Biofuel production by anaerobic conversion of various waste streams

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In this presentation, we will focus on the use of (microbial) fermentation to convert (biological) waste, as cheap substrate, into biofuels. The cell factory of choice is the anaerobic bacterium Clostridium beijerinckii, well-known for its A/IBE (acetone/isopropanol, butanol, ethanol) fermentation. We will demonstrate production of these biofuel-precursors from paper sludge, seaweed, municipal solid waste, potato peels and even syngas and present examples of improvement of these conversions by metabolic engineering. In addition, we will show how these alcohols and ketones can be upgraded to higher alcohols and longer alkanes by enzymatic condensation reactions.

Biography:

Jeroen Hugenholtz has completed his PhD from the University of Groningen, The Netherlands and postdoctoral studies from University of Georgia, USA. He is currently leader of a fermentation expertise group at Wageningen Research and (part-time) holder of a professor chair at the University of Amsterdam in Industrial Molecular Microbiology. He has published more than 200 papers in international scientific journals and is author of more than 20 patents in the area of (food) fermentation and metabolic engineering.

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