufuji, Y., Tachifuji, A., Tateishi S., Girotto F. SARDINIA 2015 - 15th International Waste management and Landfill Symposium – October 5th-9th, 2015 – Forte Village, S. Margherita di Pula, Italy.

## Work experience

From 25/07/2018 I work as Managing Editor for the 'Detritus' journal in Padova. 'Detritus' is a multidisciplinary journal for waste resources and residues.

During the Academic Year 2017/2018 I was responsible for 40 hours of tutoring activity for the environmental engineering students (master and bachelor) of the University of Padova and I won the contract of 12 hours teaching support for the course *Environmental Project Work* (this course belongs to the second year study plan of the Second Cycle Degree Program in Environmental Engineering at the University of Padova).

During the Academic Year 2016/2017 I was responsible for 35 hours of tutoring activity for the environmental engineering students (master and bachelor) of the University of Padova and I won the contract of 10 hours teaching support for the course *Environmental Project Work* (this course belongs to the second year study plan of the Second Cycle Degree Program in Environmental Engineering at the University of Padova).

I was a member of the Scientific Secretariat for the conferences SARDINIA 2015 (15<sup>th</sup> International Waste management and Landfill Symposium – October 5<sup>th</sup>-9<sup>th</sup>, 2015 – Forte Village, S. Margherita di Pula, Italy); SUM 2016 (Third Symposium on Urban Mining and Circular Economy – May 23<sup>rd</sup>-25<sup>th</sup>, 2016 – Bergamo, Italy), and SARDINIA 2017 (16<sup>th</sup> International Waste management and Landfill Symposium – October 2<sup>nd</sup>-6<sup>th</sup>, 2017 – Forte Village, S. Margherita di Pula, Italy).

From 16/06/2014 to 12/11/2014 I worked as Managing Editor for the 'Waste Management' journal in Padova. 'Waste Management' is an international journal devoted to the presentation and discussion of information on the generation, prevention, characterization, monitoring, treatment, handling, reuse and ultimate residual disposition of solid wastes, both in industrialized and in economically developing countries. I learned how to handle and manage many situations and aspects of the editorial processes from the submission of a paper to its publication. Moreover I am still in charge of writing the Journal's column called 'A glance at the world'. The column 'A glance at the world' deals with short articles about researches and studies of minor interest but still deserving a space in the waste management field.

From 09/05/2011 to 16/07/2011 I did an internship training at the company S.E.S.A. SpA in Este (PD). The company was established in 1995 and it provides services of collection, transportation and disposal of waste and planning, construction, operation and development of plants. The company is currently involved in the development of environmental technologies for waste recovery and recycling with energy production. My task was to collaborate with the technical staff in their project works about waste collection, treatment and disposal.

## Awards

The paper 'Valorization of Spent Coffee Grounds as an energy source' by F. Giroto and M.C. Lavagnolo was selected as "Dr. Md. Haranur Rashid Best Paper Award" positioned as second in the Conference "WasteSafe2017 - 5th International Conference on Solid Waste Management in South Asian Countries" – February 25th-27th, 2017 – Khulna, Bangladesh.

The poster 'Sustainable new system of resource recovery from disposable diapers using leachate for dehydration' by Y. Matsufuji, A. Tachifuji, S. Tateishi, F. Giroto was awarded as *Best Poster* at the Conference "SARDINIA 2015 - 15th International Waste management and Landfill Symposium" – October 5th-9th, 2015 – Forte Village, S. Margherita di Pula, Italy.

The paper 'Ammonia Removal in Wastewater by Ca-P (Calcium Polymer) from Disposable Diapers Recycling System' by F. Giroto, Y. Matsufuji, A. Tanaka was awarded with "*Award for Excellent presentation*" at the Conference "Civil Engineering Meeting" organized by the 'Japan Society of Civil Engineers – JSCE" held in Fukuoka the 8<sup>th</sup> of March 2014.

I have been assigned the national annual scholarships from 'Istituto nazionale di previdenza e assistenza per i dipendenti dell'amministrazione pubblica – INPDAP' for academic performance during all the university years (bachelor 2008-2009, 2009-2010, 2010-2011; and master 2011-2012, 2012-2013).

In 2008 I received the "*Certificate of Excellent Student*" from Este Municipality (PD).

## Foreign languages

English: excellent knowledge (in 2008 I obtained the First English Certificate attesting my competence at level B2).

I attended a Spanish language course (November 2014 – April 2015; 40h). I have no official certification attesting my level of knowledge but I practice my Spanish skills with mother tongue friends almost daily. I can well manage a non-technical conversation.

During my staying in Fukuoka University I developed a basic competence in spoken Japanese.

Declarations given in the present curriculum must be considered released according to art. 46 and 47 of DPR n. 445/2000.

The present curriculum does not contain confidential and legal information according to art. 4, paragraph 1, points d) and e) of D.Lgs. 30.06.2003 n. 196.

Place and date: Padova, November 8<sup>th</sup>, 2018

SIGNATURE

