

Giacomo Bellandi, PhD, Eng

Biography

Giacomo Bellandi holds a PhD and MSc in civil and environmental engineering obtained at Ghent University (Belgium) and Florence University (Italy). His background is water and wastewater treatment processes modelling and field monitoring. He's a committee member of the Modelling and Integrated Assessment group of IWA. At AM-TEAM, he is currently Technology Lead directing the R&D activity on mechanistic modelling of biological processes and advanced oxidation processes. AM-TEAM supports utilities and tech companies worldwide on the next level process operation and design

Process Engineer at AM-TEAM (2020-to date)

- Technology lead
 - Advanced Oxidation Process modelling
 - Bio-kinetic Process modelling
- Senior kinetic modelling expert

Experience and skills

- Over 10 years of experience with modelling wastewater applications. Has modelled tens of different wastewater treatment technologies at pilot and full industrial scale. Full focus on Advanced Oxidation Processes (AOP) and AMOZONE development. Has modelled tens of AOPs worldwide (wastewater and drinking water).
- Specialised in kinetic modelling of (bio)chemical processes.
- Internationally recognized specialist on plants monitoring and modelling, oxygen transfer, and GHGs emissions from wastewater treatment plants.
- Published 16 articles in peer reviewed journals and presented at numerous international conferences (Weftec, World Water Congress, WRRmod, IOA, ...)
- Co-author of an STR book on GHGs for wastewater treatment published by the International Water Association (IWA).
- Specialist Committee Member of the IWA Specialist Group of Modelling and Integrated Assessment, Liaison Officer since 2020.
- IWA and IOA member.

Education

- 2018: PhD double degree in Civil and Environmental Engineering (University of Florence, Italy), and Applied Biological Sciences (Ghent University, Belgium)
- 2014: MSc in Environmental Sanitation, Faculty of Bioscience Engineering (Ghent University, Belgium)
- 2010: BSc in Environmental Engineering (University of Florence, Italy)

Project references

- **Kinetic modelling and CFD modelling of AOP O₃/UV/H₂O₂ MITO3X (2021, Aquasoil, IT)**
Role: Senior modelling engineer
Description: Development of a new AOP with full mechanistic and CFD modelling for detailed process optimization of O₃ and chemicals injection
- **CFD-kinetic modelling of AOPs and digital twin development (2021, HHNK, NL)**
Role: Senior modelling engineer
Description: Full-scale digital twin for online process control and optimization
- **Virtual piloting of 3 full scale ozonation plants (2021, Waterschap De Dommel, NL)**
Role: Senior modelling engineer
Description: O₃ dosage optimization for micropollutants removal and bromate minimization on three non(yet)-existing installations using long term dynamic simulations.
- **Virtual piloting and optimization of 2 full scale ozonation plants in NL (2021, Xylem)**
Role: Senior modelling engineer
Description: O₃ dosage optimization for micropollutants removal and bromate minimization on three non(yet)-existing installations using long term dynamic simulations.
- **Kinetic modelling of ozone pilot installation (2020, Waterschap AA en Maas, Netherlands)**
Role: Senior modelling engineer
Description: Unravelling the mechanisms behind exceptionally high bromate formation in an existing pilot installation.
- **Full-scale modelling of ozonation for secondary wastewater treatment (Tekniskaverken, SW)**
Role: Senior modelling engineer
Description: Mechanistic modelling of long-term dynamics in an existing installation to test alternative control strategies for maximizing micropollutants removal.