

bioenergy2020+

Zusammenschau aktueller Algen-Projekte

Overview of current algae-projects

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Tulln, 27th April 2018

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Competence Centers for Excellent Technologies

Areas active in algae research

Area 4 Cross Cutting Topics

Sub-Area 4.1
Sustainable Supply & Value Chains

Sub-Area 4.2
Automation and Control

Sub-Area 4.3
Modelling & Simulation

Sub-Area 4.4
Microgrids

Area 1
Biomass Combustion Systems

Area 2
Biomass Gasification Systems

Area 3
Bioconversion & Biogas Systems

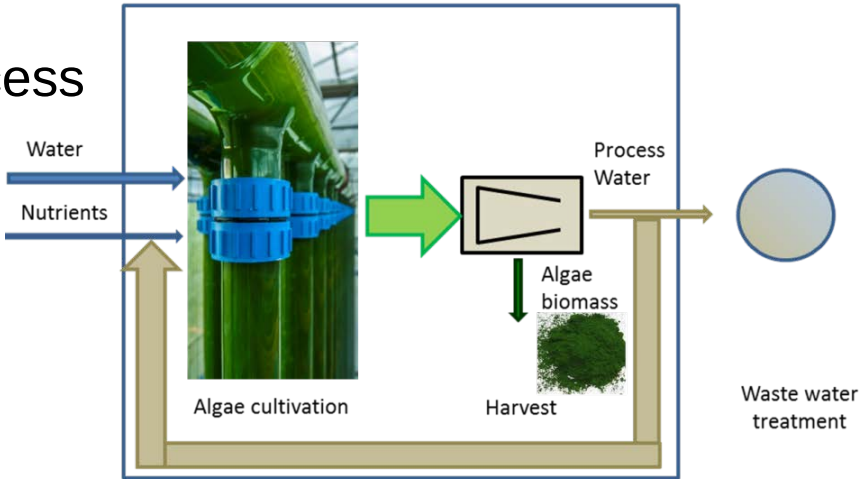
Infrastructure: Lab Services

AlgaeCycle

Recirculation of algae-process water for saving resources & reduce wastewater

Objective(s):

- Increase recirculation of algae-process water for saving water and nutrient resources and reduce wastewater



Highlights / Results (in progress):

- Increase of TOC by increasing number of recirculation
- In process: experiments for removing TOC
- In process: set up data base of substances / biomarkers produced by *A. platensis* and *N. limmnetica*

ecoduna BOKU IFA TULLN ALGATECH n[f+b] NÖ Forschung & Bildung

ALGAE_FARM

Process and method development for heterotrophic cultivation of micro-algae

Objectives:

- Heterotrophic and axenic cultivation of algae strains for the production of food grade biomass and PUFAs

Highlights / Results:

- Successful heterotrophic cultivation at 60L scale for *Chlorella vulgaris* biomass production
- Selection of high-producers of PUFAs and identification of fatty acid spectra

ALG_REF

Cascading utilisation of resources in an algal bioreffinery

Objective(s):

- Integrating microalgae cultivation into a biogas plant with membrane purification of CO_2-offgas
- Test of a cascade photobioreactor at lab scale for micro-algae cultivation

Highlights / Results (in progress):

- A strain isolated from local surroundings was successfully cultivated

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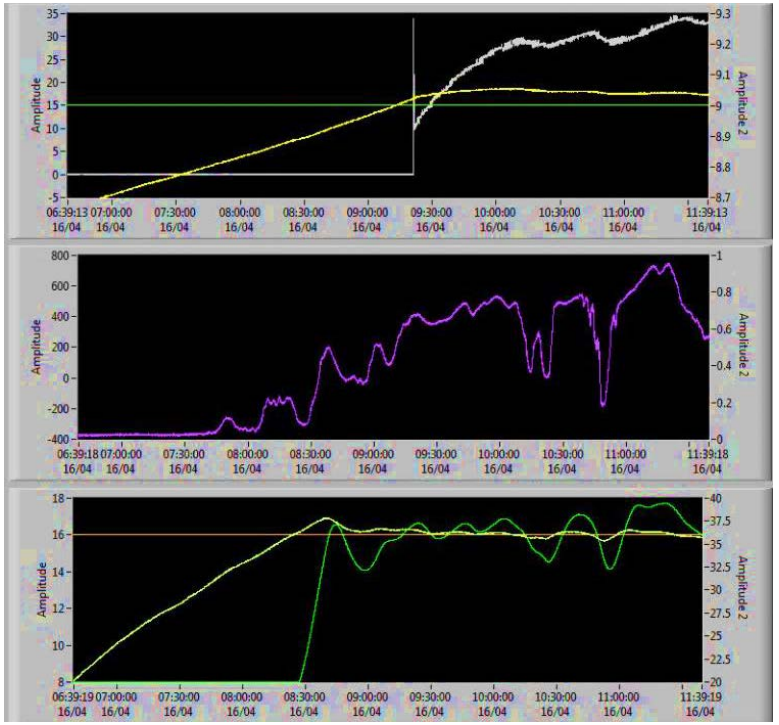
Bio TechControl

Objective(s):

- Optimizing the control and automatization of biotechnological processes
  - WP1: tubular photobioreactor



Highlights / Results (in progress):

- Improvement of CO_2-injection based on pH-value via PID-controller
- Control of pumping speed based on O_2-concentration

The Green P

Production of biomass by algaecultivation at „green“ parking spaces

Objective(s):

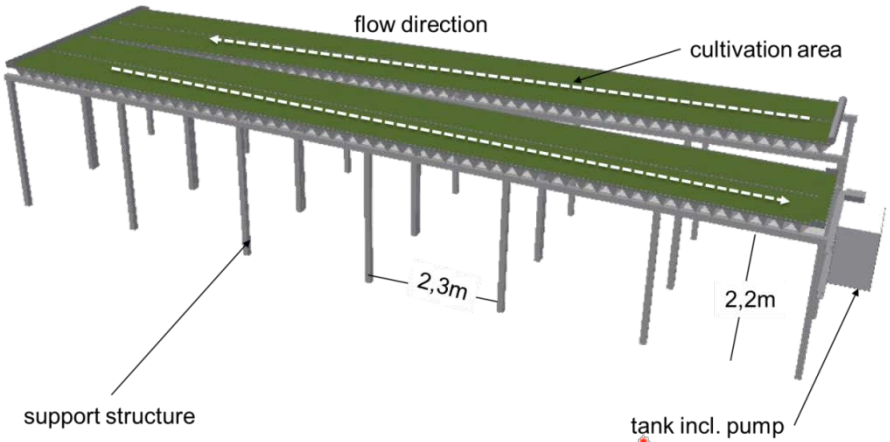
- Utilization of urban traffic areas for the production of biomass to reduce land demand

Videotipp – Algen auf Shopingcenter Parkplätzen – die Energiegewinnung der Zukunft

Video: https://infothek.bmvit.gv.at/algen-auf-shoppingcenter-parkplaetzen-energiegewinnung-der-zukunft/

Highlights / Results:

- >35 km² parking spaces in Austria
- Evaluation of different cultivation systems
- Simulation study: possible yields of 10t biomass/ha/month

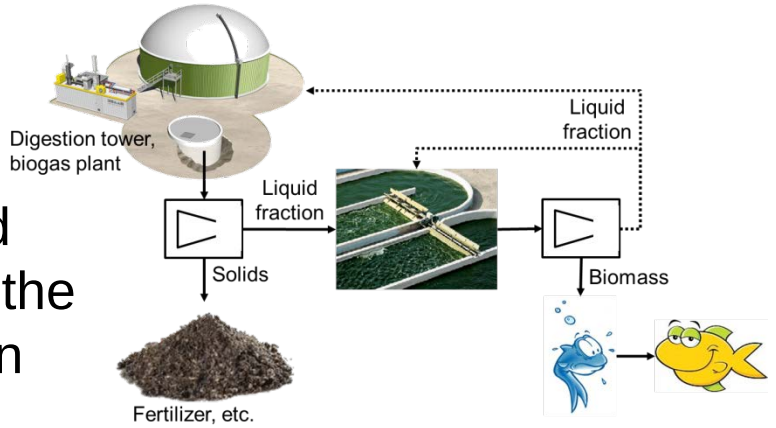


RES_Algae

Appreciation of residues of biogas plants to produce algae biomass for feed industry

Objective(s):

- Utilisation of digestate/wastewater as nutrient source for cultivating algae and algae biomass as fish feed to increase the efficiency of biogas plants and digestion towers



Highlights / Results (in progress):

- Algae biomass cultivated in waste water showed higher lipid concentration than cultivated in mineral media and
- better PUFA patterns than commercially available fish feed
- *In progress*: Fish feeding experiments

Wasser:KRAFT

Energy from water – hydropower and algae

Objective(s):

- Giving pupils an insight in the importance and potential of water as energy source, habitat and cultivation medium for algae

Highlights / Results (in progress):

- Workshops, presentations and tastings
- Excursion to algae cultivation facilities, a biogas and power plant

Kindergarten/ VS/NMS Lunz,
VS Scheibbs, IT HTL/HAK Ybbs,
Privatschule LernOrt Säusenstein

Thanks to all BE2020-Algae-People

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Thank you for your attention!

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