Dortmund, March 9th, 2020 - b.fab GmbH received the official letter for project funding from BMBF (German Federal Ministry of Education and Research) at the end of February as part of the call CO2-WIN. The project "TRANSFORMATE" coordinated by b.fab has set the goal to convert CO_2 emissions from industrial parks into valuable biopolymers. In addition to b.fab, the project consortium includes a total of 7 project partners from academia and industry: Max Planck Institute for Molecular Plant Physiology, Max Planck Institute for Colloids and Interfaces, University Stuttgart, Ertel IonStream UG, YNCORIS GmbH & Co. KG and Dechema e.V.. The project runs for 3 years from 01.03.2020 to 28.02.2023.

The objective of the project is the recycling of CO_2 exhaust gases from industrial parks into valuable, biodegradable and stable bioplastics. For this purpose, a novel combination of electrochemical conversion and biotechnology is chosen. In the first step, CO_2 is converted into formic acid in an electrolyzer, and then converted into bioplastics in a second step by means of bacteria. Target products are polyhydroxy butyric acid (PHB) and crotonic acid. The project consortium covers the entire value chain and brings together high-ranking academic institutes such as the Max Planck Institutes in Potsdam and the University Stuttgart with proven industry experts. At the end of the project, an integrated process with an electrolyzer and bioreactor on a laboratory scale is expected to be operational, and thus being able to produce the two target molecules directly from CO_2. The project serves as a preparation for further industrialization of the process, which is already being addressed in the project. The work is accompanied by a comprehensive life-cycle-analysis (LCA) and a technical-economic evaluation (TEA) of the process.

For b.fab, the project offers an excellent opportunity to demonstrate its platform technology of the Formate Bioeconomy using the two bioplastics as an example. The contribution of the expertise of the different partners on the entire value chain promises a fast and target-oriented implementation. Dr. Frank Kensy, Managing Director of b.fab and coordinator of the project, comments on the start of the project as follows: "We at b.fab are very happy that we are able to carry out the project with this competent consortium and are supported by the BMBF. This gives us the opportunity to demonstrate our CO_2 utilization process as a fully integrated process, and thus providing a sustainable solution for climate change".

b.fab counts on the unlimited raw material CO_2. Primarily, CO_2 emissions from point sources are used and are activated by renewable energy, in order to produce value-added chemicals or proteins sustainably in an innovative biotechnological process. The uniqueness of the b.fab process is that CO_2, water and renewable energy are stored in liquid formic acid. That means CO_2 and H_2 become storable and transportable. The technology of the company is extremely energy efficient and can be used in both anaerobic or aerobic fermentations. b.fab wants to make a significant contribution to carbon recycling and the utilization of renewable energy in the chemical and manufacturing industry with its new process.