

## PERSONAL INFORMATION



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## EDUCATION

- 1992 PhD in Sanitary Engineering, Politecnico di Milano
- 1985 M.Sc. in Biological Sciences, University of Rome "La Sapienza"

## POSITION

- Jan 2021 - present Acting Director – CNR Water Research Institute
- 2020 - present Research Director – CNR Water Research Institute
- 2005 Senior Researcher – CNR Water Research Institute
- 2001 Researcher – CNR Water Research Institute
- 1994 - 2001 Researcher (fixed-term position) – CNR Water Research Institute

## RESEARCH INTERESTS

Environmental microbiology and biotechnology; water and wastewater treatment; waste and wastewater valorization; protection of water resources and bioremediation of polluted groundwater, soil and sediments

## HIGHLIGHTS OF SCIENTIFIC PRODUCTION

161 papers in peer-reviewed scientific journals, co-editor of the book "Activated Sludge Separation Problems: Theory, Control Measures, Practical Experiences" (Rossetti S., Tandoi V., Wanner J. Eds. 300 pp.), 13 book chapters and 65 communications in international scientific conferences.

H-index: 36 (Scopus), 46 (Google Scholar)

## OTHER POSITIONS

- 2009 - present Member of the Management Committee of the International Water Association (IWA) Specialist Group "Microbial Ecology and Water Engineering" (MEWE)
- 2005 - 2009 Member of the Management Committee IWA specialist group "Activated Sludge Population Dynamics" (ASPD)
- 2019 - present Board member of the European Federation of Biotechnology-Division of Environmental Biotechnology

## PROFESSIONAL AFFILIATIONS AND MEMBERSHIPS

- Member of Italian Society for General Microbiology and Microbial Biotechnology (IT-SIMGBM)
- Member of Society for Applied Microbiology (SFAM UK)
- Member of International Water Association (IWA)
- Member of European Federation of Biotechnology (EFB-EB)

## JOURNAL EDITORIAL BOARD

- Frontiers in Microbiology (Section of Microbiotechnology, Ecotoxicology and Bioremediation)
- Journal of Applied Microbiology (Wiley)
- Biofilms (Elsevier)
- Annals of Microbiology (Elsevier)
- Letters in Applied Microbiology (Wiley)

## FUNDED RESEARCH

- 2019 - 2022 EU Horizon 2020 R&I action program ELECTRA "Electricity driven Low Energy and Chemical input Technology foR Accelerated

- bioremediation”
- 2016 - 2019 EU Horizon 2020 R&I action program  
BIOWYSE “Biocontamination Integrated cOntrol Wet sYstem for Space Exploration” (Scientific project coordinator)
- 2017 - 2019 EU Horizon 2020 R&I action program  
RES URBIS “REsources from URban Blo-waSte”
- 2015 - 2018 National Project - Fondazione CARIPOLO  
BATA “Bacterial-assisted Adsorption Technology for Arsenic removal from water” (Scientific Responsible of IRSA-CNR Research Unit)
- 2015 - 2016 National Project - CNR and Regione Lombardia Framework Programme  
SUSBIOREM “Sustainable remediation of chlorinated- solvent contaminated groundwater”
- 2014 - 2016 EU Project FP7  
KILL•SPILL “Development of highly efficient and environmentally viable solutions for the clean-up of oil spills”.
- 2014 - 2015 Research project of national relevance PRIN2010  
“Solubilità degli agroecosistemi: processi chimici, biochimici e biologici che regolano la mobilità dell’As nei comparti suolo-acqua-pianta” (Scientific Responsible of IRSA-CNR Research Unit)
- 2012 - 2017 CNR flagship project “RITMARE”  
Research Unit “In situ bioremediation technologies: application of innovative biological decontamination approaches” (RU Scientific Responsible)
- 2011 - 2014 EU Project FP7  
ROUTES “Novel processing routes for effective sewage sludge management”
- 2011 - 2013 EU Project FP7  
MINOTAURUS “Microorganism and enzyme Immobilization: Novel Techniques and Approaches for Upgraded Remediation of Underground-, wastewater and Soil”
- 2008 - 2011 EU Project FP7  
ModelPROBE “Model driven Soil Probing, Site Assessment and Evaluation”
- 2010 - 2011 Research project of national relevance PRIN2008  
“Processi innovativi per il risanamento sostenibile di acque sotterranee contaminate da composti clorurati”(Scientific Responsible of IRSA-CNR Research Unit)
- 2007 - 2010 EU Project FP6  
INNOWATECH “Innovative and integrated technologies for the treatment of industrial wastewater”
- 2005 - 2007 CNR “Curiosity driven” Project  
“Microbiology and modelling: in situ evaluation of the bacterial activity by means of molecular probes targeting the 16S-23S rRNA spacer regions” (Scientific project Responsible)
- 2001 - 2004 EU Project FP5  
DYNAFILM “Dynamics and composition of filamentous micro-organism communities in industrial water systems”.
- 1998 - 2000 EU Project FP4  
MACOBS “Monitoring and Control of Bulking Sludge through Molecular Probe Assay”

#### INTERNATIONAL SCIENTIFIC COOPERATION PROJECTS

- 2014 - 2016 CHINA - Scientific Responsible of the project “The research for sludge bulking causing and control strategy in sewage treatment plants located in high latitude in China” in the framework of the bilateral agreement of scientific cooperation between CNR and the Chinese Academy of Sciences (CAS). China. Chinese Scientific Responsible: Prof. Min Yang, Research Center for Eco-Environmental Sciences, CAS, Beijing (China).
- 2012 MEXICO - Scientific Responsible. Agreement of scientific cooperation between IRSA-CNR and Cinvestav (Department of Biotechnology and Bioengineering of Center for Research and Advances Studies, Istituto Politecnico Nacional, Mexico) on reductive dichlorination of chlorinated ethenes. Mexican Scientific Responsible: Prof. Hector Poggi-Valardo (Cinvestav, Mexico).
- 2012 - 2014 INDIA - Bilateral agreement of scientific cooperation between CNR and CSIR-NEERI (India). Research project: “Bioremediation and rhyzoremediation of Polychlorinated Biphenyl (PCBs)

contaminated soils".

- 2005 - 2006 PORTUGAL - Project in the framework of the Scientific Cooperation Program between CNR and ICCTI "Tailored synthesis of biopolymers by mixed microbial cultures from molasses" (University of Caparica, Lisbon Portugal).

#### VISITING SCIENTIST

- 1997 Department of Microbiology, Advanced Wastewater Management Center, University of Queensland, Brisbane Australia (Prof. L.L. Blackall) - 6 months
- 1989 Department of Civil Engineering, University of Cape Town, Sud Africa (Prof. G.V.R. Marais) - 4 months

#### CONFERENCE ORGANIZATION

- 2021 Conference Chair - Third International Conference on Anaerobic Biological Dehalogenation "DehaloCon III", Roma, September 27-30, 2021
- 2021 Member of the Scientific Committee - 9th IWA Microbial Ecology and Water Engineering Specialist Conference: Microbial Ecology Data & Principles for Water Systems and Industries. Delft, The Netherland, October 18-20, 2021
- 2019 Member of the Scientific Committee - 8th IWA Microbial Ecology and Water Engineering Specialist Conference, Hiroshima, Japan, November 17-20, 2019
- 2018 Member of the Scientific Committee – International Conference on "Sludge Management In Circular Economy" SMICE2018, Roma, May 23-25, 2018
- 2017 Member of the Scientific Committee - VII International Conference on Environmental, Industrial and Applied Microbiology - BioMicroWorld2017, Madrid, Spain, October 18-20, 2017
- 2017 Member of the Scientific Committee - 3rd International Conference on Biogas Microbiology ICBM-3, University of Wageningen, The Netherland, May 1-3, 2017
- 2015 Member of the Scientific Committee - VI International Conference on Environmental, Industrial and Applied Microbiology - BioMicroWorld2015, Barcellona, Spain, October 28-30, 2015
- 2012 Member of the Scientific Committee – International Conference "Environmental Microbiology and Biotechnology in the frame of the knowledge based Bio&Green economy", organized by European Federation of Biotechnology (EFB), Bologna, April 10-12, 2012
- 2009 Member of the Scientific Committee - International Conference IWA-ASPD5 "Microbial Population Dynamics in Biological Wastewater Treatment", Aalborg, Denmark, May 24-27, 2009

#### TEACHING

- 2012 - present Lecturer for the Master Course "Characterization and Technologies for the remediation of polluted sites", Department of Chemistry, La Sapienza University of Rome, Italy.
- 2010 Lecturer of the Course "Microbial Ecology", La Tuscia University, Viterbo, Italy. AY 2010-2011
- 2013 International Training Course "Contaminated site remediation: application of advanced tools to control biological processes" organized by IRSA-CNR, SETAC Italian Branch, EU Project "MINOTAURUS". Rome, May 27-29, 2013
- 2011 Training Course "Bioremediation of contaminated sites: methodologies, role of microorganisms and screening tools" organized by IRSA-CNR and Setac Italian Branch. Roma, March 30 - April 1, 2011
- 2011 ModelPROBE project international training course "Innovative approaches for the characterization of contaminated sites", Remtech, Ferrara, September 29-30, 2011
- 2008 International Course "Operation and control of activated sludge processes using microbiological methods" organised by the International Water Association (IWA), Provincia di Perugia – Assessorato Politiche Ambientali, Centro Studi Politiche Ambientali "L.Bazzucchi", Villa Umbra. Perugia, June 16-20, 2008
- 2004 International Course "Identification of microorganisms by fluorescent in situ hybridization (FISH)" organised by IRSA-CNR, SIMGBM (Italian Society for General Microbiology and Microbial Biotechnology) and Provincia di Perugia. Perugia, October 21-23, 2002; October 6-8, 2004

RECENT REFEREED JOURNAL  
PUBLICATIONS

(2019 - PRESENT)

More information available here:

[https://scholar.google.com/citations?hl=en&user=NcdOeDUAAAAJ&view\\_op=list\\_works&sortby=pubdate](https://scholar.google.com/citations?hl=en&user=NcdOeDUAAAAJ&view_op=list_works&sortby=pubdate)

Tonanzi B., Gallipoli A., Gianico A., Montecchio D., Pagliaccia P., Rossetti S., Braguglia C.M. (2021). "Elucidating the key factors in semicontinuous anaerobic digestion of urban biowaste: The crucial role of sludge addition in process stability, microbial community enrichment and methane production". *Renewable Energy*, 179, 272–284.

Fazi S., Amalfitano S., Venturi S., Pacini N., Vazquez E., Olaka L.A., Tassi F., Crognale S., Herzsprung P., Lechtenfeld O.J., Cabassi J., Capecciacci F., Rossetti S., Yakimov M.M., Vaselli O., Harper D.M., Butturini A. (2021). "High concentrations of dissolved biogenic methane associated with cyanobacterial blooms in East African lake surface water". *Communications Biology*, 4(1), 845.

Tucci M., Cruz Viggi C., Resitano M., Maturro B., Crognale S., Pietrini I., Rossetti S., Harnisch F., Aulenta F. (2021). "Simultaneous removal of hydrocarbons and sulfate from groundwater using a "bioelectric well". *Electrochimica Acta*, 2021, 388, 138636.

Maturro B., Majone M., Aulenta F., Rossetti S. (2021). "Correlations between maximum reductive dechlorination rates and specific biomass parameters in *Dehalococcoides mccartyi* consortia enriched on chloroethenes PCE, TCE and cis-1,2-DCE". *FEMS Microbiology Ecology*, 2021, 97(6), 064.

Kruse S., Türkowsky D., Birkigt J., Maturro B., Franke S., Jehmlich N., von Bergen M., Westermann M., Rossetti S., Nijenhuis I., Adrian L., Diekert G., Goris T. (2021). "Interspecies metabolite transfer and aggregate formation in a co-culture of *Dehalococcoides* and *Sulfurospirillum* dehalogenating tetrachloroethene to ethene". *ISME Journal*, 15(6), 1794–1809.

Zecchin S., Crognale S., Zaccheo P., Fazi S., Amalfitano S., Casentini B., Callegari M., Zanchi R., Sacchi G.A., Rossetti S., Cavalca L. (2021). "Adaptation of Microbial Communities to Environmental Arsenic and Selection of Arsenite-Oxidizing Bacteria From Contaminated Groundwaters". *Frontiers in Microbiology*, 12: 634025.

Dell'Armi E., Zeppilli M., Maturro B., Rossetti S., Petrangeli Papini M., Majone M. (2021). "Effects of the Feeding Solution Composition on a Reductive/Oxidative Sequential Bioelectrochemical Process for Perchloroethylene Removal". *Processes*, 9, 405.

Aulenta F., Palma E., Marzocchi U., Cruz Viggi C., Rossetti S., Scoma A. (2021). "Enhanced Hydrocarbons Biodegradation at Deep-Sea Hydrostatic Pressure with Microbial Electrochemical Snorkels". *Catalysts*, 11, 263.

Crognale S., Braguglia C.M., Gallipoli A., Gianico A., Rossetti S., Montecchio D. (2021). "Direct Conversion of Food Waste Extract into Caproate: Metagenomics Assessment of Chain Elongation Process". *Microorganisms*, 9, 327.

Di Pippo F., Venezia C., Sighicelli M., Pietrelli L., Di Vito S., Nuglio S., Rossetti S. (2020). "Microplastic-associated biofilms in lentic Italian ecosystems". *Water Research*, 187, 116429

Moretto G., Lorini L., Pavan P., Crognale S., Tonanzi B., Rossetti S., Majone M., Valentino F. (2020). "Biopolymers from Urban Organic Waste: Influence of the Solid Retention Time to Cycle Length Ratio in the Enrichment of a Mixed Microbial Culture (MMC)". *ACS Sustainable Chemistry & Engineering*, 8, 38, 14531-14539.

Denaro R., Aulenta F., Crisafi F., Di Pippo F., Cruz Viggi C., Maturro B., Tomei P., Smedile F., Martinelli A., Di Lisio V., Venezia C., Rossetti S. (2020). "Marine hydrocarbon-degrading bacteria breakdown poly(ethylene terephthalate) (PET)". *Science of the Total Environment*, 141608.

Pereira J., Queirós D., Lemos P.C., Rossetti S., Serafim L.S. (2020). "Enrichment of a mixed microbial culture of PHA-storing microorganisms by using fermented hardwood spent sulfite liquor". *New Biotechnology*, 56, 79-86.

Maturro B., Mascolo G., Rossetti S. (2020). "Microbiome changes and oxidative capability of an anaerobic PCB dechlorinating enrichment culture after oxygen exposure". *New Biotechnology*, 56, 96-102.

Marzocchi U., Palma E., Rossetti S., Aulenta F., Scoma A. (2020). "Parallel artificial and biological electric circuits power petroleum decontamination: The case of snorkel and cable bacteria". *Water Research*, 173, 115520.

Amalfitano S., Levantesi C., Copetti D., Stefani F., Locantore I., Guamieri V., Lobascio C., Bersani F., Giacosa D., Detsis E., Rossetti S. (2020). "Water and microbial monitoring technologies towards the near future space exploration". *Water Research*, 177, 115787.

Tonanzi B., Braguglia C.M., Gallipoli A., Montecchio D., Pagliaccia P., Rossetti S., Gianico A. (2020). "Anaerobic digestion of mixed urban biowaste: the microbial community shift towards stability". *New Biotechnology*, 55, 109-117.

Montecchio D., Astals S., Di Castro V., Gallipoli A., Gianico A., Pagliaccia P., Piemonte V., Rossetti

S., Tonanzi B., Braguglia C.M. (2019). "Anaerobic co-digestion of food waste and waste activated sludge: ADM1 modelling and microbial analysis to gain insights into the two substrates' synergistic effects". *Waste Management*, 97, 27-37.

Wu L., et al. (2019). "Global diversity and biogeography of bacterial communities in wastewater treatment plants". *Nature Microbiology*. 4, 1183-1195.

Crognale S., Tonanzi B., Valentino F., Majone M., Rossetti S. (2019). "Microbiome dynamics and phaC synthase genes selected in a pilot plant producing polyhydroxyalkanoate from the organic fraction of urban waste". *Science of The Total Environment*, 689, 765-773.

Crognale S., Casentini B., Amalfitano S., Fazi S., Petruccioli M., Rossetti S. (2019). "Biological As(III) oxidation in biofilters by using native groundwater microorganisms". *Science of the Total Environment*, 651, 93-102.

Amalfitano S., Levantesi C., Garrelly L., Giacosa D., Bersani F., Rossetti S. (2019). "Water quality and total microbial load: A double-threshold identification procedure intended for space applications". *Frontiers in Microbiology*, 9, 2903.

Cappello S., Cruz Viggli C., Yakimov M., Rossetti S., Maturro B., Molina L., Segura A., Marqués S., Yuste L., Sevilla E., Rojo F., Sherry A., Mejeha O.K., Head I.M., Malmquist I., Christensen J.H., Kalogerakis N., Aulenta F. (2019). "Combining electrokinetic transport and bioremediation for enhanced removal of crude oil from contaminated marine sediments: Results of a long-term, mesocosm-scale experiment". *Water Research*, 157, 381-395.

Bacci G., Amalfitano S., Levantesi C., Rossetti S., Garrelly L., Canganella F., Bianconi G., The Biowyse Consortium, Di Pilato V., Rossolini G.M., Mengoni A., Fani R., Perrin E. (2019). "Microbial community composition of water samples stored inside the International Space Station". *Research in Microbiology*, 170(4-5), 230-234.