

Industrial Biotechnology in Bavaria – coordinated by IBB Netzwerk GmbH

The company Industrielle Biotechnologie Bayern Netzwerk GmbH (abbreviated: IBB Netzwerk GmbH) is a network organization in service of Industrial Biotechnology and sustainable economic growth. Since 2008, IBB Netzwerk GmbH catalyzes the implementation of innovative biotechnological processes and procedures in the area of Industrial Biotechnology. One of its main tasks is to connect partners from large industry, small and medium enterprises (SMEs) and academy, to implement joint projects.

One other assignment is the management of the Network IBB which grew over time to almost 100 members to date. It includes large industry, SMEs, universities, research institutions and others. Under the umbrella of the Network IBB, there exist several sectors of industry members with the corresponding expertise (Figure 1).

Focus of the network

In the beginning, the focus of the network activity was:

- the biotechnological production of bulk and specialty chemicals through integrated use of biomass, as well as
- the extraction and the use of performance-proteins.

Meanwhile, other topics have been added, such as

- the generation of innovative biomaterials, like biopolymers, and high quality ingredients for the food and cosmetic industry;
- the utilization of plant proteins and secondary plant compounds as well as non-plant biomaterials;
- the production of second and third-generation biofuels, as well as
- process optimization.

The focus on additional topics shall help to integrate Industrial Biotechnology, for example, in the paint and coatings industry, in the production of lubricants and adhesives as well as lightweight materials, bio-plastics, textiles and many more.

Achievements of the network members

With support of IBB Netzwerk GmbH, the Network IBB has mobilized until end of 2013 more than 100 million euros for research and development projects, equipment and structural measures in the field of Industrial Biotechnology:

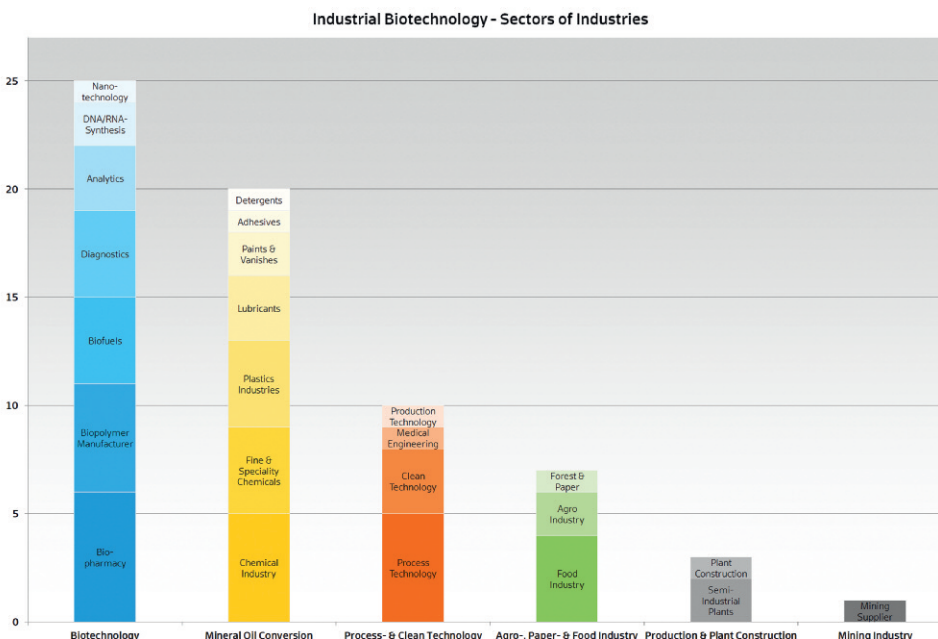


Figure 1: Sectors of industry members within Network IBB. Note that allocation to a certain sector is approximate and that some enterprises were assigned twice due to more than one focus of activities.

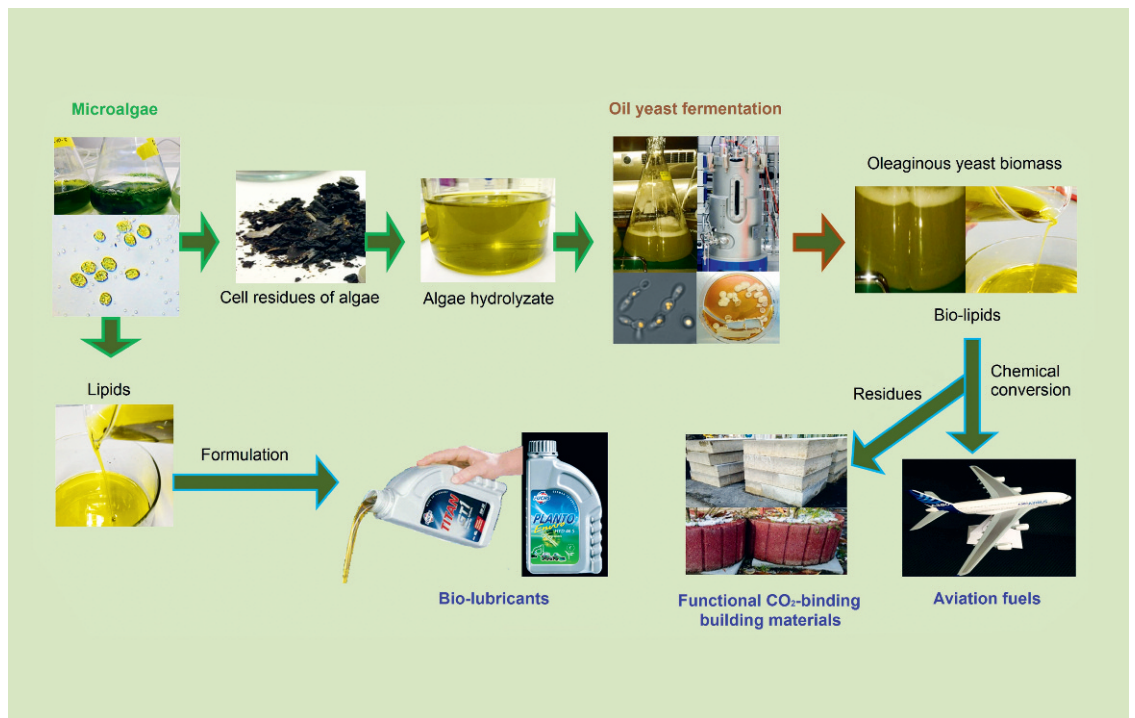


Figure 2: The concept of Advanced Biomass Value: An integrated biorefinery without residue streams.

- The total volume of 17 research and development projects in the IBB network amounts to about 47 million euros.
- 43.5 million euros flow into the (re)construction of four different industrial plants (incl. accompanying research) and one plant of the Technical University of Munich - from pilot to demonstration-scale.
- 10 million euros account for technical-structural measures, such as the Fraunhofer Project Group BioCat in Straubing, the master program "Industrial Biotechnology" at the TU Munich or the ZIM cooperation network "Bioplastics".

"Advanced Biomass Value": Sustainable production by energetic and material utilization of algae biomass

One of our recent project highlights is the joint research project "Advanced Biomass Value" (ABV). The focus of the academic and industrial consortium is the complete valorization of algae biomass components in a waste free and energy efficient integrated biorefinery concept. Algae biomass represents a new, "third generation" biogenic feedstock, with hallmarks such as high biomass yields, low lignin content, and improved land use efficiency. Hence this biomass feedstock does not compete with food and feed production or agricultural activities in general. The aim of the nine project partners under the leadership of the Department of Industrial Biocatalysis at the Technical University of Munich is the energy-efficient production of algae biomass, its subsequent components fractionation and processing to a

complementary product portfolio. Primarily, algae lipids are converted into high-performance lubricants. Then, the remaining algae biomass is further processed to bio-kerosene via a fermentative procedure employing oleaginous microbial biocatalysts. The side products accumulated in the chemical biomass conversion to renewable aviation fuels is utilized in the production in CO₂-adsorbing building materials. As a result, all resources are converted to value adding products in a noncompeting, synergistic commercialization strategy. ABV is funded with 4 million euros by the BMBF and runs until 2016.

At www.ibbnetzwerk-gmbh.com/en/ibb-netzwerk/achievements-facts-and-figures/rd-projects/ you can find all research and development projects successful in the Network IBB.

CONTACT

Industrielle Biotechnologie Bayern Netzwerk GmbH
 Am Klopferspitz 19
 D-82152 Martinsried
 Phone: +49 (0)89-5 40 45 47-0
 Fax: +49 (0)89-5 40 45 47-15
 Email: info@ibbnetzwerk-gmbh.com
 Internet: www.ibbnetzwerk-gmbh.com

