

PERSONAL INFORMATION

Barbara RUFFINO

Place and date of birth: Giaveno (TO), June 9th, 1977

Nationality: Italian

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CURRENT POSITION

04/2018 → **Associate Professor** (Professore Associato, L240) of Environmental Sanitary Engineering (ICAR-03), Department of Environment, Land and Infrastructure Engineering (DIATI), Politecnico di Torino, Italy

PREVIOUS POSITIONS AND EDUCATION

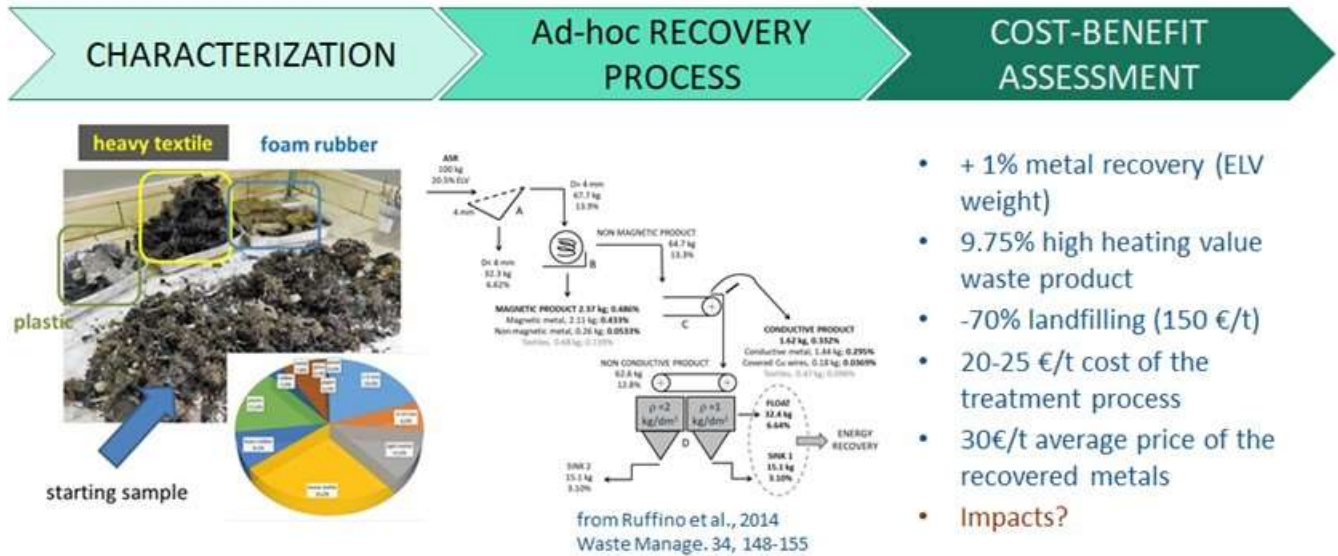
- 08-09/2019, Visiting Professor, Universidad Adolfo Ibañez, Santiago de Chile (Chile), in the framework of the project MSCA RISE – “REMIND”, Renewable Energies for Water Treatment and Reuse in Mining Industries
- 10/2011 - 03/2018, Assistant Professor of Environmental Sanitary Engineering (ICAR-03), Department of Environment, Land and Infrastructure Engineering (DIATI, formerly DITAG), Politecnico di Torino, Italy
- 09-12/2015, Visiting Scholar, Department of Civil and Environmental Engineering, University of Washington, Seattle (USA)
- 01-10/2011, State Officer, Area of Sustainable Development and Environmental Planning, Provincia di Torino, Italy
- 03/2006 – 12/2010, Post-doctoral fellow, Department of Land, Environment and Geo-Engineering (DITAG, formerly DIGET), Politecnico di Torino, Italy
- 05/2006, PhD in Geo-Environmental Engineering, Politecnico di Torino, Italy
- 01/2003 – 12/2005, PhD candidate, Department of Land, Environment and Geo-Engineering (DITAG, formerly DIGET), Politecnico di Torino, Italy
- 05-12/2002, Research fellow, Department of Geo-resources and Land (DIGET), Politecnico di Torino, Italy
- 03/2002, M.Sc. in Environmental Engineering, *cum laude*, Politecnico di Torino, Italy

RESEARCH INTERESTS

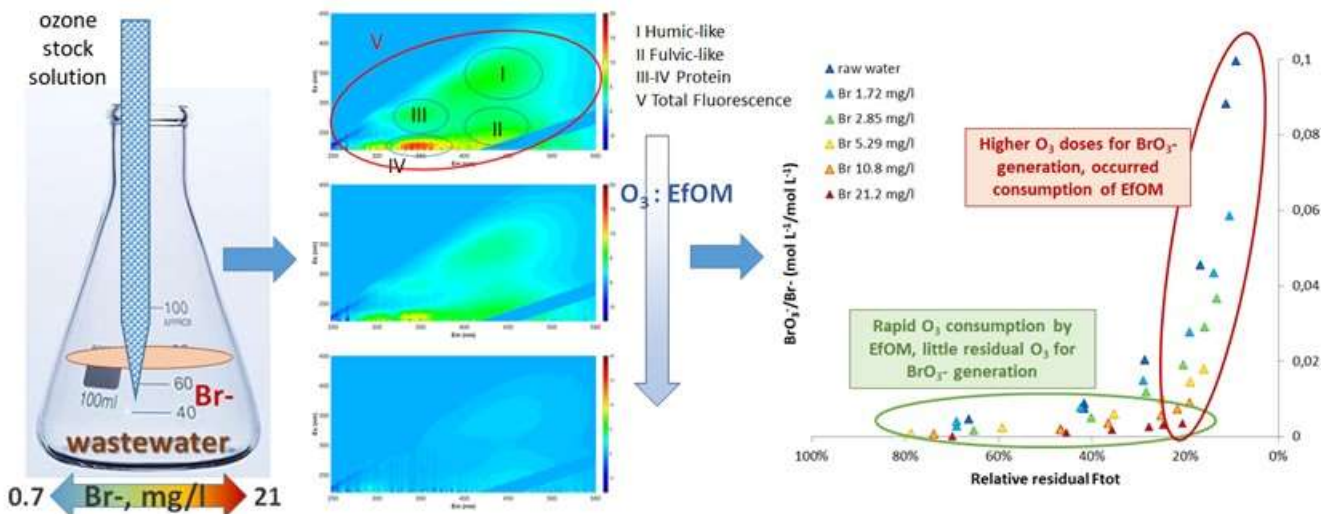
1. Sewage sludge management: treatments and valorization

2. Anaerobic digestion of waste products and biomasses

3. Valorization of industrial waste products (foundry waste, finishing waste, paint sludge, end-of-life tires, automobile shredder residues, ...)



4. Advanced oxidation processes for WW treatment, by-products monitoring



5. Water saving and reuse

PROFESSIONAL EXPERIENCE

1. Supervision

2011 → Co-supervisor of 2 Ph.D. students, Borzooei S. (2015-17) and Campo G. (2016-18), and of 6 research fellows, Campo G. (2013-15 and 2019-present), Cedrino A. (2011-13), Cerutti A. (2015-present), Gallarato E. (2017), Minardi M. (2020-present), Roati C. (2011-13).

2. Current teaching activities

2015 → Instructor: Description of the Environmental Mechanisms in the framework of the LCIA (Life Cycle Impact Assessment), Ph.D. level course, Politecnico di Torino

2017/18 → Instructor: Environmental Solutions for Production Sites (Tecnologie Ambientali dei Siti Produttivi, in Italian), bachelor level course, Politecnico di Torino

2015/16 → Co-instructor: Applied Environmental Engineering (Water and Wastewater Treatment module), master level course, Politecnico di Torino

2017/18 → Co-instructor: Resources and Environmental Sustainability (Environmental and Circular Economy module), master level course, Politecnico di Torino

3. Institutional responsibilities

2014 → Member (2019) or adjunct member (2014, 2016, 2018, 2020) of the local Committee for the Italian State Examination for the qualification to the profession of Civil-Environmental Engineer

2017 → Member of the Senior Staff and co-founder of the CleanWaterCenter@PoliTO, <http://cleanwater.polito.it/>

2011 → Senior Researcher at the Environmental Chemistry Lab, DIATI, Politecnico di Torino

10/2015 – 9/2019, Member of the Economy Board (“Giunta”) of the Department of Environment, Land and Infrastructure Engineering (DIATI) at Politecnico di Torino

07/2015, Local scorer for the Italian ANVUR TECO test 2015 (PoliTO leading scorer prof. A. Tabacco)

4. Organization of scientific meetings, editorial and other services

2015 → Member of the Scientific Committee of the International Conferences on Sustainable Solid Waste Management (TINOS 2015, CYPRUS 2016, ATHENS 2017, NAXOS 2018, HERAKLION 2019, THESSALONIKI 2021) organized by the National Technical University of Athens, <http://thessaloniki2021.uest.gr/index.php/en/>

2020 → Member of the Organizing Committee of SIDISA 2021, International Symposium on Environmental Sanitary Engineering, <https://www.sidisa2020.it/>

2020 → Member of the Editorial Board of the “International Journal of Environmental Research and Public Health”, MDPI (IF2019: 2.849), https://www.mdpi.com/journal/ijerph/sectioneditors/Environmental_Chemistry_Technology

2019 → Guest Editor of the special issue “Sewage Sludge Treatment and Reuse” in “Water”, MDPI (IF2019: 2.544; 5 published papers), https://www.mdpi.com/journal/water/special_issues/sewage_sludge_treatment

2019 → Member of the Reviewer Board of “Water”, MDPI (IF2019: 2.544) and “Sustainability”, MDPI (IF2019: 2.576)

2008 → Reviewer for approx. 240 papers for 65 international journals (Elsevier, Springer, Wiley, MDPI, Tylor and Francis).

2016 → Recognition of outstanding reviewer for the Elsevier Journals: Bioresource Technology (achieved 05/2017), Building Engineering (01/2017), Chemical Engineering Journal (12/2016), Journal Cleaner production (11/2016), Journal of Environmental Management (03/2018), Renewable & Sustainable Energy Reviews (10/2018), Waste Management (04/2017), Water Research (11/2017).

2019, Top peer reviewer, awarded by Publons on 17/09/2019, for placing in the top 1% of reviewers in Cross-Field on Publons global reviewer database (2018-19)

2018, Reviewer for the Chilean National Commission for Scientific and Technological Research (CONICYT) for 2018 FONDECYT Initiation into Research Program.

11/2019 – 05/2020, Public Prosecutor’s Office of Aosta, expert advice to Judge Dr. Eugenia Menichetti for case 459/2019.

5. Patents

Ruffino B., Zanetti M.C., “Enhanced ozonation of wastewater containing high loads of ammonia nitrogen”, application number 102016000093129, filed 15/09/2016

Zanetti M.C., Santagata E., Ruffino B., Dalmazzo D., Gaido G., “Process for the production of a modified binder by the use of paint sludge”, application number 102015000031447, filed 7/07/2015

6. Grants and contracts

Principal Investigator of the Projects

- Proof of Concept (PoC) project, for the improvement of the TRL of the Patent (Application number 102016000093129, filed 15/09/2016) concerning the “Enhanced ozonation of wastewater containing high loads of ammonia nitrogen”, funded by Compagnia di San Paolo (6 months, 9/2017 – 2/2018)
- Collaboration Agreement (after a peer-review process) between FCA and Politecnico di Torino, in the framework of the Automotive Engineering course, for the project “Circular Economy for Recovery and Recycling of Car Materials” (12 months, 1-12/2017)
- PoliTO project for the improvement of teaching activities in PoliTO departments: “Up-grading of classrooms and computer labs in DIATI department” (2016)

Task Leader of the Research Projects

- POR FESR 2014/2020 – RECIPLAST Project, "appRoccio all'Economia Circolare per il riciclo di imballi e componenti auto fine vita in PLastica" (36 months, 7/2019 – 6/2022) funded by Regione Piemonte through Azione I.1b.2.2. Piattaforma tecnologica Bioeconomia bando per agevolazioni a sostegno di progetti di ricerca industriale e/o sviluppo sperimentale presentati negli ambiti della Bioeconomia. Project Leader GARBO s.r.l.
- H2020-MSCA-RISE-2018 “REMIND” Project, PN 823948, Renewable Energies for Water Treatment and Reuse in Mining Industries (48 months, 11/2018 - 10/2022)

- FESR 2014-20 - GREENFACTORY4COMPO Project (36 months, 11/2016 – 10/2019), funded by Regione Piemonte through the European Commission, Project Leader: CRF, Centro Ricerche Fiat.
- BANDO MATTM - LIFE10 ENV/IT/000390 - Development and implementation of innovative and sustainable technologies for the use of scrap tyre rubber in road pavements - Tyrec4Life (14 months, 1/10/2015 – 30/11/2016), Project Leader: Città Metropolitana di Torino.
- POR-FESR 2007/13, SAFEFOOD CONTROL Project, “Development of innovative systems and technologies for production, preserving, transformation and valorization of high-quality fruit and vegetables from Piemonte region” (36 months, 1/10/2010 – 30/9/2013) funded by European Commission through Regione Piemonte, Project Leader Agroinnova, Università di Torino.
- LIFE10ENV/IT/000390 - Tyrec4Life Project, “Development of innovative techniques to improve the efficiency of the employment of crumb rubber from ELVs in road pavements” (36+12 months, 1/09/2011 – 31/08/2015), Project Leader: Provincia di Torino.
- COFIN - PRIN 2011 (2009J4EAC3_002, 24 months, 10/2011 – 10/2013): “Life cycle risk analysis of recycled waste products in road pavements”.

Participant in the Research Projects

- MAECI Research Project ITALIA-INDIA (PGR00836) “Integrated methods for the monitoring of soil bioremediation” (36 months, 2017-2019), in collaboration with CSIR-NEERI - Water Technology and Management Division, Nehru Marg., Nagpur-440020 (Maharashtra) – India.
- COFIN - PRIN 2006, “Criteria and Tools for Environmental and Functional Recovery of Polluted Sites” (24 months, 7/2006-6/2008).
- COFIN - PRIN 2004, “Application of Emerging Technologies for Monitoring and Remediation of Polluted Sites” (24 months, 7/2004 – 6/2006).
- COFIN – PRIN 2001, “Disinfection and oxidation aimed at potabilization and wastewater reuse: by-product generation and bacterial growth phenomena” (24 months, 7/2002 – 6/2004).

➤ Scientific responsibility of National and International research projects, ruled through partnership agreements with companies and/or public private bodies, which are leaders in their own sector

Principal Investigator of the research contract

- “Assessment of the efficacy of the process named “Natura System”, funded by Perpulire s.r.l., 2017.

Leader of a Research Unit for the research contracts

- “Optimization of the anaerobic digestion of sewage sludge from WWTPs using several types of pretreatments”, funded by SMAT S.p.A., 2012-ongoing.
- “Evaluation of the technical suitability of a WWTP to achieve the expected treatment objectives and its level of sustainability” funded by Syndial S.p.A., 2019.
- “Optimization of the winery's WTP”, funded by F.lli Gancia & C. S.p.A., 2018.
- “Research of the best operating conditions for the ozonation of wastewater containing ammonia”, funded by SODAI Italia S.p.A., 2015.
- “Assessment of the environmental compatibility of the employment of paint sludge from the Group plants in road pavements”, funded by FIAT Group Automobiles, 2013-2015.
- “Assessment of the performance of an artificial basin used as a lagooning pre-treatment facility in a WTP”, funded by SMAT S.p.A., 2011-2015.

- “Physical and chemical characterization and design of treatment processes for the recovery of automobile shredder residues (ASR)”, funded by CFF Recycling, 2007-2008.
- “Treatment tests for recovery of grinding scraps”, funded by SKF Industries S.p.A., 2006-2007.
- “Application of the sanitary – environmental risk analysis procedure to artificial sports turf fields”, funded by Comune di Torino, 2006-2007.
- “Evaluation of solid – liquid adsorption coefficients for aromatic hydrocarbons and chlorinated hydrocarbons by means of batch tests”, funded by Studio Aglietto S.R.L., 2004.
- “Characterization and recovery of waste products coming from secondary foundry plants located in Torino surroundings”, funded by Provincia di Torino, 2002-2004.