

Industrial Biotechnology

in the Capital Region Berlin-Brandenburg

Future Industry in the Capital Region



The capital region has developed into one of the leading German biotechnology locations – with more than 240 biotech enterprises in which almost 5000 people are employed. Of those, around 54 companies operate in the industrial biotechnology sector, which is also called the white biotechnology. Their goal is to

- exploit biogenic raw materials for industrial production,
- design more sustainable production processes, and
- improve the competitiveness of the industry.

The industrial biotechnology bears the potential of bringing forth innovative products and new production processes that save energy, costs and greenhouse gases and contribute towards becoming less dependent on fossil raw materials. Therefore, the industrial biotechnology has interfaces to numerous sectors.

Industrial biotechnology in the nutrition industry

One of the most important industry branches of the region is the nutrition industry. It not only

profits from the use of long-known auxiliary means such as yeast and bacteria. Enzymes and new processes are also utilized. Healthier food and animal feed are the goal. The use of probiotic bacteria that protect against illnesses or prebiotics that promote the growth of beneficial bacteria are examples for the practical application of biotechnology. The potentials of microorganisms are researched in the region. For this purpose, new bacterial strains with extraordinary capabilities are looked for or new ways found to utilize algae – for example as dietary supplement. Research generally has great importance: the capital region has one of the densest research landscapes in Europe. The proximity of science and economy as well as diverse networks – for instance in the Food Industry Cluster – promote cooperations and the transfer into practice. Successful business startups develop and use technologies and processes of the industrial biotechnology and allow the region to become an important exporter of technology.

Companies

(selection)

Algenol Biofuels

AnalytiCon Discovery

ANiMOX

AVEBE

BASF Schwarzheide

bbi-biotech

Biopract

Bioworx

CellDeg

CONDIO

CS carbon Solutions

Cyano Biotech

DexLeChem

Dr. Götz Verfahrenstechnik

Biotechnik Umwelttechnik

evoxx technologies

Herbafood Ingredients

HF Biotec Berlin

LXP Group

MINT Engineering

NovaBiotec® Dr. Fechter

Organobalance

Prefere Resins Holding

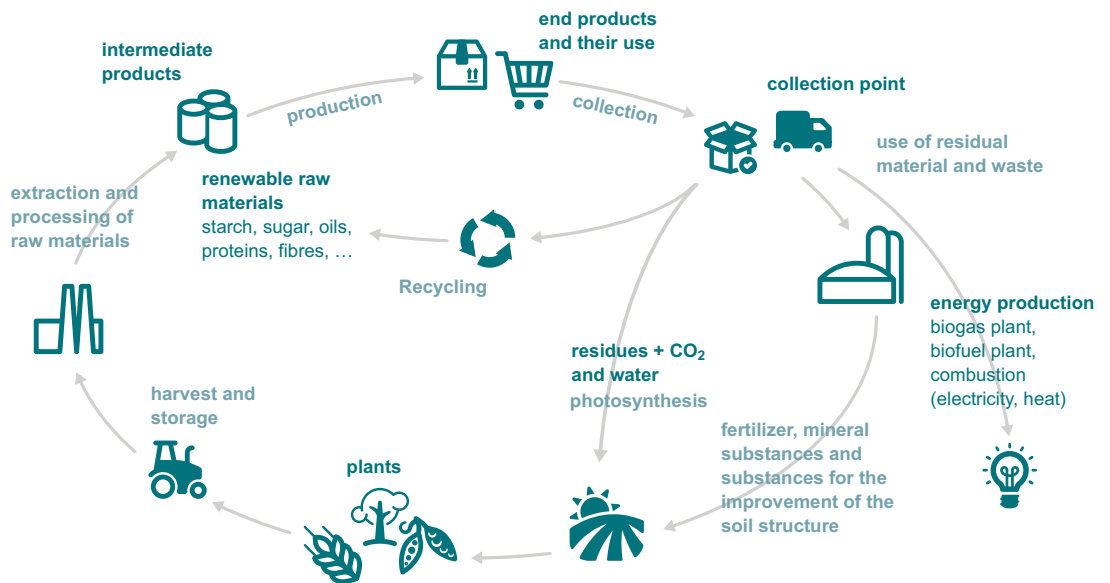
solaga

SunCoal Industries

VERBIO Ethanol Schwedt

Food Industry Cluster

www.ernaerungswirtschaft-brandenburg.de



The concepts made possible through the industrial biotechnology have a recycling economy as their goal. An economy in which residual and waste materials of one process are turned into the raw materials of another. But also the products themselves become raw materials after their use. To reach this goal, the capital region is well-positioned in science, research and the transfer into the implementation. The large state of Brandenburg as well as the city Berlin can simultaneously supply biogenic raw and residual materials.

Industrial biotechnology for chemical and material use

One focus of the regional expertise in the industrial biotechnology sector lies on methods and procedures for the production of biopolymers for biobased and biologically degradable plastics. Pioneering practical implementations are the Innovations Center Bioplastics Lausitz and the PLA pilot plant in Guben. In this region, new paths are sought for producing basic and specialty chemicals from biomass as well as to optimize processes and to make them more sustainable. Regional know-how is offered to the pharmaceutical and fragrance industry, for example re-using methods for catalysts. Biorefineries, which produce diverse intermediate and end products based on biogenic raw and residual material for the industry as well as energy sources, follow a complex concept.

Plastics and Chemistry Cluster
www.kunststoffe-chemie-brandenburg.de

Using biotechnology for the generation of energy

Next to biodiesel, bioethanol and biomethane also glycerin and as cogenerated products fertilizer and feedstuff are produced with the help of biotechnological procedures at the biorefinery in Schwedt (Oder). Furthermore, a technology was developed in the region that enhances the efficiency of biogas plants and broadens the range of raw materials that can be used in the plants. Wood and wood-like substrates including plant waste such as leaves can thus be used in biogas plants. These technologies fit into the picture of the capital region. Because concerning the energy supply, it places its bets on "green". One pioneer is the waste-to-energy plant in Ruhleben. To produce electricity and long-distance heating, it turns organic waste into high-pressure steam that replaces fossil raw materials such as hard coal.

Cluster Energy Technology
www.energietechnik-bb.de



Interview with Dr. Joachim Venus

How do you see the industrial biotechnology embedded in the region?

It is part of one of a total of four focal area in the Berlin-Brandenburg master plan and thus one of the strategic goals of the region.

Which priorities do you see for a further development?

The master plan defines the guidelines for this also. One focal point is to promote the communication between science and economy. If a faster transfer from research into practice is achieved, the value creation potentials of biotechnology can properly unfold. Another focus is the targeted support of the innovative capabilities of small and medium-sized enterprises. At the same time, assistance is required to stimulate and accompany spin-off companies but also to further the establishment of cooperations with large enterprises.

What could the support from both federal states, Berlin and Brandenburg, look like exactly?

Measures for the identification of the most innovative ideas and their cross-state support are important. Already a fixed part in the master plan are the biotechnological applications for a healthy diet and food safety as well as the support of technology platforms and pilot plants, for example for the use of lignocellulose from residual materials. Their cross-state support is a prerequisite to tap into additional sources of financing and to create a startup climate. Besides, young talents must be supported in a targeted fashion. Retaining the younger generation in the region is crucial for a further expansion of the industrial biotechnology and thus for the development of many sectors.

Research facilities (selection)

Fraunhofer Institute for Applied Polymer Research (IAP)

Helmholtz-Zentrum Geesthacht

Institut für Getreideverarbeitung (IGV)

Institute for Food and Environmental Research (ILU)

Leibniz Institute for Agricultural Engineering and Bioeconomy (ATB)

Max Planck Institute of Colloids and Interfaces

Versuchs- und Lehranstalt für Brauerei in Berlin e. V.

Biotech parks

berlinbiotechpark

Biotech Campus Potsdam

Luckenwalde

Biotechnology Park

Campus Berlin-Buch

co:bios Technology Center Hennigsdorf

GO:IN Golm Innovationszentrum Potsdam

Innovationspark Wuhlheide Berlin

Science and Technology Park Adlershof



Dr. Joachim Venus

Leibniz Institute for Agricultural Engineering and Bioeconomy (ATB) and member of the body of experts of the focal area biotechnology & pharmaceuticals of the Food Industry Cluster



HealthCapital
BERLIN BRANDENBURG

Industrial biotechnology in the capital region at a glance

- With 240 enterprises and 5000 employees, the capital region is one of the leading German biotechnology locations
- 54 companies cover the relevant topics of the modern industrial biotechnology as service providers, developers of technologies and producers
- University and non-university research institutes ensure the scientific advance in the development of technology

- Focal points in research and industry are amongst others:
 - bioprocess engineering
 - biocatalysis - enzyme development
 - microbiology
 - metabolomics
 - prebiotics and probiotics
 - decentralized bioenergy production
 - algae biotechnology
 - natural products development

- All cross-sectional technologies for the industrial biotechnology are present
- Outstanding raw material base for the industrial biotechnology
- Closed value-added chain in the use of renewable raw materials for material extraction, nutrition and bioenergy
- Excellent infrastructure for research and pilot production of biopolymers and products for food, chemistry and bioenergy
- Availability of qualified skilled personnel

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