

De faculteit Bio-ingenieurswetenschappen van de Universiteit Gent  
heeft het genoegen u uit te nodigen op de

**inaugurele les van**

**prof. dr. ir. Ramon Ganigué**

**op vrijdag 15 juni 2018, van 16u tot 17u  
in lokaal E1.015, Campus Coupure, Coupure Links 653, Gent**

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**Anaerobic microbial technologies for waste valorization**

U wordt ook uitgenodigd op de receptie in de Academische Club (lokaal A1.103) na afloop van de inaugurele les. [Gelieve hier in te schrijven](#) voor 11 juni 2018.

## **Anaerobic microbial technologies for waste valorization**

Our society is transitioning from a linear "take, make, use, dispose" consumerism model to a circular economy in which wastes shall serve as raw materials for the production of commodities. This paradigm shift, triggered by a political and societal will, needs to be supported by new waste management schemes and novel technologies for waste valorization. Microbes can feed on a wide array of substrates and thrive in the most adverse environments. We, humans, have learned to harness them for the production of tasty cheese or vital antibiotics. At the onset of the twenty-first century, microbes can be instrumental in upcycling carbon-based waste into commodities.

Short- and medium-chain carboxylic acids are high-volume, high-value molecules with ample use as chemical building blocks. They can be produced from solid, liquid and gaseous waste and side-streams through fermentations. While bioproduction of target carboxylic acids from wastes is an attractive and promising route, it faces a number of shortcomings and bottlenecks, including unselective conversion, low production rates, high alkali dosing requirements and/or challenging (and often cost prohibitive) downstream processing.

In this lecture I will discuss the role of anaerobic microbial technologies as central cogs for urban bio-refining in the sustainable cities of the future. Taking the main urban waste streams as a starting point, I will outline the different routes by which these can be transformed into valuable bio-chemicals. Last but not least, I will put forward the key technological challenges ahead and discuss how my research activities will tackle them, with the ultimate goal of attaining sustainable and cost-effective bioproduction from wastes.

## **Beknopt Curriculum Vitae**

Ramon Ganigué obtained his Ph.D. at the University of Girona (Spain) in 2010, for which he received the Extraordinary Ph.D. award in Civil and Environmental Engineering. After his graduation, he joined the University of Queensland (Australia) where he applied his expertise in microbial processes to the understanding and control of biogenic sewer corrosion and odours. This research project was awarded the 2014 International Water Association Global Project Innovation Award.

In 2013 he moved back to the University of Girona to investigate the production of chemicals and biofuels from CO/CO<sub>2</sub>-rich gaseous streams through gas fermentation. This initiative was supported by a post-doctoral fellowship of the Regional Catalan Government and a Marie Curie Career Integration Project. In 2015 he was granted a BOF postdoctoral fellowship to continue his research on novel microbial technologies for waste valorization at the Laboratory of Microbial Ecology and Technology at Ghent University.

Since October 2017 he is 50% assistant professor in anaerobic microbial technologies at the Center for Microbial Ecology and Technology. To date he has (co-) authored 35 peer-reviewed A1 publications, and was/is promotor of 3 Ph.D. students and 7 M.Sc. students.