

**International BioSC Summer School
„Plastic and sustainable bioeconomy.
How does that fit?“**



**08. – 12. May 2023 at the RWTH Aachen, Germany
Location: Invention Center, Campus-Boulevard 30, 52074 Aachen**

Agenda



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Monday, 8th

Morning

9:00 Welcome and introduction to the Summer School concept: Ingar Janzik

9.30 Social gathering of the participants, Short self introduction pitches

10:30 Building up of small working groups for Summer School projects

11:00 General Introduction to Plastic/Bioplastic and the great challenges and chances.

11:00 Nick Wierckx, Forschungszentrum Jülich/BioSC, DE:

Introduction & bio-upcycling 1: Enzymatic depolymerization of plastics

12:00 Lars Blank, RWTH Aachen/BioSC, DE

13:00

Lunch

Afternoon

14:00 Keynote lecture: Harald Ruijsenaars, Corbion, NL:
Industrial bio-based polymer building block production.

15:00 Session on enabling bio-upcycling of plastic hydrolysates:

15:00 Nick Wierckx, Forschungszentrum Jülich/BioSC, DE:

Bio-upcycling 2: microbial metabolism of plastic monomers.

16.00 Stephan Noack, Forschungszentrum Jülich/BioSC, DE:

Carbon efficient production of bio-based monomers: Feedstocks, pathways and automation technology

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Tuesday, 9th

Morning	<p>9:00 Case study on bio-monomer synthesis: Strain development & bioprocess engineering for itaconic acid production with <i>Ustilago</i> 9:00 Introduction in case study: Andreas Jupke</p> <p>9:15: Nick Wierckx, Forschungszentrum Jülich/BioSC, DE: Engineering <i>Ustilago</i> for itaconic acid producing.</p> <p>10:15 Tabea Helm (group of Stephan Noack), Forschungszentrum Jülich/BioSC, DE</p> <p>11:15 Katharina Saur (group of Andreas Jupke), RWTH Aachen, Forschungszentrum Jülich/BioSC, DE</p>
12:30	Lunch
Afternoon	<p>13:30 Session on chemical catalysts and their role in polymerization and depolymerization processes of (bio)plastic, including lab visit</p> <p><i>Contributors:</i> <i>Sonja Herres-Pawlis and colleagues, RWTH Aachen/BioSC, DE</i></p> <p>15:30 Time for group work</p>
<p>19:00 Networking Dinner at Living Room Aachen, Büchel 22, 52062 Aachen</p>	

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Wednesday, 10th (other venue, see at topics)

Morning	<p>09:00 Lab-Day: Hands-on experiments on microbes/microbial enzymes for plastic degradation. Part I. Venue: Room: 42 A, 130, Biologie-Sammelbau I, RWTH Aachen, Worringerweg 1-2, 52074 Aachen <i>Contributors:</i> <i>Lars Blank and colleagues, RWTH Aachen/BioSC, DE</i></p>
	<p>11:00 Session on lab-techniques to label, identify and sort microplastic and to improve proteins für bioplastic degradation, which includes demonstrations and lab visits Part I Location: Otto Bayer Saal / RWTH Aachen, Worringerweg 1-2, 52074 Aachen <i>Contributors:</i> <i>Ulrich Schwaneberg and colleagues, RWTH Aachen/BioSC, DE</i></p>
12:30	<p>Lunch (Social Room AG Blank: Nr. 42 A 116)</p>
Afternoon	<p>13:30 Session on lab-techniques to label, identify and sort microplastic and to improve proteins für bioplastic degradation, which includes demonstrations and lab visits Part II Location: Otto Bayer Saal / RWTH Aachen, Worringerweg 1-2, 52074 Aachen <i>Contributors:</i> <i>Ulrich Schwaneberg and colleagues, RWTH Aachen/BioSC, DE</i></p>
	<p>15:00 Lab-Day: Hands-on experiments on microbes/microbial enzymes for plastic degradation. Part II Venue: Room: 42 A, 130, Biologie-Sammelbau I, RWTH Aachen, Worringerweg 1-2, 52074 Aachen <i>Contributors:</i> <i>Lars Blank and colleagues, RWTH Aachen/BioSC, DE</i></p>

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Thursday, 11 th	
Morning	<p>09:00 Session on the fate of degradable and non-degradable plastics: Pollution, Waste, Combustion, Composting, Recycling. <i>Contributors:</i> 09:00 Jürgen Pettrak, FH Aachen, DE; The good and bad of plastics in wastewater (technology). 10:00 Kevin Carl, TEER RWTH Aachen/BioSC, DE; Closing the carbon loop: Plastic waste treatment today and tomorrow.</p> <p>11:00 group work</p>
12:00	Lunch
Afternoon	<p>13:00 Session on Life Cycle Assessment: Logistics, Supply Chains, Resource Management with a Software-Tutorial for an LCA <i>Contributors:</i> Grit Walther and Veis Karbassi, RWTH Aachen/BioSC, DE</p>
Friday, 12 th	
Morning	<p>09:00 Final preparation of the SummerSchool project results by the working groups 09:30 Group picture 10:00 Presentation of working group results <i>Contributors:</i> Summer School participants</p> <p>Summary and closing remarks Ingar Janzik, BioSC Office, DE</p>
12:00	Light Lunch
Afternoon	Departure

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List of Participants:

Lastname	Firstname	Affiliation
Ansaloni	Tommaso	Politecnico di Milano
Becker	Tabea	RWTH Aachen
Eriksen	Isabell	Aalborg University
Faller	Adrian	RWTH Aachen
Gravgaard	Ditte	Aarhus University
Hobusch	Mandy	Lund University
Jachimowicz	Piotr	University of Warmia and Mazury in Olsztyn
Jia	Yunpu	Chinese Academy of Science/RWTH Aachen
Jusic	Jasmina	Tuscia University
Kaven	Luise	RWTH Aachen
Konjetzko	Thomas	Forschungszentrum Jülich
Konnerth	Philipp	University of Hohenheim
Langletzt	Tim	RWTH Aachen
Manju Sudheer	Malavika	Italian Institute of Technology and University of Genoa
Masram	Chetan	University of Hohenheim
Mohtaj	Pegah	National Institute of Genetic Engineering and Biotechnology
Pal	Upasana	RWTH Aachen
Singh	Navodit	Indian Institute of Technology Delhi
Steffens	Dominik	RWTH Aachen
Swiatek	Katarzyna	University of Hohenheim
Wist	Santino	RWTH Aachen