

ENERGY

PANEL DISCUSSION

Date 25.10.2024
Session Time 16:20 - 17:20
Room Modulo 1

Chair(s):

Iftach Yacoby (Israel)

Session description

Energy production mostly from fossil fuels is a major contributor to greenhouse gas emissions. Major gaps exist in electric power availability in low-income countries. Microorganisms can make biofuels out of raw organic materials, thereby converting the chemical energy in the biomass into chemical energy in the form of ethanol or hydrogen, for example. In addition, microbes can convert solar energy to hydrogen. Those fuels are then burned to make electrical energy or, in the case of internal combustion engines, kinetic energy to power a car. Another technology that falls under the heading of microbial energy conversion is the microbial fuel cell, a bioreactor in which bacteria transform the chemical energy of biomass directly into electrical energy.

Suggested reading Microbe- made jet fuels <https://www.nature.com/articles/s41587-024-02136-z>

Topics to be discussed Anaerobic fermentation of organic materials and gases; Engineered microbes to produce biofuels and added value products; Circular economy; Microbe produced electricity

Panelists

Presenter

- Tone Tonjum (Norway)
- Roberto Di Leonardo (Italy)
- Diethard Mattanovich (Austria)

Goals of the round table:

- a) List of energy solutions that microbes can provide.
- b) How to engineer microbes to optimize energy production
- c) The economy, sustainability, and equity of microbe-driven solutions for energy