BIOTEXFUTURE

CO2 REDUCTION IN THE TEXTILE INDUSTRY

DIGITAL FORUM ON OCTOBER 20TH 2021, 13.00 – 16.45H CEST

4TH BIOTEXFUTURE FORUM
AGENDA, 20TH OCTOBER

BIOTEXFUTURE

13:00 – 13:15 **Opening**
Prof. Dr. Stefan Rahmstorf – PIK Potsdam

13:15 – 13:30 **BTF PMO – BIOTEXFUTURE Update**

13:30 – 13:50 Dr. Anna Schulenburg – Climeworks AG
13:50 – 14:10 Gordon Brinitzer – Fraunhofer IGB

14:10 – 14:30 **Break**

14:30 – 14:50 Dr. Jo-Ann Innerlohinger - Lenzing AG
14:50 – 15:10 Dr. Benoit Illy – Fairbricks
15:10 – 15:30 Dr. Jochen Norwig – Covestro AG
15:30 – 15:50 Ernst Siewers – DyeCoo Textile Systems B.V

15:50 – 16:00 **Outlook**
16:00 – 16:35 **Networking Session**
16:35 – 16:45 **Closing**

CREATE THE CHANGE

Moderation:
Christine Anstaett
BIOTEXFUTURE PMO

Tools:
Zoom

About Stefan Rahmstorf

Stefan Rahmstorf is professor of *Physics of the Oceans* at Potsdam University and head of the *Earth System Analysis* department of the Potsdam Institute for Climate Impact Research in Germany. He served the German government from 2004-2013 in the *German Advisory Council on Global Change* (WBGU). He was also one of the lead authors of the 4th Assessment Report of the IPCC.

BIOTEXFUTURE

About the Potsdam Institute for Climate Impact Research

Advancing the scientific frontier on inter-disciplinary climate impact research for global sustainability and contributing knowledge and solutions for a safe and just climate future – this is the twofold mission of the Potsdam Institute for Climate Impact Research (PIK), a member of the Leibniz Association and a leader in its field.

Further information: *www.pik-Potsdam.de*

About the Keynote

Climate Crisis: What we know and what we can do about it

The talk will discuss the latest data and findings from climate science. What impacts does global warming already have? Can we still reach the goals of the Paris Agreement, and what is our remaining carbon budget?

About Anna Schulenburg

Anna Schulenburg studied Chemistry at Oxford University and did her PhD at ETH Zurich. She has more than 10 years experience in Sales and Product Management across different industries from tech to hardware. She joined Climeworks in 2021 to build the industrial market for carbon dioxide removal.

About Climeworks

Climeworks empowers people to reverse climate change by offering carbon dioxide removal as a service and aims at inspiring 1 billion people to act now. With the world's largest climate-positive plant combining direct air capture and storage, the company is driving the development of the carbon removal industry as a market leader.

Further information: *www.climeworks.com*

About the Keynote

Achieving negative emissions with direct air capture

Climeworks will present Orca, the world's first large-scale direct air capture plant, and how it will contribute on the road to net-zero. CO_2 captured from the air can be stored underground or used to create synthetic materials, resulting in long-lasting negative emissions.

About Gordon Brinitzer

Gordon Brinitzer is professional in mechanical engineering with a specialization in algae biotechnology. He joined a US start-up company, which tried to produce ethanol from genetically modified cyanobacteria after his study. In 2014 he started working at the Fraunhofer society and was responsible for the microalgae pilot plant facilities at Fraunhofer CBP. Recent focus of his work is the design of novel ultra-compact modularized, artificially illuminated photobioreactors at the Fraunhofer IGB.

About Fraunhofer IGB

The Fraunhofer IGB has many years of extensive experience with many different algae species in the field of process development for microalgae cultivation, reactor development, and the processing of algae biomass. Processes and interesting biomass compositions are investigated and optimized for industrial applications in the framework of a future bio-economy.

Further information: *www.igb.fraunhofer.de*

About the Keynote

Process intensification with novel photobioreactor concepts in a biorefinery approach and its CO2 reduction potential

Microalgae have enormous potential to play a key role in a future circular bio economy. These tiny organisms are not just a CO2 sink or a future biofuel source, it is possible to obtain a very beneficial tailored biomass spectrum with a variety of highly interesting substances when cultivated in a closed and controlled production system. This presentation will provide an insight view into recent developments regarding the potential of fully artificial illuminated, modular and ultra-compact photobioreactors for algal biomass production and their use in a biorefinery concept.

About Jo-Ann Innerlohinger

Jo-Ann Innerlohinger holds a PhD in Chemistry and joined Lenzing AG in 2005. Since then she held various positions within R&D with increased activities in the fields of bio- and circular-economy during the last years.

About Lenzing AG

The Lenzing Group stands for ecologically responsible production of specialty fibers made from the renewable raw material wood. As an innovation leader, Lenzing is a partner of global textile and nonwoven manufacturers and drives many new technological developments. The Lenzing Group strives for the efficient utilization and processing of all raw materials and offers solutions to help redirect the textile sector towards a closed-loop economy.

Further information: *www.lenzing.com*

About the Keynote

Towards a sustainable textile industry – a fiber manufactures view

As it is a major contributor to climate change the textile industry is facing several challenges. This talk highlights potential solutions – some already existing, some in development. A special focus is on circular and biobased economy.

About Benoît Illy

Benoît holds an award-winning PhD in Materials Science from Imperial College London. Previously he led the development of several high-tech products from the lab to large scale industrial success for global manufacturing corporations such as Saint-Gobain, Safran and Reynard Corp. He is now the CEO of Fairbrics.

About Fairbrics

Fairbrics' mission to fight climate change by developing circular manufacturing processes, which use renewable resources instead of petro-sourced products.

Their first product, Airwear, is a technology that converts cheap and harmful industrial CO2 into polyester yarns for fashion brands that wants to reduce their carbon footprint.

Further information: www.*fairbrics.co*

About the Keynote

Reducing the carbon footprint of polyester manufacturing by using CO2 as a raw materials

Raw material production is responsible for 38% of the CO2 emission of the textile industry. Carbon negative technologies, that offset the green house gas emissions by directly incoparting CO2 inside the fibers, are a promisng solution to produce garments with a net positive impact. Benoit will present the Airwear technologie that allows the produciton of ethylen glycol, a precorsor of polyster, using only CO2 and water.

About Jochen Norwig

Jochen Norwig has been coordinating R&D&I consortia dedicated to the use of CO2 as C1 building block for the synthesis of polymers at Covestro for more than 7 years.
In one joint activity we have gone for novel, more sustainable elastic yarns for textile applications.

About Covestro

Covestro is among the leading suppliers of premium polymers. Our materials and application solutions are found in nearly every area of modern life.

Further information: *www.covestro.com*

About the Keynote

CO_2 as Feedstock for Yarns and Textiles

From polyols with CO_2 as a raw material via thermoplastic polyurethanes, a melt spinning process to multifilaments and finally processing in textile industry: A development of a novel elastic yarn on its way to industrialization.

About Ernst J. Siewers

Technical director of DyeCoo Textile systems
Chemical engineer, Delft University

Leading the development of using Carbon Dioxide for textile dyeing. Started from “proving the idea” via lab and pilot scale equipment to commercial production scale machines.

DyeCoo Textile Systems B.V.

Founded in 2008 by FeyeCon D&I to further develop and commercialize the technology of textile dyeing based on using supercritical CO2. Located in The Netherlands with 8 people as core team surrounded by a large group of partners/suppliers to manufacture and install the machines.

Further information: *www.dyecoo.com*

About the Keynote

Water free and process chemical free textile dyeing

The conventional method of dyeing polyester textiles uses large quantities of water and process chemicals, all released as waste water. By changing from water to CO2 no water and process chemicals are needed. How does this work and what is the status of the technology today.