BioFrontiers - Biology Seminar

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Life Sciences Building - A117

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Hidden Power of Methane Bioconversions: From Cells to Reactors to Ecosystems

Methane bioconversion offers a transformative pathway for turning a potent greenhouse gas into valuable biofuels and bioproducts. This seminar explores how we can harness this microbial potential by bridging the gap between fundamental biology and large-scale application. We will trace the methane pipeline across three critical scales: optimizing metabolic pathways within individual cells, overcoming mass-transfer, heat-production, and growth-rate limitations in bioreactors, and understanding the broader carbon impact on natural ecosystems. Ultimately, this multi-scale journey highlights both the immediate bottlenecks and the immense, untapped power of biological methane utilization in emerging areas of bioeconomy.

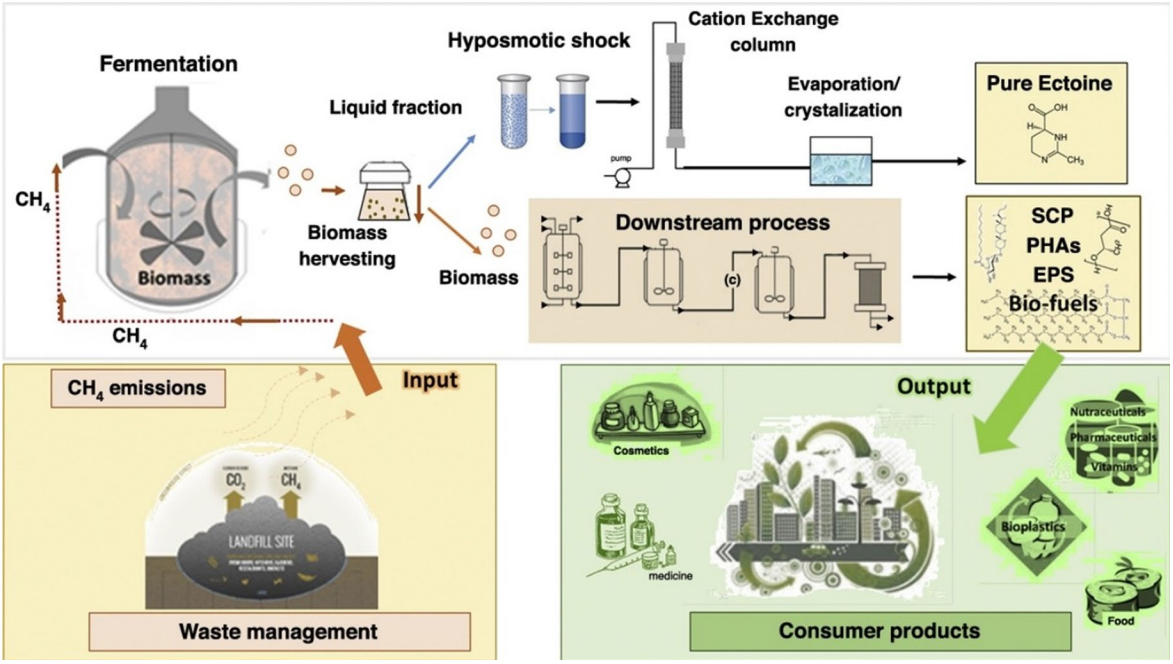

Image from Cantera et al. Current Opin. Biotech. DOI: 10.1016/j.copbio.2017.12.021