



Using the example of perennial plants for integrated biorefineries



The change from a petroleum based to a more sustainable and bio-based economy necessitates the development of novel concepts to maintain for example the supply of raw materials and energy. Biorefinery concepts for the valorization of lignocellulosic biomass to value-added compounds are promising alternatives to secure economic prosperity combined with ecological and social responsibility. To develop a biorefinery process fulfilling these requirements, a holistic process development is necessary, which considers the whole process chain from plants to production plant.

The international summer school aims to interdisciplinary train talented young researchers, raise their awareness, and create a deeper understanding of a sustainable bioeconomy. The program will cover the whole process starting with sustainable plant biomass production followed by examples for fermentation concepts and downstream processing. In addition, substrate analytics and economic evaluation will be taken into account. Besides keynote presentations, the program will be designed interactively, including exercises and case studies on the different topics covered to give hands-on practice in this highly innovative field of future bio-based process development.

PROGRAMME

9th - 13th September, 2019

DAY 1: Biomass Production	DAY 2: Biorefinery	DAY 3: Analytics	DAY 4: Economics	DAY 5: Wrap-up
<ul style="list-style-type: none"> • Welcoming • Introduction "BioSC" • Introduction in Phenotyping • Excursion to Campus Klein-Altendorf (Agricultural Research Area) 	<ul style="list-style-type: none"> • Introduction of BioSC FocusLabs AP³ and Bio² • Tour at NGP², Aachen • "Challenges during fermentation" - M. Zavrel • "Lignin utilization" - P. Dominguez 	<ul style="list-style-type: none"> • Determining lignocellulose: Cell wall analysis • Workshop "Ion chromatography" • Workshop "NMR spectroscopy" 	<ul style="list-style-type: none"> • Technology Assessment by LCSA • Innovation systems in the bioeconomy • Workshop "Business models" • Sustainability – Introduction and Evaluation 	<ul style="list-style-type: none"> • Discussion • Feedback session • Poster session for and from the participants • Closing

Who can participate?

The Summer School addresses mainly PhD students and advanced Master students with a research focus in bioeconomy. The Summer School is limited to **20 participants**.

How to apply?

Apply via website (www.biosc.de/summerschool_2019) and upload your CV, a motivation letter, a letter of support from your scientific supervisor and your master certificate. Successful candidates will be notified latest until end of Juli 2019.

Scientific Organizers and Speakers

Confirmed Speakers:

- Dr. Michael Zavrel (Clariant Produkte (Deutschland) GmbH, Munich)
- Dr. Pablo Dominguez (Sustainable Momentum, SL, Av. Ansite 3, 4-6, Las Palmas Gran Canaria, E-35011, Canary Islands Spain)

Forschungszentrum Jülich:

H. Klose and P. Grande, Plant Sciences
P. Zapp, Institute of Energy and Climate Research

RWTH Aachen:

N. Ihling, Biochemical Engineering

Heinrich Heine University:

M. Pauly and M. Dama, Institute for Plant Cell Biology and Biotechnology

University of Bonn:

L. Carraresi, C. Block and L. Tsvetanova, Institute for Food and Resource Economics

Application Deadline: 1st July, 2019

Social Programme and Accommodation

You will stay in Jülich. Accommodation including breakfast and lunch will be taken care of. Get in touch with your international summerschool colleagues during the Networking dinner on Wednesday evening.

More Information:

www.biosc.de/summerschool_2019
Summerschool on Lignocellulose Biorefinery

